Welcome Message

Dear Friends and Colleagues!

It is our great pleasure and privilege to have all of you for The 3rd Biennial Meeting of Asian Society of Gynecologic Oncology (ASGO) in December 13-15, 2013, at The Westin Miyako Kyoto, Japan.

In Asian countries, although we have still many patients with gynecological cancer, medical care in each country has dramatically been improving by tremendous efforts of physicians/medical staffs and our partnership in globalization. We are now coming into “New Era of Gynecologic Oncology in Asia”. In this sense, ASGO Meeting is an important chance to be able to meet together, exchange our knowledge and experience, and enthusiastically be involved in face-to-face discussion for better women’s healthcare.

In addition, for the success of this ASGO Meeting, we have had many famous oncologists, pathologists and scientists from overseas including other than Asian countries. We would like to express our sincere thanks to the distinguished guests for kind visit. We would be grateful if all of the attendants could fully communicate each other and become true friends, not only at Congress Venue but also in various Heritages in Kyoto.

Thank you very much again for coming to Kyoto in the holiday season. Please enjoy both of Scientific and Social Programs of ASGO, and try other Activities in Kyoto.

With best regards,

Toshiharu Kamura, M.D., Ph.D.
President, Asian Society of Gynecologic Oncology (ASGO)

Ikuo Konishi, M.D., Ph.D.
Congress President,
The 3rd Biennial Meeting of ASGO
ASGO Council Member

President of ASGO
Toshiharu Kamura

President-Elect of ASGO
Joo-Hyun Nam

Honorary Advisor and Representative Founder of ASGO
Shingo Fujii Soon-Beom Kang

Secretary Treasurer of ASGO
Jae Weon Kim

Assistant Secretary-Treasurer of ASGO
Kimio Ushijima

Council Members of ASGO
Mohamad Farid Aziz (Indonesia) Suresh Kumarasamy (Malaysia)
Zeyi Cao (China) Hextan YS Ngan (Hong Kong)
Yin Nin Chia (Singapore) Kazunori Ochiai (Japan)
Uma Devi (India) Hee-Sug Ryu (Korea)
Noriyuki Inaba (Japan) Yasuhiro Udagawa (Japan)
Efrén Domingo (Philippines) Kung-Liahng Wang (Taiwan)
Seung-Cheol Kim (Korea) Sarikapan Wilailak (Thailand)

Local Organizing Committee of The 3rd Biennial Meeting of ASGO

Chairman
Ikuo Konishi

Honorary Advisor
Kiichiro Noda

Advisor
Shingo Fujii

Organizing Committee Members
Yasuhiro Udagawa Toshiharu Kamura Masahide Ohmichi Noriaki Sakuragi
Daisuke Aoki Junzo Kigawa Kazunori Ochiai Toru Sugiyama
Noriyuki Inaba Mikio Mikami Satoru Sagae Nobuo Yaegashi
Hidetaka Katabuchi Makio Mukai Tsuyoshi Saito Makoto Yasuda

Secretary General
Masaki Mandai

Correspondence
Noriomi Matsumura
Department of Gynecology and Obstetrics, Kyoto University Graduate School of Medicine
54 Shogoin Kawahara-cho, Sakyo-ku, Kyoto 606-8507, Japan
Phone: +81-75-751-3267 Fax: +81-75-761-3967
http://www.kuhp.kyoto-u.ac.jp/~obgy/

Organizing Secretariat of The 3rd Biennial Meeting of ASGO
C/o MA Convention Consulting
Kojimachi Parkside Building 402, 4-7 Kojimachi, Chiyoda-ku, Tokyo, 102-0083 Japan
Telephone: +81-3-5275-1191 Fax: +81-3-5275-1192 Email: asgo2013@macc.jp
http://www.asgo2013.org/
Information for Participants

Dates and Venue
・Dates: December 13 (Fri)-15 (Sun), 2013
・Venue: The Westin Miyako Kyoto
   Keage, Sanjo, Higashiyama-ku, Kyoto 605-0052, Japan
   TEL: +81-75-771-7111
   FAX: +81-75-751-2490

Registration Fee
Registration desk is open at 3F and 4F of the venue as follows:

Pre-Registration desk: West Wing 4F Lobby
On-Site Registration desk: West Wing 3F Lobby

・December 13 (Fri) 7:30~18:30
・December 14 (Sat) 7:30~18:40
・December 15 (Sun) 7:30~14:40

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<thead>
<tr>
<th>Category</th>
<th>Pre-Registration (Before November 14)</th>
<th>On-site Registration</th>
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<tbody>
<tr>
<td>Physician</td>
<td>20,000JPY</td>
<td>22,000JPY</td>
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<tr>
<td>Nurses, Clinical Laboratory Technicians</td>
<td>5,000JPY</td>
<td>5,000JPY</td>
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<tr>
<td>Junior Residents (Intern), Medical Students</td>
<td>Waived</td>
<td>Waived</td>
</tr>
<tr>
<td>Participants from Developing Countries*</td>
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<td>11,000JPY</td>
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</tbody>
</table>

*Developing countries are defined according to the World Bank Country Classification of Low income and Lower-middle income economies. Please see the website for details.

The fee covers:
・Participation in all scientific sessions
・Printed material of the conference
・Entrance to the exhibition
・Congress lunches
・Opening Ceremony/Welcome Reception
・Banquet

Social Events
Opening Ceremony/Welcome Reception
・Date and Time: 19:00~21:00, December 13 (Fri)
・Venue: Yamashiro, East Wing, 2F, The Westin Miyako Kyoto
Banquet
・Date and Time: 19:00~21:00, December 14 (Sat)
・Venue: West Wing 2F Lobby, The Westin Miyako Kyoto

Instructions for Oral Presentation
1) All speakers are requested to bring their presentation data on USB memory, CD-R or their own PC to PC Preview (See details below) and to upload their presentation data at least 30-min before their session.
2) All speakers are requested to be seated at the Next Speaker’s seats located in the left front row 10-min before their session starts.
3) Scientific Committee will allot each speaker of Workshop 6-min oral presentation followed by 3-min discussion guided by chairpersons. Speakers are requested to strictly keep the allotted time.

Notes:
2) Recommended typeface: Century, Century Gothic, Arial, Times New Roman. Please avoid special characters.
3) Please include the presentation number and presenter’s name in the file name.
4) If you create your presentation using a Macintosh and/or moving images, please bring your own computer.
5) If you use your own PC, please bring your power adaptor.
6) Presenter Tool displaying your manuscript on PC monitor at the podium is not available.
7) PC Preview is open as follows:
   PC Preview: Room Take, West Wing 3F, The Westin Miyako Kyoto
   ・December 13 (Fri)  7:30~18:30
   ・December 14 (Sat)  7:30~18:40
   ・December 15 (Sun)  7:30~14:40

Instructions for Poster Presentation

<table>
<thead>
<tr>
<th>Poster</th>
<th>Date and Time</th>
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<tbody>
<tr>
<td>Setting Up</td>
<td>8:00~11:30 on December 13 (Fri)</td>
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<tr>
<td>Poster Session</td>
<td>11:30~12:30 on December 13 (Fri)</td>
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<tr>
<td>Poster Viewing</td>
<td>12:30~18:30 on December 13 (Fri)</td>
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<tr>
<td></td>
<td>8:30~18:30 on December 14 (Sat)</td>
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<td>8:30~14:00 on December 15 (Sun)</td>
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<tr>
<td>Removal</td>
<td>14:00~15:00 on December 15 (Sun)</td>
</tr>
</tbody>
</table>

1) All posters should be set up between 8:00~11:30 on December 13 (Fri).
2) All posters are to be written entirely in English.
3) Scientific Committee will allot each speaker 2-min brief presentation guided by moderators.
Poster Scheme of Presentation:

1) A presentation number to be placed at the top left of the poster will be provided by the Secretariat. Each author is requested to indicate the “title”, “authors’ names” and “authors’ affiliations” at the top right of the panel within an area measuring 70cm wide by 20cm high.

2) The poster contents should be arranged to describe the “objective”, “method”, “results” and “conclusion” of the presentation.

3) The usable area of the contents is the size measuring 90cm wide by 180cm high. The layout of the presentation contents is at the authors’ discretion.

4) The typeface used on the poster panel should be at least 18mm high so that the content can be read from a distance.

5) Tables and figures should likewise be of an appropriate scale, with text large enough to be read easily.

6) Posters are attached to the boards with thumbtacks, which will be provided by the Secretariat. No paste, glue, staples and/or nails are permitted.

COI Disclosure Requirements
The Secretariat asks that all Speakers/Presenters disclose any conflict of interest at the time of presentation for the benefit of conference delegates. To this effect, a slide at the end or beginning of your presentation should contain a brief summary of conflict(s) of interest using the template below.

<table>
<thead>
<tr>
<th>Categories</th>
<th>No</th>
<th>Yes (Give Name of Companies)</th>
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<tbody>
<tr>
<td>1. Employment/Leadership position/Advisory role</td>
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<td>2. Stock ownership</td>
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<td>3. Patent royalties/licensing fees</td>
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<td>4. Honoraria (e.g. lecture fees)</td>
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<td>5. Fees for promotional materials (e.g. manuscript fee)</td>
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<td>6. Research funding</td>
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<td>7. Others (e.g. trips, travel, or gifts)</td>
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<tr>
<td>8. Acceptance of researchers from commercial entities</td>
<td></td>
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<tr>
<td>9. Endowed chairs</td>
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## Time Table [Day1] —December 13 (Friday)—

### The 3rd Biennial Meeting of ASGO/The 55th Meeting of JSGO

#### The Westin Miyako Kyoto

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>8:00</td>
<td>7:55–8:30  Welcome Message</td>
</tr>
<tr>
<td>8:30</td>
<td>6:00–6:30  The 55th JSGO Grant Seminar</td>
</tr>
<tr>
<td>8:30</td>
<td>Chair: Masahide Ohmichi</td>
</tr>
<tr>
<td>8:30</td>
<td>Speakers: Junzo Hanimishi/Masafumi Toyoshima</td>
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<tr>
<td>9:00</td>
<td>The 55th JSGO Educational Seminar</td>
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<tr>
<td>10:00</td>
<td>Chairs: Noriaki Sakuragi, Junzo Kigawa</td>
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<tr>
<td>10:00</td>
<td>Speakers: Makoto Mark Taketo, Norimitsu Kadowaki, Akira Shimizu, Toru Sugiyama, Miiko Nimi, Keiko Sato</td>
</tr>
<tr>
<td>11:00</td>
<td>(Some parts in Japanese, and simultaneous interpretation for English)</td>
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<tr>
<td>12:00</td>
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<tr>
<td>12:30</td>
<td>The 3rd ASGO Opening: Luncheon Symposium—Eradication of Cervical Cancer from Earth: Global Approach—</td>
</tr>
<tr>
<td>13:00</td>
<td>Chairs: Barbara A. Goff/Shingo Fujii</td>
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<tr>
<td>13:00</td>
<td>Speakers: Lynette A. Denny/Murat Gultekin/Vesna Kesic</td>
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<tr>
<td>13:00</td>
<td>Co-Sponsor: Japan Vaccine Co., Ltd., QIAGEN K.K.</td>
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<tr>
<td>13:40</td>
<td>The 3rd ASGO Opening Plenary: Welcome from Japan</td>
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<tr>
<td>13:40</td>
<td>Chair: Soon-Beom Kang</td>
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<tr>
<td>13:40</td>
<td>Speaker: Yoshinari Kamura</td>
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<tr>
<td>13:40</td>
<td>Chair: Toru Sugiyama</td>
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<tr>
<td>13:40</td>
<td>Speaker: Masahiko Nishiyama</td>
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<tr>
<td>13:40</td>
<td>Chair: Joo-Hyun Nam</td>
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<tr>
<td>13:40</td>
<td>Speaker: Masahiro Hirakawa</td>
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<tr>
<td>13:40</td>
<td>Chair: Hiroyuki Yoshikawa</td>
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<tr>
<td>13:40</td>
<td>Speaker: Hiroyuki Mano</td>
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<tr>
<td>16:00</td>
<td>The 3rd ASGO Evening Symposium [1]</td>
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<tr>
<td>16:00</td>
<td>Treatment of Advanced/Recurrent Ovarian Cancer: Future Perspective</td>
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<tr>
<td>17:00</td>
<td>Chairs: Sarikapan Williak, Kazunori Ochiaki</td>
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<tr>
<td>17:00</td>
<td>Speakers: David M. Gershenson, Seiji Isonishi, Keiichi Fujiwara, Sang-Yoon Park, Chin-Long Chang, David G. Huntsman</td>
</tr>
<tr>
<td>18:00</td>
<td>Co-Sponsor: Bristol/Myers Squibb, Janssen Pharmaceutical K.K.</td>
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<tr>
<td>Time</td>
<td>Event</td>
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<tr>
<td>8:00~11:30</td>
<td>Exhibition/Poster Setup</td>
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<tr>
<td>11:30~12:30</td>
<td>Poster Session</td>
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<tr>
<td>12:30~18:30</td>
<td>Exhibition/Poster Viewing</td>
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<tr>
<td>12:30~18:30</td>
<td>Poster Viewing</td>
</tr>
<tr>
<td>19:00~21:00</td>
<td>Opening Ceremony/Welcome Reception</td>
</tr>
</tbody>
</table>

**Poster Session 1~18**

1. Vulvar and Vaginal Cancer/Cervical Cancer: HPV
   Chairs: Kei Kawana/Kazuyoshi Kato
   P-001~P-012

2. Cervical Cancer: Screening, VIA, Cytology
   Chairs: Masashi Takano/Neerja Bhatta
   P-003~P-025

3. Cervical Cancer: Staging, Imaging, Lymph node metastasis
   Chairs: Haruo Kuboishi/Affia Angella Ratnasari
   P-026~P-038

4. Cervical Cancer: Conization, Surgery, Histology
   Chairs: Kaneyuki Kubushiro/Hitendra Pariyar
   P-039~P-053

   Chairs: Kuniko Utsugi/Guerny Michelle Dyan A. Alas
   P-054~P-070

6. Cervical Cancer: Radiotherapy, Chemotherapy, QOL
   Chairs: Masato Nishimura/Tanomsiri Soonthornthum
   P-071~P-087

7. Uterine Cancer: Risk factors, Imaging, Lymph node metastasis
   Chairs: Hirofumi Tashiro/Hyo Sook Bae
   P-088~P-103

8. Uterine Cancer: Individualization, Histology
   Chairs: Takashi Iwata/Oni Khonsa
   P-104~P-114

9. Uterine Cancer: Molecular biology, Fertility
   Chairs: Kimio Ushijima/Wen-Fang Chen
   P-115~P-130

10. Uterine Cancer: Surgery, Chemotherapy, Radiotherapy
    Chairs: Tsukasa Baba/Lkhagvadulam Dangae
    P-131~P-138

11. Ovarian Cancer: Origin, BRCA, Peritoneal carcinoma, Borderline tumor
    Chairs: Yoshihito Yokoyama/Jin Woo Shin
    P-139~P-157

12. Ovarian Cancer: Mixed tumor, Germ cell tumor
    Chairs: Seiichi Kami/Limavel Ann M. Veloso
    P-158~P-170

13. Ovarian Cancer: Screening, Imaging, Tumor marker
    Chairs: Kenzaburo Sonoda/Junho Hamamishi
    P-171~P-180

14. Ovarian Cancer: Molecular biology and Immunology
    Chairs: Kenichiro Morishige/Hisahiro A. Abou-Taleb
    P-181~P-192

15. Ovarian Cancer: Molecular biology and Immunology
    Chairs: Tomoko Kita/Peng Jin
    P-193~P-203

16. Ovarian Cancer: Surgery, Laparoscopy
    Chairs: Yoshinori Itoh/Sang-Yoon Park
    P-204~P-214

17. Ovarian Cancer: Chemotherapy, Radiotherapy, QOL
    Chairs: Tsutomu Tabata/Veena Jain
    P-215~P-223

18. Ovarian Cancer: Chemotherapy, Radiotherapy, QOL
    Chairs: Toyomi Sakaguchi/Sozua Machida
    P-224~P-232
## Time Table [Day2] —December 14 (Saturday)—

### The 3rd Biennial Meeting of ASGO/The 55th Meeting of JSGO

**The Westin Miyako Kyoto**

<table>
<thead>
<tr>
<th>Time</th>
<th>Hall A [4F Mizuho(N)①・②]</th>
<th>Hall B [4F Mizuho(S)①]</th>
</tr>
</thead>
</table>
| 8:00–9:00  | **The 3rd ASGO Morning Lecture [1]**  
*Chair:* Fumitaka Kikkawa  
*Speakers:* Takafumi Toita/Nobuhiro Takehisa  
*Co-Sponsor:* Taiho Pharmaceutical Co., Ltd. | **The 3rd ASGO Morning Lecture [2]**  
*Ovarian Clear Cell Carcinoma: Update*  
*Chair:* Akiko Okamoto  
*Speakers:* Kertaro Nakayama/David G. Huntsman  
*Co-Sponsor:* Daiichi Sankyo Co., Ltd. |
| 9:00–10:10 | **Educational Lecture on Ovarian Cancer**  
*Chairs:* Zeyl Cap, Mitsuaki Suzuki  
*Speakers:* Barbara Goff, Jeong-Won Lee, Kozi Matsunoto, Lin Sheow Lei, Vesna Kesic | **Workshop on Ovarian Cancer**  
*WS1-01—WS1-10*  
*Chairs:* Hee-Sup Ryu, Masanori Yasuda |
| 10:30–12:00| **Educational Lecture on Endometrial Cancer**  
*Chairs:* Jae-Wook Kim, Daisuke Aoki  
*Speakers:* Xiaojun Chen, Annie NY Cheung, Tsunehisa Kaku, Linus Chuang, Chi-Heum Cho | **Workshop on Endometrial Cancer**  
*WS2-01—WS2-10*  
*Chairs:* Hyou Poy Lee, Tsuyoshi Saito |
| 12:10–13:00| **The 3rd ASGO Luncheon Symposium [1]**  
*Treatment of Stage IB Cervical Cancer*  
*Chairs:* Seung-Chool Kim/Takashi Nakano  
*Co-Sponsor:* Yakult Honsha Co., Ltd. | **The 3rd ASGO Luncheon Symposium [2]**  
*Treatment of Uterine Sarcomas*  
*Chairs:* Soon-Do Cha/Nobuho Yaegashi  
*Co-Sponsor:* SANOFI |
| 13:10–15:40| **The 3rd ASGO Asia-Oceania Symposium**  
*Current Status on Cervical Cancer in Our Country*  
*Chairs:* Hextan Ngan  
*Co-Sponsor:* MSD K.K. | **Round Table Discussion for Serous Ovarian Cancer (SOC)**  
*Chairs:* Uma Devi, Hidetaka Katabuchi  
*Speakers:* Anil K. Sood, Chul Min Lee, Charles Zaloudek, Kaori Togashi, David M. Gershenson |
| 16:10–18:40| **The 3rd ASGO Evening Symposium [2]**  
*Molecular-Targeted Therapy for Gynecological Cancer*  
*Chairs:* Efren Domingo  
*Speakers:* Dong Hoon Suh, Yoshihiko Mikami, Hidemiichi Watarai, Ayse Ayan, John Chia Whay Kuang, Takako Eto  
*Co-Sponsor:* Chugai Pharmaceutical Co., Ltd. | **Round Table Discussion for High-Risk Endometrial Cancer**  
*Chairs:* Hextan Ngan, Tadashi Kimura  
*Co-Sponsor:* MSD K.K. |
<table>
<thead>
<tr>
<th>Time</th>
<th>Hall C 3F</th>
<th>Poster① 4F</th>
<th>Poster② 3F</th>
<th>Poster③ 3F</th>
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<td>8:00</td>
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<tr>
<td>19:00</td>
<td>Banquet</td>
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**Hall C**
3F Cosmos

7:45~10:10
JSGG-KGOG Joint Meeting

10:30~12:00
ASGO Council Meeting

12:10~13:00
The 3rd ASGO Luncheon Symposium [3]
Era of HPV DNA Testing for Cervical Cancer Screening
Chair: Noriyuki Inaba
Speakers: Sun Kuei Tay/Ryo Konno
Co-Sponsor: Roche Diagnostics, K.K.

13:10~14:30
Palliative Care for Women with Gynecological Cancer
Chair: Masaki Fujimura
Speakers: Lynette A. Denny
Akiko Sukeyawa
Akiko Tozawa
Co-Sponsor: Shionogi & Co., Ltd.
(Some parts in Japanese)

14:30~15:40
Management of Malignant Ascites in Gynecological Cancer
Chair: Satoru Takeda
Speakers: Shoji Nagano/Yasuhica Terao
Co-Sponsor: Asahi Kasei Medical Co., Ltd.
(in Japanese)

16:10~18:40
Role of da Vinci in Gynecological Cancer Surgery
Chairs: Chyi-Long Lee
Young-Tak Kim
Keichii Isaka
Speakers: Young-Tak Kim
Wu Chou (William) Lin
Peter C. Lim
Paul Magtibay

8:30~18:30
Exhibition/Poster Viewing
8:30~18:30
Poster Viewing
# Time Table [Day3] —December 15 (Sunday)—

## The 3rd Biennial Meeting of ASGO/The 55th Meeting of JSGO

The Westin Miyako Kyoto

<table>
<thead>
<tr>
<th>Hall A</th>
<th>Hall B</th>
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<tbody>
<tr>
<td>4F Mizuho(南) 1・2</td>
<td>4F Mizuho(南) 1</td>
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<tr>
<td><strong>8:00</strong></td>
<td><strong>8:00</strong></td>
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<tr>
<td>Chair: Jo Kitawaki</td>
<td>Chair: Kazuhiko Ino</td>
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<tr>
<td>Speakers: Hiroaki Kanari/Kung-Liahne Wang</td>
<td>Speakers: Takashi Onba/Elizabeth K. Jacinto</td>
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<tr>
<td>Chairs: Mohammad Farid Aziz</td>
<td>Chairs: Mohammad Farid Aziz</td>
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<tr>
<td>Yuki Hiramatsu</td>
<td>Yuki Hiramatsu</td>
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<td>Speakers: Michael A. Quinn</td>
<td>Speakers: Jatupol Srisomboon</td>
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<tr>
<td>Jae-Yeon Kim</td>
<td>Dae-Yeon Kim</td>
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<td>Chi-An Chen</td>
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<td>Chunling Chen</td>
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<td>Chairs: Shahila Tayib</td>
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<tr>
<td>Hiroshi Kobayashi</td>
<td>Hiroshi Kobayashi</td>
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<tr>
<td>Speakers: Suk-Joon Chang</td>
<td>Speakers: Suresh Kumagai</td>
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<td>Kazuyoshi Kato</td>
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<td>Laila Nuranna</td>
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<td>Robotic Surgery for Cervical Cancer</td>
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<td>Jae-Kwan Lee</td>
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<td>14:00~15:00 Closing Ceremony</td>
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<tr>
<td>8:00−15:00</td>
<td>The 2nd Annual Congress of Japanese Society of Gynecologic Palliative Medicine</td>
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<tr>
<td>8:00−8:30</td>
<td>Exhibition/Poster Viewing</td>
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<tr>
<td>9:00−11:00</td>
<td>Workshop on Cervical Cancer 1</td>
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<tr>
<td>10:10−12:00</td>
<td>The 3rd ASGO Luncheon Symposium</td>
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<tr>
<td>10:10−12:00</td>
<td>How to achieve function-preservation and radicality in gynecological cancer surgery</td>
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<tr>
<td>10:10−12:00</td>
<td>Chair: Yasuhiro Udagawa</td>
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<tr>
<td>10:10−12:00</td>
<td>Speakers: Kiyoshi Fujiiwa/Fumitoshi Terauchi</td>
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<td>Co-Sponsor: CSL Behring K.K.</td>
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<td>12:00−12:30</td>
<td>Workshop on Cervical Cancer 2</td>
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<tr>
<td>12:00−12:30</td>
<td>WS7-01−WS7-10</td>
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<tr>
<td>12:00−12:30</td>
<td>Chairs: Atsumi Kojima, Takayuki Enomoto</td>
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<tr>
<td>13:00−13:30</td>
<td>The 3rd Biennial Meeting of Asian Society of Gynecologic Oncology</td>
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<td>13:00−13:30</td>
<td>The 55th Meeting of Japan Society of Gynecologic Oncology</td>
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<td>14:00−14:30</td>
<td>Workshop on Translational Research 2</td>
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<td>14:00−14:30</td>
<td>WS8-01−WS8-10</td>
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<td>14:00−14:30</td>
<td>Chairs: Takuma Hayashi, Masaki Mandal</td>
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<td>15:00−15:00</td>
<td>Poster Removal</td>
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<td>15:00−15:00</td>
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<tr>
<td>15:00−16:00</td>
<td>The 2nd Annual Congress of Japanese Society of Gynecologic Palliative Medicine</td>
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</table>
Access from Major Airports to Kyoto

**Westin Miyako Hotel Kyoto (Venue)**

- **By Air**
  - Train
- **By Air**
  - Bus or Taxi

**HOTELS in KYOTO**
- Karasuma Gion St.
- SUBWAY TOZAI LINE
  - FARE: JPY 250
  - TIME: 7 min.
- SUBWAY KARASUMA LINE
  - TIME: 6 min.
- Hotel Shuttle Bus
  - FARE: JPY 250
  - TIME: 85 min.
- TAXI
  - FARE: JPY 2,500-3,000
  - TIME: 20 min.

**Kyoto**
- JR "NOZOMI"
  - FARE: JPY 13,520
  - TIME: 140 min.
  - FREQUENCY: Every 15-30 min.
- JR "NARITA EXPRESS"
  - FARE: JPY 2,940
  - TIME: 60 min.
  - FREQUENCY: Every 30-60 min.
- LIMOUSINE BUS
  - FARE: JPY 1,280
  - TIME: 55 min.

**Osaka International Airport (KIX)**
- JR "HARUKA"
  - FARE: JPY 3,490
  - TIME: 70 min.
  - FREQUENCY: Every 30-60 min.

**Osaka International Airport (Itami)**
- DOMESTIC FLIGHTS
  - FLYING TIME: 70 min.
  - FREQUENCY: 4 FLIGHTS A DAY

※ Please note that there are 2 airports in Osaka area, Kansai Int’l Airport (KIX) and Osaka Int’l Airport (ITAMI, for domestic flights).

(As of August, 2013)
Map of Kyoto

By Train
From Kyoto Station - Approx. 15 min by subway (Karasuma Line/Tozai Line); Get off at Keage Station on the subway Tozai Line. The hotel is a short hop from the station.

Hotel Shuttle Bus
A complimentary courtesy shuttle bus regularly runs between Kyoto Station HACHIOJI Exit and the hotel. (Approx. 25 min) Please refer to the hotel website for details.
<table>
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<th>Program</th>
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<td>Day 1</td>
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<td>Day 3</td>
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<td>Poster</td>
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Program

The 3rd Biennial Meeting of ASGO
The 55th Meeting of JSGO

December 13 2013 (Friday)  Day 1

**Hall A+B**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
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<tr>
<td>8:00~8:30</td>
<td>The 55th JSGO Grant Seminar</td>
<td>Hall B (Mizuho)</td>
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<td>Chairperson: Masahide Ohmichi (Osaka Medical College, Japan)</td>
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|            | Comprehensive analysis of immune status in ovarian cancer patients: Toward development of novel chemo-immunotherapy with PD-1/PD-L1 signal blocking  
Junzo Hamanishi (Department of Gynecology and Obstetrics, Kyoto University Graduate School of Medicine, Japan) |
|            | Overcoming platinum-resistance in ovarian cancer: Identification of novel therapeutic targets using genome-scaled siRNA screening  
Masafumi Toyoshima (Tohoku University School of Medicine, Japan) |

8:30~11:30  | The 55th JSGO Educational Seminar          | Hall A+B (Mizuho) |

*Some parts in Japanese, and simultaneous interpretation for English

Chairpersons: Noriaki Sakuragi (Hokkaido University, Japan)  
Junzo Kigawa (Tottori University, Japan)

Cancer genome: Toward tailored medicine  
Makoto Mark Taketo (Institute for Liberal Arts & Sciences, and Graduate School of Medicine, Kyoto University, Japan)

Cancer immunology: Development of novel therapy for cancer  
Norimitsu Kadawaki (Department of Hematology and Oncology, Graduate School of Medicine, Kyoto University, Japan)

How to build up clinical trial in cancer field  
Akira Shimizu (Institute for Advancement of Clinical and Translational Science, Kyoto University Hospital, Japan)

Announcement on bevacizumab in ovarian cancer treatment  
Toru Sugiyama (Iwate Medical University, Japan)
Teamwork of medical staff for cancer clinical trials
Miyuki Niimi (Saku Central Hospital, Japan)

Informed consent in clinical trials
Keiko Sato (The Japan Environment & Child Study, Graduate School of Medicine, the Institute for Frontier Medical Sciences, Kyoto University, Japan)

12:30〜13:30 The 3rd ASGO Opening: Luncheon Symposium:
Eradication of Cervical Cancer from Earth: Global Approach
Hall A + B (Mizuo)

Chairpersons
Barbara A. Goff (President, SGO, USA)
Shingo Fujii (Immediate Past President, IGCS, Japan)

Cancer prevention through HPV vaccination in developing countries
Lynette A. Denny (President, IGCS, University of Cape Town, South Africa)

Cancer screening via HPV testing and/or cytology
Murat Gultekin (Turkish Ministry of Health, Turkey)

Management of high grade cervical lesions and microinvasive cancer
Vesna Kesic (President, ESGO, Institute of Obstetrics and Gynecology Clinical Center of Serbia, Serbia)

Co-sponsor: Japan Vaccine Co., Ltd., QIAGEN K.K.

13:40〜15:30 The 3rd ASGO Opening Plenary: Welcome from Japan
Hall A + B (Mizuo)

Chairperson Soon-Beom Kang (Past President, ASGO, Korea)

Presidential Lecture: Asian Society of Gynecologic Oncology: Who we are, where we are going?
Toshiharu Kamura (President of ASGO/JSGO, Japan)

Chairperson Toru Sugiyama (Iwate Medical University, Japan)
Invited lecture: Mission of Federation of Asian Clinical Oncology (FACO)
Masahiko Nishiyama (Chairman, Board of Directors, Japan Society of Clinical Oncology, Japan)

Chairperson Joo-Hyun Nam (President-Elect, ASGO, Korea)
Educational lecture: Toward individualization of radiation therapy by physical approach
Masahiro Hiraoka (Department of Radiation Oncology and Image-applied Therapy, Kyoto University Graduate School of Medicine, Kyoto, Japan)
**Special lecture**: Genome-based tailoring for cancer therapy: A lesson from lung cancer  
**Hiroyuki Mano** (Department of Cellular Signaling, Graduate School of Medicine, The University of Tokyo, Japan)

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<th>Time</th>
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<tr>
<td>16:00 ~ 18:30</td>
<td>The 3rd ASGO Evening Symposium [1]: Treatment of Advanced/Recurrent Ovarian Cancer: Future Perspective</td>
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<th>Chairpersons</th>
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<tr>
<td><strong>Sarikapan Wilailak</strong></td>
<td>Mahidol University, Thailand</td>
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<td><strong>Kazunori Ochiai</strong></td>
<td>Jikei University, Japan</td>
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</table>

Improving survival in women with ovarian cancer: Future directions  
**David M. Gershenson** (University of Texas MD Anderson Cancer Center, USA)

Best combination of drugs for first/second-line chemotherapy  
**Seiji Isonishi** (Jikei University, Japan)

Neoadjuvant chemotherapy in advanced ovarian cancer  
**Keiichi Fujiwara** (Department of Gynecologic Oncology, Saitama Medical University International Medical Center, Japan)

How to select and perform surgery for recurrent ovarian cancer?  
**Sang-Yoon Park** (National Cancer Center, Korea)

Chemotherapy and best supportive care for recurrent patients  
**Chih-Long Chang** (Mackay Memorial Hospital, Taiwan)

Roadmap for tailored medicine in ovarian cancer treatment  
**David G. Huntsman** (Department of Pathology, Laboratory Medicine and Obstetrics and Gynecology, The University of British Columbia, Canada)

Co-sponsor: Bristol-Myers Squibb, Janssen Pharmaceutical K.K.
The 3rd Biennial Meeting of ASGO
The 55th Meeting of JSGO

December 14 2013 (Saturday)  Day 2

Hall A

7:45～8:30  The 3rd ASGO Morning Lecture [1]:
Treatment of Advanced Cervical Cancer: Update  Hall A (Mizuho)

Chairperson  Fumitaka Kikkawa (Nagoya University, Japan)

Concurrent chemoradiotherapy (CCRT) for locally advanced cervical cancer:
What is next?
Takafumi Toita (University of the Ryukus, Japan)

Chemotherapy for cervical cancer: Neoadjuvant and adjuvant setting
Nobuhiro Takeshima (Department Gynecology, Cancer Institute Hospital, Japan)

Co-sponsor: Taiho Pharmaceutical Co., Ltd.

8:40～10:10  Educational Lecture on Ovarian Cancer  Hall A (Mizuho)

Chairpersons  Zeyi Cao  (Tsinghua University, China)
              Mitsuaki Suzuki (Jichi Medical School, Japan)

Screening and early detection of ovarian cancer: Is it feasible?
Barbara Goff  (Director of Gynecologic Oncology, University of Washington, Seattle Cancer
            Care Alliance Seattle, USA)

Fertility-sparing treatment for early ovarian cancer
Jeong-Won Lee  (Department of Obstetrics & Gynecology, Samsung Medical Center,
              Sungkyunkwan University School of Medicine, Korea)

Treatment of platinum-resistant ovarian cancer
Koji Matsumoto  (Hyogo Cancer Center, Japan)

Updates on the management of advanced metastatic ovarian cancer
Lim Sheow Lei  (Medical Oncologist, KK Women’s and Children’s Hospital, Singapore)

Psychological support for patients with ovarian cancer
Vesna Kesic  (Department of Obstetrics and Gynecology Clinical Center of Serbia, Serbia)
10:30～12:00  Educational Lecture on Endometrial Cancer  Hall A (Mizuho)

Chairpersons  Jae-Wook Kim  (Yonsei University College of Medicine/
Kwandong University College of Medicine, Korea)
Daisuke Aoki  (Keio University, Japan)

Role of metabolic syndrome in endometrial cancer and its precancerous diseases
Xiaojun Chen  (Department of Gynecology, Obstetrics and Gynecology Hospital of Fudan
University, China)

Pathology of endometrial cancer and its precursor
Annie NY Cheung  (Department of Pathology, The University of Hong Kong, Hong Kong)

Atypical polypoid adenomyoma: Precursor of cancer?
Tsunehisa Kaku  (Department of Health Sciences, Graduate School of Medical Sciences
Kyushu University, Japan)

Treatment of high-intermediate risk endometrial cancer patients
Linus Chuang  (Icahn School of Medicine at Mount Sinai, USA)

Standard treatment of uterine carcinosarcoma (update)
Chi-Heum Cho  (Dept of Obstetrics & Gynecology Keimyung University, School of
Medicine, Korea)

12:10～13:00  The 3rd ASGO Luncheon Symposium [1]:
Treatment of Stage IIB Cervical Cancer  Hall A (Mizuho)

Chairpersons  Seung-Cheol Kim  (Ewha Womens University, Korea)
Takashi Nakano  (Gunma University, Japan)

Concurrent chemoradiotherapy (CCRT) for Stage IIB disease: Where are we now?
Kailash Narayan  (Peter MacCallum Cancer Centre, Australia)

Role of radical surgery in stage IIB disease—Treatment of Stage IIB disease—
Mikio Mikami  (Tokai University, School of Medicine, Department of Obstetrics and
Gynecology, Japan)

Co-sponsor: Yakult Honsha Co., Ltd.

13:10～15:40  The 3rd ASGO Asia–Oceania Symposium:
Current Status on Cervical Cancer in Our Country  Hall A (Mizuho)

Chairpersons  Hextan Ngan  (University of Hong Kong, Hong Kong)
Tadashi Kimura  (Osaka University, Japan)

Preventing cervical cancer in Australia: Still a little way to go
Michael A. Quinn  (Department of Obstetrics and Gynaecology, University of Melbourne,
Australia)
Overview on cervical cancer control and prevention in Asian countries
Hextan YS Ngan (Department of Obstetrics & Gynaecology, University of Hong Kong, Queen Mary Hospital, Hong Kong)

How can we overcome adverse reactions in HPV vaccination in Japan?
Etsuko Miyagi (Yokohama City University Hospital, Japan)

Cervical cancer control in India: Strategy in urban vs rural areas
Neerja Bhatla (Department of Obstetrics & Gynaecology, All India Institute of Medical Sciences New Delhi, India)

Current status of cervical cancer control in Thailand: Which screening method is best?
Wisit Suparakarapongkul (Thai Gynecologic Cancer Society, Thailand)

Cervical cancer control in multinational society: Challenge in Singapore
Sun Kuie Tay (Department of Obstetrics & Gynaecology, Singapore General Hospital, Singapore)

The decreasing trend in cervical cancer in Taiwan: What is next?
Choyng–Huey Lai (Department of Obstetrics and Gynecology, Chang Gung Memorial Hospital, Chang Gung University, Taiwan)

Co-sponsor: MSD K.K.

16:10～18:40 The 3rd ASGO Evening Symposium [2]:
Molecular–Targeted Therapy for Gynecological Cancer is Coming Soon
Hall A (Mizuho)

Chairpersons
Nicoletta Colombo (European Institute of Oncology, Italy)
Satoru Sagae (JR Sapporo Hospital, Japan)

Molecular–targeted therapy in gynecologic oncology: Overview
Nicoletta Colombo (Division of Medical Gynecologic Oncology, European Institute of Oncology, Italy)

Anti–angiogenesis therapy for ovarian cancer: Moving beyond VEGF
Anil K. Sood (M.D. Anderson Cancer Center, USA)

Perspective on molecular targeted therapy for endometrial cancer
Katsutoshi Oda (Department of Obstetrics and Gynecology, Faculty of Medicine, The University of Tokyo, Japan)

Is molecular–targeted therapy effective for uterine sarcomas?
Chi–Mu Chuang (Department of Medicine, School of Medicine, National Yang Ming University, Taiwan)

Selection of drugs against ovarian cancer based on gene expression profile
Noriomi Matsumura (Department of Gynecology and Obstetrics, Kyoto University Graduate School of Medicine, Japan)
Development of novel therapy for gynecological cancer
Jae–Hoon Kim (Department of Obstetrics and Gynecology, Gangnam Severance Hospital, Yonsei University College of Medicine, Korea)

Co-sponsor: Chugai Pharmaceutical Co., Ltd.

Hall B

7:45~8:30 The 3rd ASGO Morning Lecture [2]:
Ovarian Clear Cell Carcinoma: Update Hall B (Mizuho)

Chairperson Aikou Okamoto (Jikei University, Japan)

Clinical and molecular features of ovarian clear cell carcinoma
Kentaro Nakayama (Dept of Ob and Gyn, Shimane University School of Medicine, Japan)

Molecular genetics of ovarian clear cell carcinoma
David G. Huntsman (Department of Pathology, Laboratory Medicine and Obstetrics and Gynecology, The University of British Columbia, Canada)

Co-sponsor: Daiichi Sankyo Co., Ltd.

8:40~10:10 Workshop on Ovarian Cancer Hall B (Mizuho)

Chairpersons

Hee–Sug Ryu (Ajou University School of Medicine, Korea)
Masanori Yasuda (Saitama Medical University International Medical Center, Japan)

WS1–01 Active genetic counseling with immunohistochemistry can elevate detection rate of BRCA mutation among ovarian carcinoma patients
Min Kyo Kim (Department of Obstetrics and Gynecology, Samsung Changwon Hospital, Sungkyunkwan University of Medicine, Korea)

WS1–02 Evaluation of Risk of Malignancy Index as a triage tool for ovarian cancer
Gregorius Tanamas (Faculty of Medicine University of Indonesia, Indonesia)

WS1–03 Comparison of CA-125, ultrasound, menopausal status and Risk of Malignancy Index (RMI) in pre-operative diagnosis of ovarian tumors
Arun Muthuvel Veluswamy (Sri Ramachandra University, India)

WS1–04 The management of peritoneal surface malignancies at the American University of Beirut Medical Center: Initial experience
Muhieddine AF Seoud (American University of Beirut Medical Center, Dept Ob–Gyn, Lebanon)

WS1–05 Disseminated endometroid adenocarcinoma of ovary in a 14 year old girl: A case report
Himali, P Ihalagama (National Cancer Institute, Sri Lanka)
WS1–06 Additional intraperitoneal cisplatin/etoposide to first–line chemotherapy in advanced epithelial ovarian cancer: Interim analysis of a randomized phase II study
   Rong Jiang (Fudan University Cancer Hospital, China)

WS1–07 Pazopanib maintenance therapy in East Asian (EA) women with advanced epithelial ovarian cancer (AEOC): Results of two clinical trials
   Jae–Weon Kim (Seoul National University, Korea)

WS1–08 Clinicopathologic characteristics in patients with synchronous primary endometrial and ovarian cancers: A review of 43 cases
   Yuantao Liu (The Obstetrics & Gynecology Hospital of Fudan University, China)

WS1–09 Comparison of survival outcome between clear cell and non–clear cell types of epithelial ovarian cancer in stage IA and IB
   Yu–Jin Koo (Cheil General Hospital and Women’s Healthcare Center, Kwandong University College of Medicine, Korea)

WS1–10 Primary treatment and prognostic factors of carcinosarcoma of ovary, fallopian tube, and peritoneum: A Taiwanese Gynecologic Oncology Group study
   Chien–Hsing Lu (Department of Obstetrics and Gynecology, Taichung Veterans General Hospital, Taiwan)

10:30～12:00 Workshop on Endometrial Cancer Hall B (Mizuho)

Chairpersons
   Hyo Pyo Lee (Soon Chun Hyang University Hospital, Korea)
   Tsuyoshi Saito (Sapporo Medical University, Japan)

WS2–01 Diagnostic value of the conventional and liquid–based endometrial cytology in endometrial cancer
   Yuko Sugiyama (Departments of Gynecology, Cancer Institute Hospital, Japan)

WS2–02 Significance of endometrial cells in cervical cytology
   Eun Jeong Yu (Seoul National University, College of Medicine, Department of Obstetrics and Gynecology, Korea)

WS2–03 Usefulness of transcervical tumor resection in diagnosing myometrial invasion for young patients with endometrial cancer who received fertility–preserving progesterone therapy
   Nobuyuki Susumu (School of Medicine, Keio University, Japan)

WS2–04 Endometrial cancer risk of recurrence and postoperative histopathological findings
   Jasmine Iskandar (Faculty of Medicine University of Indonesia, Indonesia)

WS2–05 Feasibility and safety of laparoscopic surgery for obese Korean women with endometrial cancer: Long–term results at a single institution
   Min–Hyun Baek (University of Ulsan College of Medicine, Asan Medical Center, Korea)
WS2–06 Analysis of prognostic parameter in endometrial cancer: Obesity as a prognostic indicator in endometrial cancer
   Ranka Kanda (Department of Obstetrics and Gynecology, Teikyo University School of Medicine, Japan)

WS2–07 Pure uterine papillary serous cancer: Evaluation of survival and managements: A Taiwanese Gynecologic Oncology Group (TGOG) study
   Chia–Yen Huang (Cathay General Hospital, Taiwan)

WS2–08 Long term survival analysis of clear cell type endometrial cancer: A retrospective multi-center study by Taiwanese Gynecologic Oncology Group (TGOG)
   Keng–fu Hsu (Department of Obstetrics and Gynecology, National Cheng Kung University Hospital, College of Medicine, National Cheng Kung University, Taiwan)

WS2–09 Raloxifene hydrochloride improves health care problems of patients who underwent surgeries for endometrial cancer: A multicenter clinical trial
   Koji Nakamura (Department of Obstetrics and Gynecology, Osaka University Graduate School of Medicine, Japan)

WS2–10 Efficacy of methotrexate chemoprophylaxis in preventing postmolar gestational trophoblastic disease among patients with high-risk hydatidiform mole: A randomized controlled trial
   Jimmy A. Billod (Department of Obstetrics and Gynecology, University of the Philippines College of Medicine, Philippine General Hospital, Philippines)

12:10–13:00 The 3rd ASGO Luncheon Symposium [2]: Diagnosis and Treatment of Uterine Sarcomas Hall B (Mizuho)

   Chairpersons Soon–Do Cha (Keimyung University Dongsan Medical Center, Korea)

   Nobuo Yaegashi (Tohoku University, Japan)

   An update on the pathology of uterine sarcomas
   Charles Zaloudek (University of California, USA)

   Clinical diagnosis and treatment for uterine sarcomas
   Yoshio Yoshida (Department of Obstetrics & Gynecology, Fukui University, Japan)

   Co-sponsor: SANOFI

13:10–15:40 Round Table Discussion for Serous Ovarian Cancer (SOC) Hall B (Mizuho)

   Chairpersons Uma Devi (Kidwai Memorial Institute of Oncology, India)

   Hidetaka Katabuchi (Kumamoto University, Japan)

   Tubal origin of high-grade serous carcinoma: Do you believe?
   Steven G. Silverberg (University of Maryland, USA)
What have we learned from The Cancer Genome Atlas
Anil K. Sood (M.D. Anderson Cancer Center, USA)

Molecular mechanism for peritoneal dissemination of serous ovarian cancer
Chul Min Lee (Department of Obstetrics and Gynecology, Sanggye Paik Hospital, Korea)

Pathology of borderline serous tumors and low grade serous ovarian cancer
Charles Zaloudek (University of California, USA)

Imaging diagnosis of low-grade SOC and serous borderline tumor
Kaori Togashi (Diagnostic Imaging and Nuclear Medicine, Department of Radiology Kyoto University, Graduate School of Medicine, Japan)

Contemporary management of low-grade serous ovarian cancer
David M. Gershenson (University of Texas MD Anderson Cancer Center, USA)

<table>
<thead>
<tr>
<th>16:10 ~ 18:40</th>
<th>Round Table Discussion for High-Risk Endometrial Cancer</th>
<th>Hall B (Mizuho)</th>
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<tbody>
<tr>
<td><strong>Chairpersons</strong></td>
<td>Efren Domingo (University of the Philippines, Philippines)</td>
<td>Hideharu Kanzaki (Kansai Medical University, Japan)</td>
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Imaging of myometrial invasion of endometrial cancer
Dong Hoon Suh (Seoul National University College of Medicine, Korea)

“MELF pattern” of myoinvasion of low-grade endometrial adenocarcinoma
Yoshiki Mikami (Department of Diagnostic Pathology, Kyoto University Hospital, Japan)

How to manage endometrial cancer with deep myometrial invasion?
Hidemichi Watari (Department of Obstetrics and Gynecology, Hokkaido University Graduate School of Medicine, Japan)

Uterine serous papillary carcinoma: Pathology and molecular aspects
Ayse Ayhan (Seirei Mikatahara Hospital, Japan)

Clinical management of uterine serous papillary carcinoma
John Chia Whay Kuang (Medical Oncologist, The National Cancer Center, Singapore)

Treatment of Stage IVB endometrial cancer: A retrospective multi-institutional study of 426 patients in Japan
Takako Eto (Gynecology Service, National Kyushu Cancer Center, Japan)

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<tr>
<th>7:45 ~ 10:10</th>
<th>JGOG-KGOG Joint Meeting</th>
<th>Hall C (Cosmos)</th>
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</thead>
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※See Page 64
12:10〜13:00  The 3rd ASGO Luncheon Symposium [3]: Era of HPV DNA Testing for Cervical Cancer Screening

The importance of HPV-16/18 genotyping in ASCUS and cervical cancer screening
Sun Kuie Tay (Department of Obstetrics & Gynaecology, Singapore General Hospital, Singapore)

The role of HPV tests in cervical cancer screening in Japan and Asia
Ryo Konno (Department of Obstetrics and Gynecology, Jichi Medical University Saitama Medical Center, Japan)

Chairperson  Noriyuki Inaba (Dokkyo University, Japan)

Co-sponsor: Roche Diagnostics, K.K.

13:10〜14:30  Palliative Care for Women with Gynecological Cancer

Pain management in women with advanced cervical cancer
Lynette A. Denny (University of Cape Town, South Africa)

Assessment of quality of life in palliative care for women with gynecologic cancer
Akiko Sukegawa (Department of Obstetrics & Gynecology–Women’s Health, Yokohama City University Hospital, Japan)

Investigation of the prevalence of neuropathic pain in gynecologic cancer patients and efficacy and safety of oxycodone for pain management (INGYCO study) in Japan
Akiko Tozawa (Department of Obstetrics and Gynecology, St Marianna University School of Medicine, Japan)

Chairperson  Masaki Fujimura (Tokyo Medical University, Japan)

Co-sponsor: Shionogi & Co., Ltd.

14:30〜15:40  Management of Malignant Ascites in Gynecological Cancer

Intraperitoneal chemotherapy in epithelial ovarian cancer
Shoji Nagao (Department of Gynecologic Oncology, Hyogo Cancer Center, Japan)

Chairperson  Satoru Takeda (Juntendo University, Japan)

* in Japanese

* Some parts in Japanese
Efficacy and safety of CART (cell-free and concentrated ascites reinfusion therapy) in gynecological cancer patients

Yasuhiro Terao (Department of Obstetrics and Gynecology, Juntendo University Faculty of Medicine, Japan)

Co-sponsor: Asahi Kasei Medical Co., Ltd.

<table>
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<tr>
<th>Time</th>
<th>Session Title</th>
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<tbody>
<tr>
<td>16:10〜18:40</td>
<td>Role of da Vinci in Gynecological Cancer Surgery</td>
<td>Hall C (Cosmos)</td>
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</tbody>
</table>

**Chairpersons**

Chyi-Long Lee (Chang Gung Memorial Hospital, Taiwan)

Young-Tak Kim (University of Ulsan, Asan Medical Center, Korea)

Keiichi Isaka (Tokyo Medical University, Japan)

**Introduction**

Young-Tak Kim (University of Ulsan, Asan Medical Center, Korea)

**Clinical evidence and application on robotic gynecologic oncology**

Wu-Chou (William) Lin (Department of O. & G., China Medical University Hospital, Taiwan)

**Port placement consideration, patient positioning, various docking technique, and use of the 3rd arm for gynecologic surgeries**

Wu-Chou (William) Lin (Department of O. & G., China Medical University Hospital, Taiwan)

**Learning curve of robotic assisted hysterectomy: Unedited procedure walk through**

Peter C. Lim (Director of Gynecologic Oncology, Center of Hope & Renown Institute for Robotic and Minimally Invasive Surgery, USA)

**Role of robotics in cervical cancer treatment: Operative advices and know how**

Peter C. Lim (Director of Gynecologic Oncology, Center of Hope & Renown Institute for Robotic and Minimally Invasive Surgery, USA)

**Role of robotics in ovarian cancer treatment: Operative advice and know how**

Paul Magtibay (Mayo Clinic, USA)

**Robotic paraaortic lymph node dissection deep dive**

Peter C. Lim (Director of Gynecologic Oncology, Center of Hope & Renown Institute for Robotic and Minimally Invasive Surgery, USA)

**Avoidance and management of surgical complications**

Paul Magtibay (Mayo Clinic, USA)
## The 3rd Biennial Meeting of ASGO
The 55th Meeting of JSGO

### December 15 2013 (Sunday)  Day 3

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>7:45-8:30</td>
<td>The 3rd ASGO Morning Lecture [3]: Laparoscopic Surgery for Gynecological Cancer</td>
<td>Hall A (Mizuho)</td>
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<tr>
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<td>Chairperson: Jo Kitawaki (Kyoto Prefectual University, Japan)</td>
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<td>Role of laparoscopy in cervical cancer surgery</td>
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<td></td>
<td>Hiroyuki Kanao (Kurashiki Medical Center, Japan)</td>
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<td>Laparoscopic surgery for endometrial cancer</td>
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<td>Kung-Liahng Wang (Dept. of Obs. &amp; Gyn., Mackay Memorial Hospital, Taiwan)</td>
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<td>Co-sponsor: Johnson &amp; Johnson K.K.</td>
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<tr>
<td>8:40-10:10</td>
<td>Educational Lecture on Gynecologic Cancer Surgery [1]</td>
<td>Hall A (Mizuho)</td>
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<td>Chairpersons: Mohamad Farid Aziz (University of Indonesia, Indonesia)</td>
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<td>Yuji Hiramatsu (Okayama University, Japan)</td>
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<td>How to be less radical in early stage cervical cancer</td>
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<td>Michael A. Quinn (Department of Obstetrics and Gynecology, University of Melbourne,</td>
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<td>Radical hysterectomy for cervical cancer in Thailand</td>
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<td>Jatupol Srisomboon (OB &amp; GYN Department, Faculty of Medicine, Chiang Mai University,</td>
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<td>Nerve-sparing radical hysterectomy in the treatment of early cervical cancer</td>
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<td>Dae-Yeon Kim (Asan Medical Center, Korea)</td>
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<td>Radical trachelectomy for early stage cervical cancer</td>
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<td>Chi-An Chen (Department of Obstetrics and Gynecology, National Taiwan University</td>
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<td>Medical School and Hospital, Taiwan)</td>
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<td>Surgery following neoadjuvant chemotherapy (NAC) for cervical cancer</td>
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<td>Chunling Chen (Beijing Royal Integrative Medicine Hospital, China)</td>
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<td>10:30～12:00</td>
<td>Educational Lecture on Gynecologic Cancer Surgery</td>
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<td>Chairpersons: Shahila Tayib (Hospital Taiping, Malaysia)</td>
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<td>Hiroshi Kobayashi (Nara Medical University, Japan)</td>
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<td>Cytoreductive surgery for advanced ovarian cancer</td>
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<td>Suk-Joon Chang (Gynecologic Cancer Center, Department of Obstetrics and Gynecology, Ajou University School of Medicine, Korea)</td>
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<td>Pelvic &amp; paraortic lymphadenectomy in ovarian cancer</td>
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<td>Suresh Kumarasamy (Penang Medical College, Malaysia)</td>
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<td>Peritoneal stripping in ovarian cancer surgery</td>
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<td>Ting-Chang Chang (Dept. Ob/Gyn, Chang Gung Memorial Hospital Linkou Medical Center, Taiwan)</td>
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<td>Surgery after neoadjuvant chemotherapy in ovarian cancer</td>
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<td>Kazuyoshi Kato (Department of Gynecology, Cancer Institute Hospital, Japan)</td>
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<td>Surgery and chemotherapy in germ cell tumor of ovarian cancer</td>
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<td>Laila Nuranna (Division of Oncology Gynecology, Department of Obstetrics and Gynecology, Faculty of Medicine, Universitas Indonesia, Indonesia)</td>
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<td>12:10～13:00</td>
<td>The 3rd ASGO Luncheon Symposium</td>
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<td>Chairpersons: Young Tae Kim (Yonsei University, Korea)</td>
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<td>Keiichi Isaka (Tokyo Medical University, Japan)</td>
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<td>Robotic radical hysterectomy: Principle and practice</td>
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<td>Angelo Maggioni (Division of Gynaecology, European Institute of Oncology, Italy)</td>
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<td>Robotic radical hysterectomy: Training for beginners</td>
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<td>Masaki Mandai (Department of Obstetrics and Gynecology, Kinki University Faculty of Medicine, Japan)</td>
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<td>Co-sponsor: Adachi Co., Ltd., Intuitive Surgical, Inc.</td>
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<tr>
<td>13:10～14:40</td>
<td>Educational Lecture on Gynecologic Cancer Surgery</td>
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<td>Chairpersons: Yin Nin Chia (Kandang Kerbau Women’s and Children’s Hospital, Singapore)</td>
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<td>Tanri Shiozawa (Shinshu University, Japan)</td>
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<td>Abdominal radical trachelectomy from our ten years’ experience</td>
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<td>Takuma Fuji (Department of Obstetrics and Gynecology, Keio University, School of Medicine, Japan)</td>
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<td>Robotic radical trachelectomy in Korea</td>
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<td>Jae Kwan Lee (Korea University College of Medicine, Korea)</td>
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</table>
Sentinel node detection in radical trachelectomy
Hiroaki Kobayashi (Dept. of Gynecology and Obstetrics, Graduate School of Medical Sciences, Kyushu University, Japan)

Hall B

7:45~8:30 The 3rd ASGO Morning Lecture [4]: Gestational Trophoblastic Disease: Update Hall B (Mizuho)
Chairperson Kazuhiko Ino (Wakayama Medical University, Japan)
Clinical manifestations of early stage hydatidiform mole
Takashi Ohba (Department of Obstetrics and Gynecology, Faculty of Life Sciences, Kumamoto University, Japan)
Chemotherapy for high-risk trophoblastic neoplasm
Elizabeth K. Jacinto (Department of Obstetrics and Gynecology, University of the Philippines, Philippines)
Co-sponsor: Nippon Kayaku Co., Ltd., Siemens Japan K.K.

8:40~10:10 Workshop on Gynecological Cancer Surgery 1 Hall B (Mizuho)
Chairpersons Chyi-Long Lee (Chang Gung Memorial Hospital, University, Taiwan)
Toru Hachisuga (University of Occupational and Environmental Health, Japan)
WS3-01 Key-Note Laparoscopic surgery for gynecological cancer: Overview
Chyi-Long Lee (Department of OB/GY, Chang Gung Memorial Hospital, University, Taiwan)
WS3-02 Laparoscopic surgery for early-stage uterine endometrial cancer
Teppei Higashi (University of Occupational and Environmental Health, Japan)
WS3-03 Laparoscopic sentinel lymph node (SLN) biopsy in endometrial cancer
Tomoatsu Jimi (Kitano Hospital the Tazuke Kofukai Medical Research Institute, Japan)
WS3-04 Lymphatic mapping and sentinel node biopsy in early stage cervical cancer
Hiromi Miyata (Tazuke Kofukai Foundation, Medical Research Institute, Kitano Hospital, Department of Obstetrics and Gynecology, Japan)
WS3-05 Surgical intervention for extreme obese patient of early stage endometrial cancer
Yasuhiro Shiki (Osaka Rosai Hospital, Japan)
WS3-06 Feasibility and safety of laparoscopic surgery for elderly women with endometrial cancer: Long-term results from a single institution
Min-Hyun Baek (Department of Obstetrics and Gynecology, University of Ulsan College of Medicine, Asan Medical Center, Korea)
WS3–07 Single port access surgical staging for endometrial cancer: Initial experience
Keun Ho Lee (Department of OB/GYN, The Catholic University of Korea, Korea)

WS3–08 The methodology of vault drainage after complicated single-port access laparoscopic assisted vaginal hysterectomy
Hyun-Jin Roh (Division of Gynecologic Oncology, Department of Obstetrics and Gynecology, University of Ulsan College of Medicine, Ulsan University Hospital, Korea)

WS3–09 Is laparo-endoscopic single-site surgery feasible compared to conventional laparoscopic surgery for adnexal tumor? A comparison of clinical and surgical outcomes
Eun Bee Noe (Department of Obstetrics and Gynecology, Institute of Women’s Medical Life Science, Yonsei University College of Medicine, Korea)

WS3–10 Application of sepraﬁlm post da-Vinci robotic staging of endometrial cancer
Yi Chen Chuang (Far Eastern Memorial Hospital, Taiwan)

10:30～12:00 Workshop on Gynecological Cancer Surgery 2 Hall B (Mizuho)

Chairpersons Xiaohua Wu (Fudan University Shanghai Cancer Center, China)
Yasuyuki Hirashima (Shizuoka Cancer Center, Japan)

WS4–01 Distribution of gynecologic oncology patients underwent surgery at Dr. CiptoMangunkusumo Hospital (2012) based on Indonesian Society of Gynecologic Oncology cancer registry
Dewita Nilasari (Faculty of Medicine University of Indonesia/Dr. Cipto Mangunkusumo Hospital, Indonesia)

WS4–02 Cost-effectiveness of para-aortic lymphadenectomy before chemoradiotherapy in locally advanced cervical cancer
Jung-Yun Lee (Seoul National University, Korea)

WS4–03 Lymphadenectomy in endometrial carcinoma: Are the renal veins too far?
Arunava Roy (Department of Gynaecological Oncology, Tata Medical Center, India)

WS4–04 The role of omentectomy and routine peritoneal biopsy as part of a comprehensive surgical staging in apparent early-stage ovarian cancer
Jung-Yun Lee (Seoul National University, Korea)

WS4–05 Extensive upper abdominal surgery for bulky stage IIIC and IV ovarian cancer: Is it just a “belief”? 
Rong Jiang (Fudan University Shanghai Cancer Center, China)
**WS4-06** Prognostic impact of diaphragmatic surgery in stage IIIB-IV epithelial ovarian cancer with peritoneal seeding  
Dong Hoon Suh (Seoul National University Bundang Hospital, Korea)

**WS4-07** Conservative treatment for chylous ascites after operations in gynecologic malignancies  
Yong-Soon Kwon (Ulsan University Hospital, University of Ulsan, Korea)

**WS4-08** Lymph vessel sparing lymph node dissection: Technique and clinical significance  
Masato Kita (Kobe City Medical Center General Hospital, Japan)

**WS4-09** Fertility-sparing surgery for pediatric/adolescent patients with botryoid rhabdomyosarcoma involving the uterine cervix  
Jin Li (Department of Gynecologic Oncology, Fudan University Shanghai Cancer Center, China)

**WS4-10** Abdominal radical trachelectomy (ART) for cervical malignancies: Surgical, oncological and fertility outcomes in 156 patients  
Jin Li (Fudan University Shanghai Cancer Center, China)

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### The 3rd ASGO Luncheon Symposium [5]: Laparoscopic Lymphadenectomy for Gynecological Cancer

**Hall B (Mizuho)**

**Chairpersons**  
Duk-Soo Bae (Samsung Medical Center, Korea)  
Kenichi Furuya (National Defence Medical College, Japan)  
Yoshito Terai (Department of Obstetrics and Gynecology, Osaka Medical College, Japan)

Pelvic lymphadenectomy for endometrial cancer  
Laparoscopic paraaortic lymphadenectomy  
Hiroshi Funamoto (Department of Obstetrics and Gynecology, Toyama Prefectural Central Hospital, Japan)

Co-sponsor: Kaken Pharmaceutical Co., Ltd.

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### Workshop on Translational Research 1

**Hall B (Mizuho)**

**Chairpersons**  
Hung-Cheng Lai (Shuang Ho Hospital, Taipei University, Taiwan)  
Yoshi Kudo (Hiroshima University, Japan)

**WS5-01** Soluble folate receptor alpha as a biomarker for epithelial ovarian cancer  
Akira Kurosaki (Saitama Medical University International Medical Center, Japan)

**WS5-02** The role of copper transporter for platinum-resistant mechanism in ovarian cancer  
Tetsuji Kurokawa (Department Obstetrics and Gynecology, University of Fukui, Japan)
WS5–03  Ovarian cancer stem-like cells show induced translineage–differentiation capacity and are suppressed by alkaline phosphatase inhibitor
    Hung–Cheng Lai (Department of Obstetrics and Gynecology, Tri-Service General Hospital, National Defense Medical Center, Taiwan)

WS5–04  Pivotal roles of CX3CL1–CX3CR1 axis on host cells in ovarian cancer progression
    Yuko Tanizaki (Department of Obstetrics and Gynecology, Wakayama Medical University, Japan)

WS5–05  A novel IKKβ inhibitor, IMD–0354, suppresses ovarian cancer dissemination by inhibiting VEGF production: A potential for an anti-angiogenic therapy
    Yasuto Kinose (Department of Obstetrics and Gynecology, Osaka University, Faculty of Medicine, Japan)

WS5–06  Fatty acid synthase expression associated with NAC1 is a potential therapeutic target in ovarian clear cell carcinomas
    Masako Ishikawa (Shimane Medical University, Japan)

WS5–07  Clinicopathologic and biological analysis of PIK3CA mutation in ovarian clear cell carcinoma
    Hiroshi Katagiri (Shimane Medical University, Japan)

WS5–08  Expression of CK–7, CA–125 and HE4 in tissue–derived cancer cells from patients with epithelial ovarian carcinoma
    Shin–Wha Lee (University of Ulsan, Asan Medical Center, Korea)

WS5–09  Carcinogenesis of ovarian embryonal carcinoma in mature ovary tissue of reprogrammable animals
    Tomonari Hayama (Institute of Medical Science, The University of Tokyo, Japan)

WS5–10  Withdrawn

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**Hall C**

<table>
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<tr>
<th>8:40〜10:10</th>
<th>Workshop on Cervical Cancer 1</th>
<th>Hall C (Cosmos)</th>
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<tbody>
<tr>
<td><strong>Chairpersons</strong></td>
<td>Anggraeni Tricia Dewi (Cipto Mangunkusumo General Hospital, Indonesia)</td>
<td>Kimihiko Ito (Kansai Rosai Hospital, Japan)</td>
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WS6–01  Indonesian Society of Gynecologic Oncology cancer registration information system: Implementation, challenge, and future
    Tricia D Anggraeni (INASGO, Indonesia)
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<th>Session</th>
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<tbody>
<tr>
<td>WS6–02</td>
<td>Evaluation of abnormal cervical histopathology in tertiary hospital</td>
<td>Beemba Shakya (Paropakar Maternity and Women’s Hospital, Nepal)</td>
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<tr>
<td>WS6–03</td>
<td>The distribution of high-risk human papillomavirus genotype in high-grade cervical intraepithelial neoplasia of Korean women</td>
<td>Min–Hyun Baek (Department of Obstetrics and Gynecology, Ulsan University College of Medicine, Asan Medical Center, Korea)</td>
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<tr>
<td>WS6–04</td>
<td>Genotype distribution of human papillomavirus among Thai females in Bangkhayaeng Sub-district, Pathum Thani province, Thailand</td>
<td>Nuttavut Kantathavorn (Cervical Cancer Care Team, Chulabhorn Hospital, Thailand)</td>
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<tr>
<td>WS6–05</td>
<td>The high prevalence of high risk–HPV among negative visual inspection of acetic acid (VIA) of Indonesian women</td>
<td>Tofan W Utami (Department of Obstetrics and Gynecology, Cipto Mangunkusumo General Hospital, Indonesia)</td>
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<tr>
<td>WS6–06</td>
<td>The promise of visual inspection of acetic acid (VIA) as the standard of cervical cancer screening method in Indonesia</td>
<td>Tofan W Utami (Department of Obstetrics and Gynecology, Cipto Mangunkusumo General Hospital, Indonesia)</td>
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<tr>
<td>WS6–07</td>
<td>Effect of margin status on recurrence following conization in women with carcinoma in situ of cervix</td>
<td>Eun–Jeong Choi (Cheil General Hospital and Women’s Healthcare Center, Kwandong University College of Medicine, Korea)</td>
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<tr>
<td>WS6–08</td>
<td>Distribution of age, stage, and histopathology of cervical cancer: A retrospective study at Dr. Cipto Mangunkusumo Hospital, Jakarta, Indonesia, 2006–2010</td>
<td>Tricia D Anggraeni (Department Obstetrics and Gynecology Faculty of Medicine University of Indonesia, Indonesia)</td>
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<td>WS6–09</td>
<td>Increase of cervical cancer risk among young Japanese women: Analyses of Kanagawa cancer registry data 1985–2011</td>
<td>Yoko Motoki (Department of Obstetrics, Gynecology and Molecular Reproductive Science, Yokohama City University Graduate School of Medicine, Japan)</td>
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<tr>
<td>WS6–10</td>
<td>Estimation of the potential impact of HPV vaccination on cervical cancer cases and deaths in Japan irrespective of HPV type</td>
<td>Atsushi Hongo (Department of OB/GYN, Kagawa Prefectural Central Hospital, Japan)</td>
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<tr>
<td>Time</td>
<td>Workshop on Cervical Cancer 2</td>
<td>Hall C (Cosmos)</td>
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<td>10:30~12:00</td>
<td>Chairpersons</td>
<td>Atumi Kojima</td>
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<td>(Shikoku Cancer Center, Japan)</td>
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<td>Takayuki Enomoto</td>
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<td>(Niigata University, Japan)</td>
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<td>WS7-01</td>
<td>Recurrence–free survival stage IB1–IIA2 intermediate risk group (based on Kartu Delgado) cervical carcinoma after radical surgery and adjuvant radiotherapy</td>
<td>Andi Friadi</td>
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<td>WS7-02</td>
<td>Concurrent chemoradiotherapy for locally advanced uterine cervical cancer using Nedaplatin (KGROG0501): Final results</td>
<td>Yuzuru Niibe</td>
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<td>(Department of Radiology and Radiation Oncology, Kitasato University, Japan)</td>
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<td>WS7-03</td>
<td>In room CT–guided adaptive brachytherapy for cervical cancer at Gunma University</td>
<td>Tatsuya Ohno</td>
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<td>(Department of Radiation Oncology, Gunma University, Japan)</td>
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<td>WS7-04</td>
<td>Radical hysterectomy versus concurrent chemoradiotherapy (CCRT) for stage IIB squamous cell carcinoma of the uterine cervix</td>
<td>Atumi Kojima</td>
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<td>(Shikoku Cancer Center, Japan)</td>
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<td>WS7-05</td>
<td>Withdrawn</td>
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<tr>
<td>WS7-06</td>
<td>Prognosis of adenosquamous carcinoma compared to adenocarcinoma in uterine cervical cancer: A systematic review and meta–analysis of observational studies</td>
<td>Jung-Yun Lee</td>
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<td>(Seoul National University, Korea)</td>
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<td>WS7-07</td>
<td>A comparison of survival outcome of adenosquamous carcinoma and adenocarcinoma in cervical cancer after surgery in stage I, II</td>
<td>Min-Hyun Baek</td>
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<td>(University of Ulsan College of Medicine, Asan Medical Center, Korea)</td>
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<tr>
<td>WS7-08</td>
<td>Clinical evaluation of early (stage I–II) cervical adenocarcinoma and adenosquamous cell carcinoma treated by radical surgery</td>
<td>Masae Ikeda</td>
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<td>(Department of Obstetrics and Gynecology, Tokai University School of Medicine, Japan)</td>
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<tr>
<td>WS7-09</td>
<td>Primary surgery for early–stage small cell carcinoma of the uterine cervix?</td>
<td>Tze-Chien Chen</td>
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<td>(Department of Obstetrics and Gynecology, Mackay Memorial Hospital, Taiwan)</td>
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<td>WS7-10</td>
<td>Quality of life in patients with advanced cervical cancer in northern Nigeria</td>
<td>Marliyya, Sanusi Zayyan</td>
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<td>(Department of Obstetrics and Gynaecology, Ahmadu Bello University Teaching Hospital Zaria Nigeria, Nigeria)</td>
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<td>12:10~13:00</td>
<td><strong>The 3rd ASGO Luncheon Symposium [6]:</strong> How to achieve function-preservation and radicality in gynecological cancer surgery</td>
<td><strong>Hall C (Cosmos)</strong></td>
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<td><strong>Chairperson</strong> Yasuhiro Udagawa (Fujita Health University, Dokkyo Medical University, Japan)</td>
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<td>Kiyoshi Fujiiwara (Department of Gynecology, Hyogo Cancer Center, Japan)</td>
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<td>Fumitoshi Terauchi (Department of Obstetrics and Gynecology, Tokyo Medical University, Japan)</td>
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<td>Co-sponsor: CSL Behring K.K.</td>
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<td>13:10~14:40</td>
<td><strong>Workshop on Translational Research 2</strong></td>
<td><strong>Hall C (Cosmos)</strong></td>
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<td><strong>Chairpersons</strong> Takuma Hayashi (Shinshu University, Japan)</td>
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<td>Masaki Mandai (Kinki University, Japan)</td>
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<td>WS8-01</td>
<td>Combined DNA methylation analysis in HPV-infected cervical cells</td>
<td>Tae-Jin Kim (Cheil General Hospital and Women’s Healthcare Center, Kwandong University College of Medicine, Korea)</td>
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<tr>
<td>WS8-02</td>
<td>Identification of KLF17 as a novel epithelial to mesenchymal transition inducer via direct activation of TWIST1 in endometrioid endometrial cancer</td>
<td>Peixin Dong (Department of Women’s Health Educational System, Hokkaido University, Japan)</td>
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<td>WS8-03</td>
<td>Sirtuin1 (SIRT1) inhibitor suppresses tumor growth of endometrial carcinoma cell in nude mice</td>
<td>Ryoichi Asaka (Department of Obstetrics and Gynecology, Shinshu University School of Medicine, Japan)</td>
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<td>WS8-04</td>
<td>Lipocalin2 accelerates tumor growth and functions as a novel oncogene in endometrial carcinoma cell</td>
<td>Tsutomu Miyamoto (Department of Obstetrics and Gynecology, Shinshu University School of Medicine, Japan)</td>
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<td>WS8-05</td>
<td>Epithelial–mesenchymal–transition (EMT) in endometrial cancer</td>
<td>Yoshimichi Tanaka (Osaka Medical College, Japan)</td>
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<td>WS8-06</td>
<td>Tumor-derived G-CSF plays a central role in progression of cervical cancer displaying tumor related leukocytosis</td>
<td>Mahiru Kawano (Department of Obstetrics and Gynecology, Osaka University Graduate School of Medicine, Japan)</td>
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WS8–07  Triage of ASC–H and AGC using DNA methylation biomarkers: A Taiwanese Gynecologic Oncology Group (TGOG) study
    Cheng–Chang Chang (Department of Obstetrics and Gynecology, Tri–Service General Hospital, National Defense Medical Center, Taiwan)

WS8–08  Methylation of ZNF582 gene: A marker for triage of LSIL Pap smear: A Taiwanese Gynecologic Oncology Group study
    Hao Lin (Department Obstetrics and Gynecology, Kaohsiung Chang Gung Memorial Hospital and Chang Gung University College of Medicine, Taiwan)

WS8–09  Potential role of LMP2 as negative regulator defines new targets for uterine leiomyosarcoma therapy
    Takuma Hayashi (Dept. of Immunology and Infectious Disease, Shinshu University School of Medicine, Japan)

WS8–10  The comparison of expression of cyclin D1 and retinoblastoma mutant protein in hydatidiform mole and in normal placenta
    Yudi Mulyana Hidayat (Department of Obstetric and Gynecology, Hasan Sadikin Hospital, Faculty of Medicine, Padjadjaran University, Indonesia)
The 3rd Biennial Meeting of ASGO  
The 55th Meeting of JSGO

December 13 2013 (Friday)  Poster

<table>
<thead>
<tr>
<th>11:30～12:30</th>
<th>Poster 1: Vulvar and Vaginal Cancer/ Cervical Cancer: HPV</th>
<th>Poster ① (Mizuho)</th>
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<tbody>
<tr>
<td><strong>Chairpersons</strong></td>
<td>Kei Kawana (University of Tokyo, Japan)</td>
<td>Kazuyoshi Kato (Cancer Institute Hospital, Japan)</td>
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</tbody>
</table>

**P-001**  
Carcinoma of vulva: Local experience in last 2-years in Northern India Hospital  
Satish Jain  (Northern India Hospital, India)

**P-002**  
Primary malignant melanoma of the cervix: A case report  
Merlind M. Montinola-Morales  (Philippine General Hospital, Philippines)

**P-003**  
Malignant melanoma of the vulva  
Yulianty Arifuddin  (Department of Obstetric and Gynaecology, University Kebangsaan Malaysia Medical Centre, Malaysia)

**P-004**  
The clinicopathological features and treatment of the primary extramammary Paget’s disease of the vulva  
Hidetaka Nomura  (Department of Gynecology, Cancer Institute Hospital, Japan)

**P-005**  
Deep aggressive angiomyxoma  
Yulianty Arifuddin  (Department of Obstetric and Gynaecology, University Kebangsaan Malaysia Medical Centre, Malaysia)

**P-006**  
A case of primary neuroendocrine small cell cancer of the vagina  
Tomoko Kashiyama  (Department of OB/GYN, Shikaitoken Chuo Sogo Hospital, Japan)

**P-007**  
Lotus petal flap for plastic reconstruction after surgery for vulvar malignancy  
Ashok Kumar Padhy  (Department of Gynecology Oncology, Acharya Harihar Regional Cancer Centre, India)

**P-008**  
HPV genotypes and its prevalence in normal population: A cross sectional study in Jakarta, Indonesia  
Tofan W Utami  (Department of Obstetrics and Gynecology, Cipto Mangunkusumo General Hospital, Indonesia)
P-009 Human papillomavirus (HPV) prevalence and HPV type distribution in 968 healthy Korean women  
Kyeong A So (Department of Obstetrics and Gynecology, Korea University Guro Hospital, Korea)

P-010 Novel nano-scale revelations of oncogenic human papilloma virus surface ultrastructure in human cervical cancer  
Bor-Ching Sheu (Department of Obstetrics & Gynecology, College of Medicine and The Hospital, National Taiwan University, Taiwan)

P-011 Clinical benefits of HPV-16 and HPV-18 genotyping for women with ASC-US and LSIL cytology  
Hiroyuki Kurosu (Department of Obstetrics and Gynecology, Musashino Red Cross Hospital, Japan)

P-012 Factors related to the need to have a Pap test in unmarried university students in Korea  
Hae Won Kim (Seoul National University, Korea)

11:30〜12:30 Poster 2: Cervical Cancer: Screening, VIA, Cytology

Poster ① (Mizuho)

Chairpersons Masashi Takano (National Defense Medical College, Japan)  
Neerja Bhatla (All India Institute of Medical Sciences, India)

P-013 Can VIA be the alternative method of Pap smear in screening of cervical cancer in low resource settings?  
Sadikchya Singh Rana (Shree Birendra Hospital, Nepal)

P-014 Percentage of women screened before “See and Treat Program” in Jakarta  
Sarah Ika Nainggolan (INASGO, Indonesia)

P-015 Detection of premalignant condition of ca cervix at Central Women’s Hospital by VIA  
Aye Tint (O&G, Central Women’s Hospital, Myanmar)

P-016 Visual inspection with acetic acid in detection of high grade squamous intraepithelial lesion and cancer of cervix in community setting  
Thazin Nyunt (Central Women’s Hospital, Myanmar)

P-017 A “screen-and-vaccinate” combined strategy can improve participation in cervical cancer screening in India  
Neerja Bhatla (Department of Obstetrics and Gynaecology, All India Institute of Medical Sciences, India)
P-018  Spontaneous regression rate of cervical intraepithelial neoplasia I according to age and human papillomavirus infection
   Dong Hoon Suh  (Department of Obstetrics and Gynecology, Seoul National University Bundang Hospital, Korea)

P-019  Detection of CIN with self-obtained HPV test in women without Pap smear for 5 years and analysis of attributing factors
   Hung-Hsueh Chou  (Department of Obstetrics and Gynecology, Chang Gung Memorial Hospital and Chang Gung University College of Medicine, Taiwan)

P-020  Low selenium serum concentration and glutathione activity in cervical cancer patients
   Leri Septiani  (Department of Obstetric and Gynecology, Faculty of Medicine, Universitas Padjadjaran–Hasan Sadikin Hospital, Indonesia)

P-021  Effects of chronic boron exposure on cervical cytology and HPV prevalence
   Mehmet Korkmaz  (Department of Medical Biology, Celal Bayar University School of Medicine, Turkey)

P-022  Is the correlation between Papanicolaou smears and histopathology results affected by time to colposcopy?
   Vorachart Meevasana  (Gynaecologic Oncology Unit, Department of Obstetrics & Gynecology, Faculty of Medicine, Thammasat University, Rangsit Campus, Thailand)

P-023  Atypical squamous cells cannot exclude high grade squamous intraepithelial lesion and histologic evaluation for clinical significance
   Woo-Suk Han  (Obstetrics and Gynecology, University of Ulsan College of Medicine, Asan Medical Center, Korea)

P-024  Diagnostic utility of cervical cytology for adenocarcinoma in situ of the uterine cervix
   Hiroyuki Okimura  (Department of Obstetrics and Gynecology, Kyoto Prefectural University of Medicine, Graduate School of Medical Science, Japan)

P-025  Cost of cervical cancer diagnosis and treatment in the Philippines: Implications for providing universal health care coverage to low-income women
   Maria Julieta V Germar  (University of the Philippines, Philippine General Hospital, Philippines)
<table>
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<tr>
<th>Time</th>
<th>Poster 3: Cervical Cancer: Staging, Imaging, Lymph node metastasis</th>
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<tr>
<td>11:30</td>
<td>Chairpersons Haruo Kuroboshi (Kyoto Prefectural University of Medicine, Japan) Affi Angelia Ratnasari (University of Indonesia, Indonesia)</td>
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</table>
|       | **P-026** The comparison of clinical and surgical staging of cervical cancer: A retrospective study on patients at Cipto Mangunkusumo General Hospital  
Bram Pradipta (Obstetrics and Gynecology Department, Faculty of Medicine, Universitas Indonesia, Indonesia) |
|       | **P-027** A discussion of peritoneal cytology in patients with uterine cervical carcinoma  
Sanshiro Okamoto (Department of Gynecology, Cancer Institute Hospital, Japan) |
|       | **P-028** Postoperative outcomes of FIGO stage IB1 cervical cancer invisible on MRI  
Jin-Young Park (Samsung Medical Center, Sungkyunkwan University School of Medicine, Korea) |
|       | **P-029** Diagnostic impact of tumor diameter in preoperative MRI predicting lymph node metastasis and parametrial involvement in FIGO IB1 cervical carcinoma  
Norichika Ushioda (Department of Gynecologic Oncology, The Cancer Institute Hospital, Japan) |
|       | **P-030** Diagnostic accuracy of MR imaging and FDG PET for the detection of lymph node metastases of cervical cancer  
Terumi Tanigawa (The Cancer Institute Hospital, Department of Gynecological Oncology, Japan) |
|       | **P-031** The clinical value of FDG-PET/CT in adenocarcinoma of uterine cervix: A case series  
Dong Hoon Suh (Department of Obstetrics and Gynecology, Seoul National University Bundang Hospital, Korea) |
|       | **P-032** Nodal status of radical hysterectomy in early stage cervical cancer as prognostic factor  
Affi Angelia Ratnasari (INASGO, Indonesia) |
|       | **P-033** Positive rate of lymph node metastasis in 139 cases of gynecologic cancer in our department  
Tomoharu Okubo (Department of OB/GYN, Japanese Red Cross Kyoto Daichi Hospital, Japan) |
|       | **P-034** Lymph node metastasis in cervical cancer: Novel diagnostic criteria in multi-detector computed tomography  
Koji Yamanoi (Department of Gynecology and Obstetrics, Kyoto University Graduate School of Medicine, Japan) |
P-035  Maximum standardized lymph node uptake value could be an important predictor of recurrence and survival in patients with cervical cancer
   Tomoko Haruma (Department of Obstetrics and Gynecology, Okayama University Graduate School of Medicine, Dentistry and Pharmaceutical Sciences, Japan)

P-036  Sentinel lymph node biopsy in locally advanced cervical cancer after neoadjuvant intra-arterial chemotherapy
   Hiromi Miyata (Tazuke Kofukai Foundation, Medical Research Institute, Kitano Hospital, Japan)

P-037  The role of clinico–pathological and angiogenic factors endoglin and PECAM-1 as predictors for pelvic lymph node metastasis in cervical cancer
   Gatot Purwoto (Department of Obstetrics and Gynecology, Faculty of Medicine, University of Indonesia, Indonesia)

P-038  Synaptonemal complex protein 3 is a prognostic marker in cervical cancer
   Hanbyoul Cho (Department of Obstetrics and Gynecology, Gangnam Severance Hospital, Yonsei University College of Medicine, Korea)

11:30～12:30  Cervical Cancer: Conization, Surgery, Histology  Poster (Mizuho)

Chairpersons  Kaneyuki Kubushiro (Toho University, Ohashi Medical Center, Japan)
              Jitendra Paryar (B.P. Koirala Memorial Cancer Hospital, Nepal)

P-039  Treatment outcome after loop electrosurgical excision procedure for pre-malignant cervical lesions: Five year review in a tertiary care government hospital
   Maria Margarita M Montecillo (Section of Gynecologic Oncology, Philippine General Hospital, Philippines)

P-040  Effectiveness and safety of cryotherapy for treatment of cervical intraepithelial neoplasia
   Khin, May Thin (Central Women’s Hospital, Myanmar)

P-041  Prognostic factors of conization for high-grade cervical lesions, adenocarcinoma in situ, and microinvasive squamous cell carcinoma of the uterine cervix
   Tae Wook Kong (Gynecologic Cancer Center, Department of Obstetrics and Gynecology, Ajou University School of Medicine, Korea)

P-042  Recurrence of CIN3 in residual uterine cervix of aged women whose vagina is obliterated due to previous therapeutic conization
   Yumiko Satake (Department of Obstetrics and Gynecology, Otsu Red Cross Hospital, Japan)
| P−043 | Laparoscopy and ultrasound guided treatment for refractory uterine cervical stenosis after conization  
Satoko Sudo (Department of Obstetrics and Gynecology, Hokkaido University, Japan) |
| P−044 | A case of early uterine cervical cancer with pelvic lymph nodal recurrence 23 years after an initial treatment  
Mana Taki (Shiga Medical Center for Adults, Japan) |
| P−045 | Extrrafascial hysterectomy without preoperative conization is unacceptable in patients with adenocarcinoma in situ diagnosed by cervical punch biopsy/endocervical curettage  
Kidong Kim (Department of Obstetrics and Gynecology, Seoul National University Bundang Hospital, Korea) |
| P−046 | Cervical cancer in pregnancy and postnatal period managed at B.P. Koirala Memorial Cancer Hospital  
Jitendra Pariyar (B.P. Koirala Memorial Cancer Hospital, Nepal) |
| P−047 | Our surgical form and outcome of early invasive adenocarcinoma of the uterine cervix (FIGO 1A1)  
Hideaki Yahata (Department of Gynecology and Obstetrics, Kyushu University, Japan) |
| P−048 | Treatment strategies for locally advanced mucinous adenocarcinoma of the uterine cervix  
Shin−ichi Okame (Department of Gynecology, Shikoku Cancer Center, Japan) |
| P−049 | Clear cell carcinoma of the cervix: The KKH experience from 2000–2010  
Charissa Goh (KK Hospital, Singapore) |
| P−050 | Clear cell adenocarcinoma in the uterine cervix associated with malformation of the uterus  
Yasushi Kawano (Oita University, Japan) |
| P−051 | Collision tumors of the cervix: A report of three cases and review of literature  
Jimmy A. Billod (Department of Obstetrics and Gynecology, Section of Gynecologic Oncology, University of the Philippines−College of Medicine, Philippine General Hospital, Philippines) |
| P−052 | Results of surgical treatment of cervical cancer at Khmer–Soviet Friendship Hospital, Cambodia  
Chhit Maryan (Department of Gynecology, Khmer–Soviet Friendship Hospital, Cambodia) |
| P−053 | Gynecologic oncology service at Calmette Hospital, Cambodia  
Sanine Lay (Department of Gynecology, Calmette Hospital, Cambodia) |
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<th>Authors</th>
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| 11:30〜12:30 | Poster 5| Cervical Cancer: Surgery, NAC, Fertility, Nerve—sparing surgery      | Chairpersons: Kuniko Utsugi (Cancer Institute Hospital, Japan) Quenny Michelle Dyan A. Alas (Philippine General Hospital, Philippines) | P-054 Survival outcome of Hokkaido—method of nerve—sparing radical hysterectomy for cervical cancer:
|            |         |                                                                       | Tatsuya Kato (Department of Obstetrics and Gynecology, Hokkaido University, Japan) |                                                                                                  |
|            |         |                                                                       | P-055 Correlation between location of transposed ovary and function in cervical cancer patients who underwent radical hysterectomy:
|            |         |                                                                       | Aera Yoon (Samsung Medical Center, Sungkyunkwan University School of Medicine, Korea) |                                                                                                  |
|            |         |                                                                       | P-056 Comparison of laparoscopic versus abdominal radical hysterectomy for bulky (≥3 cm) FIGO stage IB and IIA cervical cancer:
|            |         |                                                                       | Tae Wook Kong (Gynecologic Cancer Center, Department of Obstetrics and Gynecology, Ajou University School of Medicine, Korea) |                                                                                                  |
|            |         |                                                                       | P-057 Learning curve analysis of laparoscopic radical hysterectomy for gynecologic oncologists:
|            |         |                                                                       | Tae Wook Kong (Gynecologic Cancer Center, Department of Obstetrics and Gynecology, Ajou University School of Medicine, Korea) |                                                                                                  |
|            |         |                                                                       | P-058 Urinary tract injury during laparoscopic hysterectomy of cervical cancer patients:
|            |         |                                                                       | A.R. Ko (Asan Medical Center, Korea)                                                                 |                                                                                                  |
|            |         |                                                                       | P-059 Laparoscopic ovarian subcutaneous transposition following laparoscopic radical hysterectomy: Our surgical technique and assessment of ovarian hormonal function:
|            |         |                                                                       | Yusuke Butsuhara (The Tazuke Kofukai Medical Research Institute, Kitano Hospital, Japan) |                                                                                                  |
|            |         |                                                                       | P-060 A case of young woman with vaginal carcinoma who underwent fertility sparing treatment with chemotherapy and conservative surgery:
|            |         |                                                                       | Yasushi Mabuchi (Department of Obstetrics and Gynecology, Wakayama Medical University, School of Medicine, Japan) |                                                                                                  |
|            |         |                                                                       | P-061 Leiomyosarcoma of the cervix in association with pregnancy: A case report:
|            |         |                                                                       | Quenny Michelle Dyan A. Alas (Philippine General Hospital, Department of Obstetrics and Gynecology, Section of Gynecologic Oncology, Philippines) |                                                                                                  |
P-062 Efficacy of neoadjuvant chemotherapy in patients with stage IB uterine cervical cancer
  Toshimitsu Tohya (Department of Obstetrics and Gynecology, Kumamoto Rosai Hospital, Japan)

P-063 Genomic profile may predict the efficacy of neo–adjuvant chemotherapy for cervical cancer patients
  Naoki Horikawa (Department of Gynecology and Obstetrics, Kyoto University Graduate School of Medicine, Japan)

P-064 Neoadjuvant intraarterial chemotherapy using an original four–lumen double–balloon catheter for locally advanced uterine cervical cancer
  Tomohito Tanaka (Department of Obstetrics and Gynecology, Osaka Medical College, Japan)

P-065 A comparative study on neoadjuvant chemotherapy for cervical cancer at high risk of relapse: A retrospective single–center pilot study
  Atsuko Sakakibara (Department of Epidemiology and Preventive Medicine, The Tazuke Kofukai Medical Research Institute, Kitano Hospital, Japan)

P-066 Comparison of neoadjuvant intraarterial chemotherapy versus concurrent chemoradiotherapy in patients with stage IIIB uterine cervical cancer
  Haruki Nakamura (Nara Medical University, Japan)

P-067 Surgical outcomes of fertility–sparing radical abdominal trachelectomy for early–stage uterine cervical cancer
  Hideki Tokunaga (Tohoku University Hospital, Japan)

P-068 Fertility–preserving options for women affected by bulky cervical cancer: Neoadjuvant chemotherapy followed by radical trachelectomy
  Natsuki Tsuji (Tazuke Kofukai Medical Research Institute, Kitano Hospital, Japan)

P-069 Successful delivery after radical trachelectomy and adjuvant chemotherapy for invasive uterine cervical cancer: The first case report
  Tetsuro Hanada (Tazuke Kofukai Medical Research Institute, Kitano Hospital, Japan)

P-070 Role of GnRH agonist in Bcl–2/Bax expression ratio, follicle development and follicle atresia in rattus norvegicus ovary with cyclophosphamide
  Hari Nugroho (Gynecology Oncology Division, Obstetric and Gynecology Department, Soetomo General Hospital, Airlangga University, Indonesia)
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<tr>
<td>11:30-12:30</td>
<td><strong>Poster 6:</strong> Cervical Cancer: Radiotherapy, Chemotherapy, QOL</td>
<td><strong>Chairpersons</strong>&lt;br&gt;<strong>Masato Nishimura</strong> (Tokushima University, Japan)&lt;br&gt;<strong>Tanomsiri Soonthornthum</strong> (Bhumibol Adulyadej Hospital, Thailand)</td>
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<td>P-071</td>
<td>Multi-institutional phase II clinical study of extended-field concurrent chemoradiation therapy for locally advanced cervical cancer in east and southeast Asia&lt;br&gt;Masaru Wakatsuki (Research Center Hospital for Charged Particle Therapy, National Institute of Radiological Sciences, Japan)</td>
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<td>P-072</td>
<td>Preliminary results of computed tomography (CT)-based hybrid brachytherapy for locally advanced gynecological cancers: Gunma University's experience&lt;br&gt;Shin-ei Noda (Department of Radiation Oncology, Gunma University Graduate School of Medicine, Japan)</td>
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<td>P-073</td>
<td>Dosimetric impact of adaptive re-planning for fractionated image-guided intracavitary brachytherapy in cervical cancer&lt;br&gt;Kimiko Hirata (Department of Radiation Oncology and Image-applied Therapy, Kyoto University, Japan)</td>
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<td>P-074</td>
<td>Prognostic factors for predicting recurrent disease in patients with FIGO stage IB-IV cervical cancer treated by primary concurrent chemoradiation&lt;br&gt;Tae Wook Kong (Gynecologic Cancer Center, Department of Obstetrics and Gynecology, Ajou University School of Medicine, Korea)</td>
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<td>P-075</td>
<td>mTOR over-expression is associated with radio-resistance in cervical cancer&lt;br&gt;Masato Nishimura (Department of Obstetrics and Gynecology, The University of Tokushima, Japan)</td>
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<td>P-076</td>
<td>HPV DNA titer before therapy as histopathology response predictor in cervical cancer patients stadium IIB/IIIB who undergo chemoradioation&lt;br&gt;Endy Cahyono (INASGO, Indonesia)</td>
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<td>P-077</td>
<td>Early and late stage small cell neuroendocrine carcinoma of the cervix: Experience with docetaxel-oxaliplatin and radiation&lt;br&gt;Ronald R. Latap (University of the Philippines Manila-Philippine General Hospital, Philippines)</td>
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<td>P-078</td>
<td>Combination of irinotecan (CPT-11) and nedaplatin (NDP) for recurrent patients with uterine cervical cancer&lt;br&gt;Yuko Nakagawa (Department of Obstetrics and Gynecology, St. Marianna University, School, Japan)</td>
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P-079  The utility of platinum–free interval in treatment for recurrent cervical cancer with prior platinum–chemotherapy
   Maki Matoda (Department of Gynecology, Cancer Institute Hospital, Japan)

P-080  Cisplatin plus oral topotecan efficacy in recurrent, persistent or metastatic cervical cancer
   Tanomsiri Soonthornthum (Bhumibol Adulyadej Hospital, Thailand)

P-081  S-1/oxaliplatin (SOX) therapy in recurrent adenocarcinoma of the uterine cervix: A pilot study
   Eriko Takatori (Department of Obstetrics and Gynecology, Iwate Medical University School of Medicine, Japan)

P-082  Impact of new oncolytic HSV therapy for cervical cancer
   Masahiro Kagabu (Iwate Medical University, Japan)

P-083  Estimation of potential gain in quality of life from early detection of cervical cancer
   Ya-Min Cheng (Dept OB/GYN, National Cheng Kung University Medical College and Hospital, Taiwan)

P-084  Development and evaluation of Korean version of gynecologic cancer lymphedema questionnaire (GCLQ–K) in gynecologic cancer survivors
   Sang-Yoon Park (National Cancer Center, Korea)

P-085  Quality of life in cervical cancer patients after pelvic exenteration
   Suphet Tuipae (Department of Obstetrics and Gynecology, Rajavithi Hospital, Thailand)

P-086  A case of non-islet cell tumor hypoglycemia associated with the recurrent cervical cancer
   Hiroshi Takai (Tenri Hospital, Japan)

P-087  Secondary primary cancer after cervical cancer
   Sang-Yoon Park (National Cancer Center, Korea)

11:30~12:30  Poster 7: Uterine Cancer: Risk factors, Imaging, Lymph node metastasis

Chairpersons
   Hironori Tashiro (Kumamoto University Hospital, Japan)
   Hyo Sook Bae (Korea University College of Medicine, Korea)

P-088  Red meat intake and the risk of endometrial cancer: Conventional and dose–response meta-analysis of observational studies
   Yun Hwan Kim (Department of Obstetrics and Gynecology and Medical Research Institute, College of Medicine, Ewha Womans University, Korea)
| P-089 | A case of synchronous quintuple primary cancers  
Shinichi Komiyama (Toho University Ohashi Medical Center, Japan) |
| P-090 | For the group at high risk of endometrial cancer, the liquid based endometrial cytology is useful as a screening tool  
Fumiko Fukagawa (Tokyo Women’s Medical University, Japan) |
| P-091 | Overexpression of p53 in endometrial glands of the postmenopausal women  
Midori Murakami (Departments of Obstetrics and Gynecology, University of Occupational and Environmental Health, Japan) |
| P-092 | Hysteroscopy in the diagnosis of endometrial cancer and its effect on staging and survival: A case series  
Divina Ghea B. Mata (Philippine General Hospital, Philippines) |
| P-093 | Examination of the usefulness of MRI in diagnosis of endometrial carcinosarcoma  
Kaori Tago (Department of Obstetrics and Gynecology, Takasaki General Medical Center, Japan) |
| P-094 | The relationship between the volume of endometrial cancer and lymph node metastasis  
Yuta Tabuchi (Nikko Memorial Hospital, Japan) |
| P-095 | Positive peritoneal cytology is associated with prognosis of patients with stage III (FIGO 2009) endometrial cancer  
Shin-Wha Lee (Department of Obstetrics and Gynecology, University of Ulsan, Asan Medical Center, Korea) |
| P-096 | Validity of PET/CT for pre-operating diagnosis of lymph node metastasis in endometrial cancer  
Kotaro Sueoka (The Cancer Institute Hospital, Department of Gynecological Oncology, Japan) |
| P-097 | The primary tumor’s SUVmax on preoperative FDG-PET/CT correlates with clinicopathological and prognostic factors in endometrial carcinoma and uterine carcinosarcoma  
Tamaki Yahata (Department of Obstetrics and Gynecology, Wakayama Medical University, Japan) |
| P-098 | Pre-operative predictive factor for LN metastasis in uterine papillary serous carcinoma (UPSC): A single-center study in Korean women  
Min-Hyun Baek (Department of Obstetrics and Gynecology, University of Ulsan College of Medicine, Asan Medical Center, Korea) |
| P-099 | STAT1 pathway promotes progression of serous papillary endometrial cancer  
Budiman Kharma (Department of Gynecology and Obstetrics, Kyoto University Graduate School of Medicine, Japan) |
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<th>Poster 8: Uterine Cancer: Individualization, Histology</th>
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**P-100** Expression of the estrogen receptor-alpha as prognostic factor in uterine serous carcinomas  
Tomoko Sho (Department of Obstetrics and Gynecology, University of Occupational and Environmental Health, School of Medicine, Japan)

**P-101** Clinical analysis of high risk endometrial cancer (endometrioid adenocarcinoma G3 and Type2)  
Seiko Kato (Kyoto Second Red Cross Hospital, Japan)

**P-102** Should endometrial clear cell carcinoma be classified as type II endometrial carcinoma?  
Hyo Sook Bae (Department of Obstetrics and Gynecology, Korea University College of Medicine, Korea)

**P-103** The risk and pattern of pelvic and para aortic lymph nodal metastasis in patients with intermediate and high risk endometrial cancer  
Praveen S Rathod (Department of Gynaecologic Oncology, Kidwai Memorial Institute of Oncology, Dr M H Marigowd Road, India)

**11:30~12:30**

**Poster 8: Uterine Cancer: Individualization, Histology**

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<th>Chairpersons</th>
<th>Takashi Iwata (Keio University, Japan)</th>
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<td>Oni Khonsa (University of Indonesia, Indonesia)</td>
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**P-104** A case of small cell carcinoma of the endometrium is treated successfully with multimodality therapy  
Yukiko Okada (Saiseikai Yokohamasi Nanbu Hospital, Japan)

**P-105** Neuroendocrine tumor of the uterine body: A case report  
Goro Maeda (Oji General Hospital, Japan)

**P-106** Diagnosis and treatment results in 36 patients with uterine sarcomas  
Mizue Teramoto (Department of Obstetrics and Gynecology, Sapporo Medical University, Japan)

**P-107** Pazopanib therapy for uterine leiomyosarcoma: Case report  
Go Ichikawa (Department of Obstetrics and Gynecology, Nihon University School of Medicine, Japan)

**P-108** Severe heart failure induced by pazopanib: A case report  
Emiko Daimon (Osaka Medical Center for Cancer and Cardiovascular Diseases, Japan)

**P-109** A case of müllerian adenosarcoma presenting as endometrial polyp protruding from cervical os  
Takahiro Nakajima (Department of Obstetrics and Gynecology, Nihon University School of Medicine, Japan)
| P-110 | A case of uterine tumors resembling ovarian sex cord tumors  
Takahisa Ishikawa (Tokyo Medical University, Japan) |
| P-111 | A case of low-grade endometrial stromal sarcoma (ESS-LG) growing rapidly with morphological alterations  
Akiko Abe (Departments of Gynecology, Cancer Institute Hospital, Japan) |
| P-112 | A case report of extrrenal Wilms’ tumor that occurred in the uterus  
Miwa Suzuki (Department of Obstetrics and Gynecology, Sapporo Medical University, Japan) |
| P-113 | Increased risk of second primary malignancies following uterine cancer:  
A population–based study in Taiwan over a 30 year period  
Chao–Yu Chen (Department of Obstetrics and Gynecology, Chang Gung Memorial Hospital at Linkou, Taiwan) |
| P-114 | Invasive mole in a cesarean section scar of uterus  
Oni Khonsa (INASGO, Indonesia) |

<table>
<thead>
<tr>
<th>11:30～12:30</th>
<th>Poster 9: Uterine Cancer: Molecular biology, Fertility</th>
</tr>
</thead>
</table>
| Chairpersons | Kimio Ushijima (Kurume University Hospital, Japan)  
Wen–Fang Chen (National Taiwan University Hospital, Taiwan) |
| P-115 | Expression of N-acetylgalactosaminyltransferase–6 expression in endometrial carcinomas: Clinicopathologic correlations and prognostic significance  
Thuy Thi Nguyen (Department of Obstetrics and Gynecology, University of Occupational and Environmental Health, Japan) |
| P-116 | Regulatory role of osteopontin in malignant transformation of endometrial cancer  
Chi–Heum Cho (Department of Obstetrics and Gynecology, Keimyung University School of Medicine, Korea) |
| P-117 | Loss of tumor suppressor human disc–large is a novel molecular marker for nodal metastasis and poor prognosis in endometrial cancer  
Takeru Sugihara (Department of Obstetrics and Gynecology, Teikyo University School of Medicine, Japan) |
| P-118 | Urokinase–type plasminogen activator for detection, progression and outcome of endometrial carcinoma  
Wen–Fang Cheng (National Taiwan University Hospital, Taiwan) |
| P-119 | The inhibitory effect of salinomycin on the proliferation, migration and invasion of human endometrial cancer stem–like cells  
Soshi Kusunoki (Juntendo University, Japan) |
P-120 The H3K9 methyltransferase G9a represses E-cadherin and is associated with myometrial invasion in endometrial cancer
  Sheng-Mou Hsiao (Department of Obstetrics & Gynecology, Far Eastern Memorial Hospital, Taiwan)

P-121 Synchronous primary cancers of the endometrium and ovary in young women: A Korean Gynecologic Oncology Group study
  Jae-Weon Kim (Seoul National University Hospital, Korea)

P-122 Prognostic factors in women with synchronous endometrial and ovarian cancers
  Jae-Weon Kim (Seoul National University Hospital, Korea)

P-123 Fertility-sparing therapy with medroxyprogesterone acetate for endometrial cancer and atypical endometrial hyperplasia: A clinicopathological and immunohistochemical study
  Masayo Ukita (Department of Gynecologic Oncology, Hyogo Cancer Center, Japan)

P-124 A case of uterine carcinosarcoma in young woman after MPA treatment: A case report
  Tatsuhiko Shigeto (Department of Obstetrics and Gynecology, Hirosaki University, School of Medicine, Japan)

P-125 Fertility sparing management by photodynamic therapy in young patients with early stage endometrial cancer and cervical cancer
  Seung Jo Kim (Comprehensive Gynecologic Cancer Center, Department of Obstetrics and Gynecology, CHA Bundang Medical Center, Korea)

P-126 Retrospective analysis of selective lymphadenectomy in apparent FIGO 2008 stage I endometrial cancer
  Kanako Yoshida (University of Tokushima, Japan)

P-127 Laparoscopic versus laparotomy staging surgery in women with high grade endometrial cancer: A retrospective analysis
  Woo-Suk Han (Asan Medical Center, Korea)

P-128 Comparison of laparoscopy and laparotomy for endometrial cancer: A retrospective analysis
  Keisuke Kurose (Dep. of OB/GYN, Nippon Medical School, Japan)

P-129 Outcome of ovarian preservation during surgical treatment for endometrial cancer: A Taiwanese Gynecological Oncology Group (TGOG) study
  Hei-Yu Lau (Department of Obstetrics and Gynecology, Taipei Veterans General Hospital, Taiwan)

P-130 The electrothermal bipolar sealing device could prevent with the development of the lymphocele in gynecologic cancers
  Naotake Tsuda (Kurume University, School of Medicine, Japan)
Poster 10: Uterine Cancer: Surgery, Chemotherapy, Radiotherapy

Chairpersons
- Tsukasa Baba (Kyoto University Graduate School of Medicine, Japan)
- Lkhagvadulam Dangaa (National Cancer Center of Mongolia, Mongolia)

P-131 Comparison of laparoscopic–assisted vaginal hysterectomy vs traditional hysterectomies
  Lkhagvadulam Dangaa (Amarsanaa Enkhtur, Mongolia)

P-132 Robotic surgery in gynecological oncology: A report of the experience from a single institute in Taiwan
  Hung–Cheng Lai (Department of Obstetrics and Gynecology, Tri–Service General Hospital, National Defense Medical Center, Taiwan)

P-133 Pulmonary embolism after laparoscopic surgery in comparison with laparotomy for gynecologic malignancies: A non–randomized study
  Hiroshi Asano (Department of Obstetrics and Gynecology, KKR Sapporo Medical Center, Japan)

P-134 Efficacy of vacuum–assisted closure in wound–care management of patients with gynecological cancer
  Taisuke Mori (Kyoto Prefectural University of Medicine, Japan)

P-135 The usefulness of subcuticular sutures with vacuum–assisted–closure in gynecologic malignancies
  Fuminori Ito (Department of Obstetrics and Gynecology, Nara Medical University, Japan)

P-136 Outcome of adjuvant treatment for Stage III endometrial carcinoma in lower southern Thailand
  Aroontorn Pichatechaiyoot (Department of Obstetrics and Gynecology, Faculty of Medicine, Prince of Songkla University, Thailand)

P-137 Prognostic factor of FIGO stage III endometrial cancer
  Masato Tamate (Department of Obstetrics and Gynecology, Sapporo Medical University, Japan)

P-138 Prediction of prognostic factors in patients with recurrent endometrial carcinoma
  Nirmala Chandralega Kampan (Faculty of Medicine, Universiti Kebangsaan Malaysia, Malaysia)

P-139 Treatment–free interval predicts prognosis of, and effect chemotherapy on, recurrent endometrial cancer
  Kumi Shimamoto (Gynecology Service, National Kyushu Cancer Center, Japan)

P-140 Is NAC efficient for stage IV endometrial cancer?
  Akiko Yamamoto (The Cancer Institute Hospital, Japan)
P−141  Validity of the effectiveness of UFT maintenance chemotherapy for patients with endometrial cancer after adjuvant chemotherapy
   Risa Kudo (Niigata University, Japan)

P−142  Dosimetric comparison of interstitial brachytherapy, intensity-modulated radiation therapy and stereotactic radiotherapy for the patient of recurrent endometrial carcinoma
   Haruo Inokuchi (Department of Radiation Oncology and Image- Applied Therapy, Kyoto University, Japan)

11:30～12:30

Poster 11:
Ovarian Cancer: Origin, BRCA, Peritoneal carcinoma, Borderline tumor
Poster ⑪ (Mizuho)

Chairpersons
Yoshihito Yokoyama (Hirosaki University Graduate School of Medicine, Japan)
Jin Woo Shin (Gil Medical Center, Gachon University, Korea)

P−143  Surgical outcome and morbidity of risk reducing salpingo-oophorectomy for BRCA 1/2 mutation carriers
   Tomoko Taniguchi (The Cancer Institute Hospital, Japan)

P−144  Pathology of fallopian tubes surgically removed from 179 patients
   Naoyo Nishida (Department of Pathology, St. Mary’s Hospital, Japan)

P−145  Treatment and prognosis of primary peritoneal carcinoma: Study of 10 cases
   Yumi Takao (National Hospital Organization Kyoto Medical Center, Obstetrics and Gynecology, Japan)

P−146  Primary peritoneal cancer: Study of 14 cases and comparison with epithelial ovarian cancer
   Takeshi Fukuda (Osaka City University, Japan)

P−147  Primary carcinoma of the broad ligament with para-aortic lymph node metastasis: A case report
   Tsutomu Ida (Tokyo Metropolitan Tama Medical Center, Japan)

P−148  Borderline ovarian tumor with extraovarian implants: A clinicopathologic report of five cases
   Yi-Hung Sun (Department of Obstetrics and Gynecology, Chimei Medical Center, Taiwan)

P−149  Risk factors for recurrence in patients with ovarian serous borderline tumor
   Isao Otsuka (Kameda Medical Center, Japan)

P−150  A case of dematomyositis as a paraneoplastic syndrome with ovarian serous adenocarcinoma
   Jin Woo Shin (Department of Obstetrics and Gynecology, Gil Medical Center, Gachon University, Korea)
P-151 Synchronous occurrence of primary neoplasm between squamous cell carcinoma of the cervix and cystadenocarcinoma of the ovary: Case report
   Paulina Febrianty (Dept of Obstetrics and Gynecology, Prof. dr. R. D Kandou Medical College Hospital, Indonesia)

P-152 Large borderline ovarian tumour in an elderly woman: A case report
   Himali, P Thalagama (National Cancer Institute, Sri Lanka)

P-153 Clinical analysis of 373 cases of mucinous borderline ovarian tumor in single institute in Korea
   Ji Hyun Han (Department of Obstetrics and Gynecology, Asan Medical Center, University of Ulsan College of Medicine, Korea)

P-154 A case of ovarian mucinous borderline tumor of intestinal-type with focal squamous differentiation; Histological aspect
   Yasuko Suga (Department of Molecular Diagnostic Pathology, Iwate Medical University, Japan)

P-155 Malignant Brenner tumors of the ovaries, with unilateral leg swelling: A rare case report and review of literature
   Ayaka Iura (Shin-Yurigaoka General Hospital, Department of Obstetrics and Gynecology, Japan)

P-156 Recurrent malignant Brenner tumor of the ovary could be salvaged by intensive systemic chemotherapy: 10 cases analysis in a single institute
   Ji Hyun Han (Department of Obstetrics and Gynecology, Asan Medical Center, University of Ulsan College of Medicine, Korea)

P-157 Prognostic factors, recurrence and fertility outcome in borderline ovarian tumours: Experience from a regional cancer centre
   Dinesh Dhanya (Division of Surgical Oncology, Regional Cancer Centre, Trivandrum, India)

11:30～12:30 Poster 12: Ovarian Cancer: Mixed tumor, Germ cell tumor

Poster 12: Ovarian Cancer: Mixed tumor, Germ cell tumor
   Chairpersons Seiryu Kamoi (Nippon Medical School Chiba Hokusoh Hospital, Japan)
   Limavel Ann M. Veloso (University of the Philippines, Philippines)

P-158 Malignant mixed mesodermal tumour of the ovary: A case series of 19 patients treated in KKH, Singapore from 2001 to 2011
   Joella, X Ang (Department of Gynaecological Oncology, KK Women’s and Children’s Hospital, Singapore)

P-159 Malignant mixed mullerian tumor of the ovary
   Andrea M Gaddi (Philippine General Hospital, Philippines)
P-160  Ovarian carcinosarcoma: Contrasting outcomes from two cases
Satoko Matsumura (Department of Obstetrics and Gynecology Keiyu Hospital, Japan)

P-161  Dysgerminoma in gonadal dysgenesis: A case report
Limavel Ann M. Veloso (University of the Philippines–Philippine General Hospital, Philippines)

P-162  A case of ovarian immature teratoma with gliomatosis peritonei and pseudo–Meigs’ syndrome complicated with cerebral venous thrombosis during cisplatin–based chemotherapy
Takahito Ashihara (Osaka Red Cross Hospital, Japan)

P-163  Yolk sac tumor of 46XY female, suspected sex chromosome abnormality during an operation: A case report
Hiroko Odagawa (Nagoya Kinen Hospital, Japan)

P-164  A pure non–gestational ovarian choriocarcinoma in a 40-year-old women: DNA polymorphism analysis after hand assisted laparoscopic surgical (HALS) staging
Hyun–Jin Roh (Division of Gynecologic Oncology, Department of Obstetrics and Gynecology, University of Ulsan College of Medicine, Ulsan University Hospital, Korea)

P-165  Peptide YY–positive ovarian carcinoid tumors associated with constipation: Report of two cases
Munekage Yamaguchi (Kumamoto University, Japan)

P-166  Evaluation of squamous cell carcinoma arising from mature cystic teratoma
Koichi Yoneyama (Nippon Medical School, Japan)

P-167  Squamous cell carcinoma arising in a mature cystic teratoma
Kathleen Gizelle J. Samonte (University of the Philippines–Philippine General Hospital, Philippines)

P-168  Two cases of paraneoplastic limbic encephalitis for ovarian immature teratoma
Hironori Hayashi (Miyazaki Prefectural Miyazaki Hospital, Japan)

P-169  Ovarian lymphoma in pregnancy: Case report in Dr Cipto Mangunkusumo General Hospital Jakarta
Bram Pradipta (Obstetrics and Gynecology Department, Faculty of Medicine, Universitas Indonesia, Indonesia)

P-170  Hemoperitoneum caused by spontaneous intratumoral bleeding of small bowel stromal tumor mimicking rupture of ovarian mass: A case report
Lian–Shung Yeh (Department of Obstetrics and Gynecology, China Medical University Hospital, Taiwan)
P–171 Ovarian cyst
Dashdemberel Baasankhuu (Clinical Maternity Hospital No1, Mongolia)

P–172 Prediction of non–malignant and malignant ovarian tumours by morphological sonographic evaluation
Thin Zaw (O&G, Central Women’s Hospital, Myanmar)

P–173 Comparison of RMI, CA125, HE4, ROMA and ultrasound score for prediction of malignant ovarian tumor in patients with pelvic mass
Marut Yanaranop (Department of Obstetrics and Gynecology, Rajavithi Hospital, Thailand)

P–174 Comparison between CA–125, HE4 and combination of both CA–125 and HE4 to predict epithelial ovarian carcinoma
Pungky Mulawardhana (Obstetrics and Gynecology Departement, Medical Faculty, Airlangga University, dr. Soetomo Hospital, Indonesia)

P–175 Change in CA–125 levels during primary therapy between early relapsed versus late or non–recurrent Stage III/IV serous ovarian carcinoma
A.R. Ko (Asan Medical Center, Korea)

P–176 High plasma D–dimer level is associated with poor prognosis in ovarian carcinoma
Manabu Sakurai (University of Tsukuba, Japan)

P–177 Meta–analysis of the effects of beta blocker on survival time in cancer patients
Chel Hun Choi (Department of Obstetrics & Gynecology, Samsung Medical Center, Sungkyunkwan University School of Medicine, Korea)

P–178 Accuracy of intraoperative frozen section in the diagnosis of ovarian neoplasm in Cipto Mangunkusumo General Hospital
Tofan W Utami (Department of Obstetrics and Gynecology, Cipto Mangunkusumo General Hospital, Indonesia)

P–179 Malignant pleural effusion: Is it the real factor for stage and prognosis in epithelial ovarian cancers?
Yoo–Kyung Lee (Seoul National University, College of Medicine, Korea)
P-180  Rectal lymph node metastasis in recurrent ovarian carcinoma: Essential role of 18F-FDG PET/CT in treatment planning
Koji Kumagai (Department of Gynecology, Osaka Railway Hospital, Japan)

P-181  Withdrawn

P-182  Fbxw7 is involved in acquisition of the malignant phenotype in epithelial ovarian tumors
Shoko Kitade (Department of Obstetrics and Gynecology, Kyushu University, Japan)

P-183  Overexpression of glucose transporter-1 (GLUT-1) predicts poor prognosis in epithelial ovarian cancer
Min Young Chang (Department of Obstetrics and Gynecology, Gangnam Severance Hospital, Yonsei University College of Medicine, Korea)

P-184  Differences in LINE-1 methylation between endometriotic ovarian cyst and endometriosis-associated ovarian cancer
A-Jaree Senthong (Chulalongkorn University, Thailand)

P-185  Decreased ARID1A expression is correlated with chemo-resistance in epithelial ovarian cancer
Yoshihito Yokoyama (Department of Obstetrics and Gynecology, Hirosaki University Graduate School of Medicine, Japan)

P-186  SWI/SNF complex is a novel prognostic factor in clear cell carcinoma (CCC) of the ovary
Hisham, A. Abou-Taleb (Department of Gynecology and Obstetrics, Graduate School of Medicine, Kyoto University, Japan)

P-187  miR-10b accelerates migration and invasion activities of ovarian cancer cells
Ikue Nakayama (Department of Obstetrics and Gynecology, School of Medicine, Iwate Medical University, Japan)

P-188  microRNA-21 overexpression through the 17q23-25 amplification regulates PTEN tumor suppressor gene expression in ovarian clear cell carcinoma
Yukihiro Hirata (Department of Obstetrics and Gynecology, The Jikei University School of Medicine, Japan)
<table>
<thead>
<tr>
<th>Poster</th>
<th>Title</th>
<th>Author(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>P-189</td>
<td>Lipocalin2 enhances migration, invasion and tolerance against oxidative stress of ovarian clear cell carcinoma cells</td>
<td>Yasushi Yamada (Department of Obstetrics and Gynecology, Shinshu University School of Medicine, Japan)</td>
</tr>
<tr>
<td>P-190</td>
<td>CDX2 and MDR1 protein expression in ovarian mucinous adenocarcinoma</td>
<td>Iemasa Koh (Department of Obstetrics and Gynecology, Hiroshima University Hospital, Japan)</td>
</tr>
<tr>
<td>P-191</td>
<td>The expression pattern and biologic function of toll-like receptors (TLRs) in ovarian cancer cell lines</td>
<td>Shin-Wha Lee (University of Ulsan, Asan Medical Center, Korea)</td>
</tr>
<tr>
<td>P-192</td>
<td>Targeted gene silencing using follicle-stimulating hormone peptide-conjugated nanoparticles improves its specificity and efficacy in ovarian clear cell carcinoma in vitro</td>
<td>Shanshan Hong (Obstetrics and Gynecology Hospital, Fudan University, China)</td>
</tr>
</tbody>
</table>

**Poster 15:** Ovarian Cancer: Molecular biology and Immunology

11:30~12:30

Chairpersons: Tsunekazu Kita (Nara Prefectural Nara Hospital, Japan)

P-193  COL11A1 promotes tumor progression and predicts poor clinical outcome in ovarian cancer  
Cheng-Yang Chou (Department of Obstetrics & Gynecology, National Cheng Kung University Hospital, Taiwan)

P-194  Suppression of STAT1 signal pathways reduces ovarian cancer progression  
Aya Kobayashi (Department of Obstetrics and Gynecology, Wakayama Medical University, Japan)

P-195  Sonic hedgehog signaling pathway regulates EMT in the crosstalk between mesenchymal stem cells and ovarian cancer cells  
Kyeong A So (Department of Obstetrics and Gynecology, Korea University Guro Hospital, Korea)

P-196  Interaction between peritoneal mesothelial cells and ovarian cancer cells in peritoneal dissemination  
Hiroko Mitsui (Department of Obstetrics and Gynecology, Nagoya University Graduate School of Medicine, Japan)
P-197 The significance of lymphatic endothelial progenitor cells and vascular endothelial growth factor-C in tumor lymphangiogenesis of ovarian cancer
Takeshi Hisamatsu  (Osaka University Graduate School of Medicine, Japan)

P-198 Clinical and immunological analysis in a phase II trial of the Glypican-3 peptide vaccine for ovarian clear cell carcinoma patients
Shiro Suzuki  (Department of Obstetrics and Gynecology, Nagoya University Graduate School of Medicine, Japan)

P-199 Down regulation of HLA Class I expression is a risk factor of poor prognosis in ovarian cancer of Japanese female
Tasuku Mariya  (Department of Obstetrics and Gynecology, Sapporo Medical University, Japan)

P-200 Chemotherapy induces PD-L1 overexpression via NF-kB signal pathway in ovarian cancer cells
Jin Peng  (Department of Gynecology and Obstetrics, Kyoto University Graduate School of Medicine, Japan)

P-201 Salinomycin induces apoptosis via death receptor 5 up-regulation in cisplatin-resistant ovarian cancer cells
Chi-Heum Cho  (Department of Obstetrics and Gynecology, Keimyung University School of Medicine, Korea)

P-202 Salinomycin inhibits Akt/NF-κB and induces apoptosis in cisplatin resistant ovarian cancer cells
Chi-Heum Cho  (Departments of Obstetrics and Gynecology, Keimyung University, School of Medicine, Korea)

P-203 Synergistic effect of COX-2 inhibitor on paclitaxel-induced apoptosis in the human ovarian cancer cell
Mikyung Kong  (Institute of Women’s Life Medical Science, Department of Obstetrics and Gynecology, Yonsei University College of Medicine, Korea)

11:30〜12:30 Poster 16:
Ovarian Cancer: Surgery, Laparoscopy

Poster ③ (Ran)

Chairpersons
Toshiharu Yasugi  (Tokyo Metropolitan Cancer and Infectious Disease Center Komagome Hospital, Japan)
Sang-Yoon Park  (National Cancer Center, Korea)

P-204 Overall treatment time and disease free interval in primary debulking ad
stage epithelial ovarian cancer with carboplatin-paclitaxel chemotherapy
Fara Vitantri  (INASGO, Indonesia)
<table>
<thead>
<tr>
<th>P-205</th>
<th>Phrenic nerve sparing cardiophrenic lymph node dissection in the surgical management of ovarian cancer</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sang-Yoon Park (National Cancer Center, Korea)</td>
</tr>
</tbody>
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<thead>
<tr>
<th>P-206</th>
<th>Study for 43 cases of primary ovarian cancer with resection of the intestine</th>
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<tbody>
<tr>
<td></td>
<td>Hiroshi Kaneda (Department of Obstetrics and Gynecology, Juntendo University Hospital, Japan)</td>
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<thead>
<tr>
<th>P-207</th>
<th>The role of cytoreductive surgery in the relapse of gynecological cancer</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Masayuki Futagami (Department of Obstetrics and Gynecology, Hirosaki University Graduate School of Medicine, Japan)</td>
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<thead>
<tr>
<th>P-208</th>
<th>Recurrent sites of ovarian, fallopian tube, and peritoneal cancers after interval debulking surgery</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Tomoka Usami (The Cancer Institute Hospital, Japan)</td>
</tr>
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<tr>
<th>P-209</th>
<th>Long-term survival of recurrent ovarian cancer</th>
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<td>Hisamitsu Takaya (Kameda Medical Center, Japan)</td>
</tr>
</tbody>
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<tr>
<th>P-210</th>
<th>Eight cases of ovarian tumor treated by laparoscopic surgery and diagnosed malignant postoperatively</th>
</tr>
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<tr>
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<td>Futoshi Arakane (Japanese Red Cross Kumamoto Hospital, Japan)</td>
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<tr>
<th>P-211</th>
<th>Umbilical metastasis after laparoscopic surgery for ovarian carcinosarcoma: A rare case report</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Seiro Satohisa (Department of Obstetrics &amp; Gynecology, Sapporo Medical University, Japan)</td>
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<thead>
<tr>
<th>P-212</th>
<th>Current role of single port gasless laparoscopy–assisted mini–laparotomic ovarian resection (SP–GLAMOR)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Joo Hee Yoon (Department of Obstetrics and Gynecology, College of Medicine, The Catholic University of Korea, Korea)</td>
</tr>
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<thead>
<tr>
<th>P-213</th>
<th>Recurrence of a granulosa cell tumor resected by laparoscopic surgery: Case report</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Chihaya Sasakura (Department of Obstetrics and Gynecology, Ishikawa Medical Center of Maternal and Child Health, Ishikawa Prefectural Central Hospital, Japan)</td>
</tr>
</tbody>
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<tr>
<th>P-214</th>
<th>Port site metastasis in laparoscopic surgery for gynecological cancer: Our experience and literature review</th>
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<tbody>
<tr>
<td></td>
<td>Tanushree Jain (Department of Gynecologic Oncology, Tata Memorial Hospital, India)</td>
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### Poster 17:
**Ovarian Cancer: Chemotherapy, Radiotherapy, QOL**

<table>
<thead>
<tr>
<th>Chairpersons</th>
<th>Tsutomu Tabata (Mie University, Japan)</th>
<th>Veena Jain (Ludhiana Mediwavs Hospital, India)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>P-215</strong></td>
<td>Neoadjuvant chemotherapy in advanced stage carcinoma ovary</td>
<td>Veena Jain (India)</td>
</tr>
<tr>
<td><strong>P-216</strong></td>
<td>The use of polymeric micellar paclitaxel in the management of epithelial ovarian cancer</td>
<td>Ana Victoria V. Dy Echo (University of the Philippines-Manila, College of Medicine, Philippine General Hospital, Philippines)</td>
</tr>
<tr>
<td><strong>P-217</strong></td>
<td>Development of a mathematical model with differential equations of intraperitoneal/intravenous infusion of taxanes</td>
<td>Yasunari Miyagi (Okayama Ohfuku Clinic, Japan)</td>
</tr>
<tr>
<td><strong>P-218</strong></td>
<td>High cumulative dose of pegylated liposomal doxorubicin induce left ventricular eccentric hypertrophy</td>
<td>Akiko Sumi (Department of Obstetrics and Gynecology, Tenri Hospital, Japan)</td>
</tr>
<tr>
<td><strong>P-219</strong></td>
<td>Efficacy of intraperitoneal chemotherapy with cisplatin during staging surgery in epithelial ovarian cancer</td>
<td>Ji-Young Yoon (Cheil General Hospital and Women’s Healthcare Center, Kwandong University College of Medicine, Korea)</td>
</tr>
<tr>
<td><strong>P-220</strong></td>
<td>Efficacy of pegylated liposomal doxorubicin (PLD) for recurrent epithelial ovarian cancer</td>
<td>Piyawan Pariyawateekul (Bhumibol Adulyadej Hospital, Thailand)</td>
</tr>
<tr>
<td><strong>P-221</strong></td>
<td>Clinical usefulness of CPT-11 as a single agent for recurrent ovarian cancer</td>
<td>Kohei Omatsu (Cancer Institute Hospital, Japan)</td>
</tr>
<tr>
<td><strong>P-222</strong></td>
<td>Four-day nogitecan hydrochloride schedule in heavily pretreated recurrent ovarian carcinoma patients</td>
<td>Ikuro Ito (Department of Obstetrics and Gynecology, Takasaki General Medical Center, Japan)</td>
</tr>
<tr>
<td><strong>P-223</strong></td>
<td>Efficacy and limitations of single-agent gemcitabine in patients with taxane/platinum-resistant recurrent ovarian cancer: A single institutional experience</td>
<td>Yuji Takei (Department of Obstetrics and Gynecology, Jichi Medical University, Japan)</td>
</tr>
<tr>
<td>Poster 18: Ovarian Cancer: Chemotherapy, Radiotherapy, QOL</td>
<td>11:30～12:30</td>
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<td><strong>Chairpersons</strong></td>
<td><strong>Toyomi Satoh</strong> (University of Tsukuba, Japan)</td>
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<tr>
<td><strong>Shizuo Machida</strong> (Jichi Medical University, Japan)</td>
<td></td>
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</tr>
<tr>
<td>P-224 Survival impact of Stage I clear cell ovarian carcinoma</td>
<td>Kanako Tsukamoto (Musashino Red Cross Hospital, Japan)</td>
<td></td>
</tr>
<tr>
<td>P-225 Combination chemotherapy with itraconazole for patients with recurrent or persistent ovarian clear cell carcinoma</td>
<td>Kayo Inoue (Meiwa General Hospital, Japan)</td>
<td></td>
</tr>
<tr>
<td>P-226 Gene therapy by the polymer multiplex-coated oncolytic adenovirus using the chondroitin sulfate and polyethyleneimine for ovarian cancer</td>
<td>Kazuko Takagi (Department of Obstetrics and Gynecology, School of Medicine, Ehime University, Japan)</td>
<td></td>
</tr>
<tr>
<td>P-227 The effect and adverse events of radiation therapy for chemotherapy-resistant recurrent epithelial ovarian cancer</td>
<td>Shizuo Machida (Jichi Medical University, Japan)</td>
<td></td>
</tr>
<tr>
<td>P-228 A prospective observational study on chemotherapy-induced nausea and vomiting (CINV) for gynecologic cancer patients by CINV study group of Japan</td>
<td>Mika Mizuno (Nagoya University Graduate School of Medicine, Japan)</td>
<td></td>
</tr>
<tr>
<td>P-229 Protective effect of goshajinkigan against peripheral nerve disorder induced by paclitaxel</td>
<td>Yukiko Matsumura (Department of Obstetrics and Gynecology, Hirosaki University Graduate School of Medicine, Japan)</td>
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<td>P-230 Usefulness of the Palliative Prognostic Index for terminally ill patients with gynecologic cancers</td>
<td>Keiichiro Nakamura (Okayama University Graduate School of Medicine, Dentistry and Pharmaceutical Sciences, Japan)</td>
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<td>P-231 A comparison of clinical features and other lifestyle on survival in Stage III/IV serous ovarian cancer</td>
<td>A.R. Ko (Asan Medical Center, Korea)</td>
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<td>P-232 Lymphomas of female genital tract: A clinical dilemma</td>
<td>Tanushree Jain (Department of Gynecologic Oncology, Tata Memorial Hospital, India)</td>
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10th Japan-Korea Gynecologic Oncology Group Joint Meeting
Agenda

Date: December 14, 2013
Venue: The Westin Miyako Hotel Kyoto, Hall C

07:45-08:00 Registration remarks and introduction

08:00-08:10 Opening remarks and introduction
Japan Kazunori Ochiai (President of JGOG, The Jikei Univ.)
Korea Joo-Hyun Nam (President of KGOG, Univ. of Ulsan)

Part 1 Cervix
Chairpersons Japan Mikio Mikami (Tokai Univ.)
Korea Duk-Soo Bae (Sungkyunkwan Univ.)
08:10-08:25 Japan Clinicopathologic features of 6200 patients with stage IB-IIB cervical cancer: JGOG surveillance (JOG1072a)
Muneaki Shimada (Tottori Univ.)
08:25-08:40 Korea International collaboration in Cervix cancer trials, the role of K-JOG.
Sang-Young Ryu (Korea Cancer Center Hospital)

Part 2 Uterine corpus
Chairpersons Japan Toshiaki Saito (Kyusyu cancer center)
Korea Seung Cheol Kim (Ewha Womans Univ.)
08:40-08:55 Japan Ongoing protocols and protocols under investigation in the uterine cancer committee.
Toshiaki Saito (Kyusyu cancer center hospital)
Chairman, JGOG uterine cancer committee
08:55-09:10 Korea Ongoing and planned conservative therapy, lymphadenectomy trial
Jae-Weon Kim (Seoul Nat'l Univ.)

Part 3 Ovary
Chairpersons Japan Junzo Kigawa (Matsue City Hospital)
Korea Young-Tak Kim (Ulsan Univ.)
09:10-09:25 Japan A phase III randomized clinical trial concerning the necessity of adjuvant chemotherapy for epithelial ovarian cancer surgically staged as I: JGOG 3020
Hirosi Tanabe (The Jikei Univ. Kashiwa Hospital)
Member, JGOG ovarian cancer committee
09:25-09:40 Korea Results of phase I and phase II studies of genexol® PM plus carboplatin in EOC
Yong-Man Kim (Ulsan Univ.)

Discussion and Future Perspectives
09:40-09:50 Japan Keiichi Fujiwara (Saitama Med Univ. Int Med Center)
09:50-10:00 Korea Jae Hoon Kim (Yonsei Univ.)

10:00-10:10 Closing remarks
Korea Hee Sug Ryu (Ajou Univ.)
Japan Masahide Ohmichi (Osaka Medical College.)
Abstracts

The 55th JSGO Grant Seminar
The 55th JSGO Educational Seminar
The 3rd ASGO Opening: Luncheon Symposium
The 3rd ASGO Opening Plenary: Welcome from Japan
Educational Lecture on Ovarian Cancer
Educational Lecture on Endometrial Cancer
Educational Lecture on Gynecologic Cancer Surgery
Round Table Discussion for Serous Ovarian Cancer (SOC)
Round Table Discussion for High-Risk Endometrial Cancer
The 3rd ASGO Asia-Oceania Symposium
Palliative Care for Women with Gynecological Cancer
Management of Malignant Ascites in Gynecological Cancer
Role of da Vinci in Gynecological Cancer Surgery
The 3rd ASGO Luncheon Symposium
The 3rd ASGO Evening Symposium
The 3rd ASGO Morning Lecture
Comprehensive analysis of immune status in ovarian cancer patients: Toward development of novel chemo–immunotherapy with PD–1/PD–L1 signal blocking

Department of Gynecology and Obstetrics, Kyoto University Graduate School of Medicine, Japan
Junzo Hamanishi

Background: Recent evidences have shown that the therapeutic efficacy of chemotherapy was largely associated with the host immune system on several kinds of tumors. However how chemotherapy affects on ovarian cancer microenvironment is unknown.

Aim: We investigated the immunological change in tumor microenvironment after chemotherapy.

Methods: Two public microarray data before and after chemotherapy, GSE13525 (human ovarian cancer cell line) and GSE9455 (human ovarian cancer tissues) were analyzed. We used mouse (ID8 and HM–1) and human (OVCAR8, ovary1847, RMG–II and SKOV3) ovarian cancer cell lines and treated with paclitaxel (PTX), carboplatin (CBDCA), gemcitabine (GEM), NF–kB–siRNA was transduced in HM1, ID8, ovary1847 and OVCAR8 and these cells were treated by PTX or GEM. Next PD–L1 overexpressed ID8 (ID8–PDL1) and PD–L1 depleted ID8 (ID8–mirPDL1) were created by lentiviral transduction and these ID8 cells were intraperitoneally injected (ip.) into syngeneic BL6 mice, following PTX or GEM ip.

Results: Microarray data suggested chemotherapy induced PDL1 and activated NF–kB signaling pathway. In vitro assay, any of these chemo–agents increased NF–kB–p65 as well as PD–L1, detected by Western blot. PD–L1 was also confirmed with flowcytometry in HM1 and ID8 treated with PTX or GEM. The knockdown of NF–kB decreased the PD–L1 overexpression by chemo–agents in both mouse and human cell lines. ID8–PD–L1 ip. mice without PTX treatment showed the worst prognosis, while ID8–mirPDL1 mice with PTX showed the best prognosis.

Conclusions: Chemotherapy induced PD–L1 expression through activation of the NF–kB signal. Chemonimmunotherapy with PD–L1/PD–1 signal blocking could be a next promising treatment modality against ovarian cancer.

Biosketch

Curriculum Vitae:
1999
M.D. Osaka Medical College
1999–2001
Dept. of Obstetrics and Gynecology, Kyoto University Hospital
2001–2004
Dept. of Obstetrics and Gynecology, Hyogo Prefectural Amagasaki Hospital
2004–2005
Dept. of Obstetrics and Gynecology, Kyoto University Hospital
2005–2009
Dept. of Gynecology and Obstetrics, Graduate School of Medicine, Kyoto University
2009
PhD. Graduate School of Medicine, Kyoto University
2009–
Assistant Professor, Dept. of Gynecology and Obstetrics, Graduate School of Medicine, Kyoto University
2013–
Principal Investigator, Clinical Trial of Anti–PD–1 Ab/Nivolumab therapy for ovarian cancers

Awards:
2009
61th JSOG Good Presentation Award
2010
62th JSOG 1st Best Paper Award
2013
51th JSCO Excellent Oral Presentation Award
Overcoming platinum-resistance in ovarian cancer:
Identification of novel therapeutic targets using genome-scaled siRNA screening

Tohoku University School of Medicine, Japan
Masafumi Toyoshima

Cisplatin, a platinum-based compound, is a potent chemotherapy drug that is commonly used in combination with other drugs to treat ovarian cancer. While the cancer is initially sensitive to the drug, patients often relapse with Cisplatin-resistant tumors, leading to increased morbidity and mortality. We tackled chemoresistance of ovarian cancer by finding "druggable" gene targets that, when inhibited, sensitize cells to Cisplatin. In a high-throughput screen in which 6550 genes in Cisplatin-resistant A2780 cells were targeted with siRNA, 113 potential genes were identified as significant Cisplatin-sensitizing hits. We selected 31 of the 113 candidate hits based on their significance and druggability. These hits were tested with independent pools of siRNAs in additional two ovarian cancer cell lines—TOV112D and CaOV3, with the aim being to identify a set of targets that reproducibly sensitize ovarian cancer cells to Cisplatin treatment.

With this screen in TOV112D and CaOV3 cells as well as the first screen performed in Cisplatin-resistant A2780 cells, we have identified probably druggable targets. Experimental drugs already exist for three of the common sensitizers found between the three cells—TIE1, LCK, and the CEC2 bromodomain family. Future steps include
1. Using stable and conditional lentiviral vectors in place of siRNAs in order to study the inhibitory effects of these druggable genes on long-term basis in vitro and in vivo.
2. Develop new drugs and associated biomarkers to treat Cisplatin-resistant ovarian cancer cells based on our candidate targets.

Biosketch

Institution, Degree, Field of Study:
Tohoku University School of Medicine, M.D., 2000, Medicine
Tohoku University Graduate School of Medicine, Ph.D., 2007, Medical Science

Positions:
Medical Staff, Department of Obstetrics & Gynecology, 2000–2002, Yuri Kumi General Hospital, Akita, Japan
Medical Staff, Department of Obstetrics & Gynecology, 2002–2003, Iwaki Kyoritsu General Hospital, Fukushima, Japan
Medical Staff, Department of Gynecology, 2003–2007, Tohoku University Hospital, Sendai, Japan
Assistant Professor, Department of Gynecology, 2007–2008, Tohoku University Hospital, Sendai, Japan
Research Associate, Program in Cancer Biology, Divisions of Human Biology and Public Health Sciences, 2008–2011, Fred Hutchinson Cancer Research Center, Seattle, USA
Assistant Professor, Department of Gynecology, 2011–2013, Tohoku University Hospital, Sendai, Japan
Medical Director, Department of Obstetrics & Gynecology, 2013–, Tyubu Hospital, Iwate, Japan

Honors:
2010, Scholarship Award, Marsha Rivkin Center for Ovarian Cancer Research
2011, Award for the best subject, the 63th Annual Congress of the Japan Society of Obstetrics and Gynecology
2013, The best teacher award, Tohoku University School of Medicine
Cancer genome: Toward tailored medicine

Makoto Mark Taketo

While the term “cancer” was known in ancient days both in the Western and Oriental worlds, the beginning of cancer research as a modern science appears to have started in the late 18th Century in England as exemplified by the epidemiological study of scrotal skin cancer of chimney sweeps by Percival Pott. Unfortunately, however, this important result was not utilized in England. It was rather in Denmark where the chimney sweep guild took a campaign to prevent this occupational disease by strongly recommending their members to take a shower or bath after work every day.

In the early 20th Century, experimental cancer research began with animal model studies. The discovery by Peyton Rous of chicken sarcoma virus in 1911 was the first indication of virus as a causative agent for cancer. This was followed by two important discoveries by Japanese scientists: Fujinami Sarcoma virus in 1974, and chemical carcinogenesis in rabbits by Yamagiwa and his colleagues in 1975.

The strongest foundation was laid for robust progress in cancer research by the elucidation of DNA structure in 1953, and demonstration thereafter of the mechanisms for the central dogma: the flow of information from DNA through RNA to protein. In the last quarter of the 20th Century, the recombinant DNA technology became available and offered the methods for gene cloning and DNA base sequence determination. These methods allowed identification and isolation of mutated genes that are responsible for cellular transformation and tumor suppression. In 1976, it was predicted that viral oncogenes were derived from the intrinsic cellular genes, and in 1981, the first isolation of oncogene Ras was reported, followed by isolations of many oncogenes and tumor suppressor genes.

In the 1990s, the Human Genome Project was initiated in the United States, draft sequence of which was published in 2000, followed by complete sequence of the whole genome in 2003. The total budget allocated to this program was ~3 billion US$, which was a big bargain considering the impact of and fruits obtained from the results. Further development of automated DNA sequencing machines has made it an almost routine work today to determine the whole genome sequences for individual tumors.

Application of these new techniques on the analysis of the whole genome offered us a new picture of the genetic changes in human cancer. For example, a single type of cancer has accumulated at least 5-10 major (i.e., common) mutations, with possibly far more numbers of distinct but rather uncommon mutations. In addition to the genetic mutations, epigenetic alterations of chromatin structures also play extremely important roles in cancer development and progression.

In terms of cancer therapy, many new “molecular targeted drugs and therapeutic antibodies” have been introduced in the 21st Century. The basis of the therapeutic strategy is the mechanism-based molecular diagnosis and stratification of the disease and patients, for targeting the individual cancer with specific new therapeutics.

In addition, investigations on some cancer-specific phenomena are making big progresses. For example, molecular basis for the chromosomal instability and cancer stem cell hypothesis are hottest areas of research these days. Thus, the cancer research today gives us an impression as if we are closing in on the goal of cancer therapy to overcome this disease completely. Unfortunately, however, this is still an un-
achieved dream, and cancer remains a horrific lethal disease for many patients. Why is this so? Where should we be going in cancer research? I would like to discuss such possibilities for future research directions.

**Biosketch**

**EDUCATION/TRAINING** (Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)

**INSTITUTION AND LOCATION**

<table>
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<tr>
<th>Degree</th>
<th>Year(s)</th>
<th>Field of Study</th>
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<tr>
<td>B.A.</td>
<td>1967-1969</td>
<td>Liberal Arts</td>
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<td>M.D.</td>
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<td>Medicine</td>
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<td>Ph.D.</td>
<td>1974-1978</td>
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<td>1981-1983</td>
<td>Molecular Biology</td>
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**Positions and Honors.** List in chronological order previous positions, concluding with your present position. List any honors. Include present membership on any Federal Government public advisory committee.

1973-1974  Resident Physician  Kyoto Univ. Hospital  (Cardiology/Nephrology)
1983-1990  Assoc. Staff Scientist  Jackson Laboratory, Bar Harbor, ME
1992-1996  Senior Director  Banyu Tsukuba Res. Inst.(Merck), Japan
1996-2000  Professor  Grad. Sch Pharm. Sci., Univ. of Tokyo (Biomed. Genet.), Japan
1999-2013  Professor  Grad. Sch. Medicine, Kyoto Univ. (Pharmacology), Japan
Tumor immunotherapy started with non-specific modalities such as administration of microbial components and cytokines. Thereafter, since Boon et al. identified the first tumor antigen MAGE-1 in melanoma in 1991, many tumor antigens have been identified, and researches on antigen-specific immunotherapy have developed. Concurrently, advances in basic immunology have led to elucidating immune components important for tumor immunology, such as innate immunity, dendritic cells, and regulatory T cells. Incorporating these findings, peptide vaccines, dendritic cell vaccines, and adoptive T cell therapies have been tried. Then, in 2010 FDA has approved cellular immunotherapy using dendritic cell-enriched population and a prostate cancer antigen as the first antigen-specific tumor immunotherapy. Furthermore, adoptive transfer of T cells transduced with a tumor-specific T cell receptor gene or those transduced with a chimeric gene encoding an antibody reactive to a surface molecule on tumor cells has exhibited remarkable tumor shrinkage.

It has also been clarified that tumor cells express various immunosuppressive factors and thus curtail anti-tumor immune responses and that elimination of such immunosuppression is crucial for improving the outcome of immunotherapy. In this line, in 2011 FDA has approved a blocking antibody against CTLA-4 that transmits an inhibitory signal to T cells and also functions as immunosuppressive molecules on regulatory T cells for the treatment of melanoma. Furthermore, blocking antibodies against PD-L1 or PD-1 which are expressed on tumor cells and T cells, respectively, and transmit an inhibitory signal to T cells have shown anti-tumor effects on melanoma, non-small-cell lung cancer, renal-cell cancer, and ovarian cancer. Thereafter, the combination of anti-CTLA4 and anti-PD-1 monoclonal antibodies has shown an amazing clinical effect on advanced melanoma with clinical activity in 65% of patients, among which many patients experienced rapid, deep, and durable tumor shrinkage.

As such, advances in immunology and cancer biology have culminated in obtaining clinically meaningful effects even in advanced cancers. Moreover, many clinical trials of tumor immunotherapy are in progress mainly in the States and Europe. The findings of anti-CTLA4 and anti-PD-1 antibodies indicate that tumor immunotherapy will be based on elimination of immunosuppressive factors. Thus, combinations of such elimination with anti-tumor vaccines or adoptive T cell therapies will be tried. In addition, many other strategies, such as development of adjuvants that boost effects of anti-tumor vaccines and elimination of immunosuppressive factors other than CTLA-4 and PD-1, await clinical trials or are already in progress. At the same time, such combination strategies will increase the risk of attack to normal cells (autoimmunity). Thus, tumor immunotherapy will further advance while balancing effects and avoidance of adverse events, and will be established as a standard anti-tumor therapy in the near future.
Biosketch

Education:
1986 M.D., Kyoto University School of Medicine, Japan
1996 Ph.D. (Dr. of Medical Science), Department of Hematology and Oncology, Graduate School of Medicine, Kyoto University

Professional Training and Employment:
1986–1991 Resident in Internal Medicine, Tenri Hospital, Tenri, Japan
1996–1999 Postdoctoral Fellow, DNAX Research Institute, USA
1999–2005 Assistant Professor, Department of Hematology and Oncology, Graduate School of Medicine, Kyoto University
2005–2010 Senior Lecturer, Department of Hematology and Oncology, Graduate School of Medicine, Kyoto University
2010–present Associate Professor, Department of Hematology and Oncology, Graduate School of Medicine, Kyoto University
In Japan, before the amendment of Pharmaceutical Affairs Law in 2001, officially registered clinical trial to collect clinical data for new drug approval was limited to those sponsored by pharmaceutical industries (industry-sponsored clinical trials). By this amendment, a new track was opened for doctors who wish to initiate and conduct such official trials by their own sponsorship (Doctor/Investigator-initiated trials, IIT).

At the beginning of such new track, most of the IITs were for expansion of indications of already approved drugs or for approval of drugs approved in other countries such as USA or in EU. Even for such trials, load for the doctors who conduct IITs were very heavy because they had to have sponsor function such as design trial protocol, present the trial notice to the government and manage whole trial, and there were almost no function or organization which support the sponsor function in academia or hospital side.

In 2001, Kyoto University Hospital established the Translational Research Center (TRC) to promote the translation of basic research results (seeds) to clinical applications. As a response to the amendment of Pharmaceutical Affairs Law in 2001, to accelerate smooth translation of academic seeds to new medical treatment or drugs, the center tried to establish the function to support the sponsorship of doctors/investigators who wish to conduct IITs. The center built up and is supporting the conduct, at the Department of Gynecology in Kyoto University Hospital, of an IIT for recurrent ovarian cancer treatment using a new antibody–drug candidate not yet approved anywhere or for any indication. In April of this year, TRC was unified with two other center to widely support clinical and translational studies including industry-sponsored trials and post–market clinical studies, and renewed as Institute for Advancement of Clinical and Translational Science (iACT).

As the organization which supports the sponsor function of a clinical trial like our TRC, so called TR centers, has been established all over the country, IITs became not to limited in simply collecting the clinical data for expansion of indications of already approved drugs, but doctors/investigators can participate in development of new drugs more positively, and can promote scientific development by IITs now.

In this seminar, based on the characteristics of the clinical trials in cancer field, I would like to overview each work to build up IITs, such as designing of protocol that is basis of the scientific nature of the trial, cooperation with companies including supply of the drug candidate, negotiation with the regulatory agency, an incentive of the subject recruitment by a proper patient survey, supply of the fund by grants-in-aid for scientific research and/or cooperative research contracts with industries, and subscription to compensation insurance, and so on. I also would like to stress the importance of the function to manage the whole trial.
Biosketch

Education:
1973–1979  Faculty of Medicine, The University of Tokyo (M.D.)
1979–1980  Graduate School of Medicine, The University of Tokyo
1980–1983  Graduate School of Medicine, Osaka University Medical School (Ph.D.)

Profession
1983–1984  Assistant Professor, Department of Genetics, Osaka University Medical School
1984–1986  Assistant Professor, Department of Medical Chemistry, Kyoto University Faculty of Medicine
1986–1987  Research Fellow, Department of Genetics, Harvard Medical School
1987      Associate Research Fellow, Howard Hughes Medical Institute
1988      Lecturer, Department of Medical Chemistry, Kyoto University Faculty of Medicine
1988–1992  Associate Professor, Center for Molecular Biology and Genetics, Kyoto University
1992–2005  Professor, Center for Molecular Biology and Genetics, Kyoto University
1996–2004  Director, Center for Molecular Biology and Genetics, Kyoto University
2001–2013  Professor, Department of Experimental Therapeutics, Translational Research Center, Kyoto University Hospital
2007–2010, Deputy director, Translational Research Center, Kyoto
2012–2013  University Hospital
2013–present  Professor, Department of Experimental Therapeutics, Institute for Advancement of Clinical and Translational Science (iACT), Kyoto University Hospital
2013–present  Deputy director, Institute for Advancement of Clinical and Translational Science (iACT), Kyoto University Hospital

Membership:
The Japanese Biochemical Society
Japanese Society for Immunology
The Molecular Biology Society of Japan
American Society for Biochemistry and Molecular Biology

Editorial:
2001–2005  Editorial Board, Microbiology and Immunology
2006–2013  Editorial Advisory Board, Anti-Inflammatory & Anti-Allergy Agents in Medicinal Chemistry
2006–2013  Editorial Board, Immunology Letters

Award:
1992      Young Investigator Award, The Japanese Biochemical Society
Cancer clinical trials have many aims; application for indication approval of new drugs and devices, evidence building for new preventive or diagnostic measures and more effective treatment, establishment of the patient support program, and so on. The regulatory system, by which investigators could carry out the trials for the purpose of indication–approvals, has become more complicated. Currently, there are two ways available for the investigators; the supplemental NDA (new drug application) to add indications for off-label use based on published papers (Kouchi–shinsei) and the investigator-initiated indication-directed clinical trials (Ishi–shudo Chiken). Therefore, the investigators are required to be knowledgeable on the regulatory system, as well as the study design according to the purpose of the study and the operational aspects to conduct the trials.

The clinical trial team has been required to change its framework due to the complexity of the studies. In the past, the clinical trial team consists of the investigators and the site CRCs. However, it is now with various specialists in clinical trials, such as the statisticians, data managers, study monitors, project managers, protocol coordinators, auditors, and intellectual property managers, as well as the clinical staff including the board certified oncology pharmacy specialists, certified nurse specialists on cancer nursing, certified nurses on cancer chemotherapy nursing and others.

Many hospitals are currently working as functional organizations with several different functional departments. However, the clinical trials require a different style of organization as the clinical trial team, "matrix organization", considering a study as a project with concrete action plans.

My lecture would focus on essential issues to manage the clinical trial team, such as the importance of clarification of the roles and responsibilities within the clinical trial team, in addition to the importance of information sharing. Three examples of the clinical trial team would be presented; the cancer cooperative group with a central administration office and a data center for multi-institutional trials, a clinical trial team for an investigator-initiated indication-directed clinical trial for ovarian cancer with a new drug at the university hospital, and a clinical trial team, currently I am working on, at one of the designated regional cancer hospitals in Japan.

Biosketch

Miyuki Niimi, RN, PhD, graduated from the University of Tokyo, Faculty of Medicine, School of Health Sciences and Nursing in 1994, and from University of Tsukuba, Graduate School of Medicine in 2002 with a Doctor of Medical Science. Since 2012, she currently is working as the operations manager and a research nurse at the Clinical Research and Trials Center of Saku Central Hospital in Nagano, after worked as a staff nurse in some hospitals and as a data–manager, a study monitor, a project manager or an auditor at the Translational Research Center of Kyoto University Hospital, JCOG Data Center of National Cancer Center and Daiichi Sankyo Co., Ltd. She is responsible for site management of clinical trials and has been actively involved in support and education about clinical and epidemiological study for all clinical staffs.
Informed consent in clinical trials

The Japan Environment & Child Study, Graduate School of Medicine, the Institute for Frontier Medical Sciences, Kyoto University, Japan
Keiko Sato

Patients and their families often report confusion when they are informed by the doctor that “You have two options: Treatment A or Treatment B. Please decide which one you will choose.” Many note that “The doctor spent an hour explaining the options, but I didn’t understand them very well.” Such incidences are quite common, perhaps because the explanations provided by the medical professionals are not structured to emphasize patient understanding. These medical professionals themselves often lack an understanding of the fundamentals such as the purpose of informed consent, why it is necessary, the definition of autonomy, and the necessary content and delivery of the actual explanation. In the present seminar, I wish to review some fundamental aspects of theory and practice as a way to identify components that patients require in order to make an informed decision.

1) Informed consent: what is it, and why is it important?
Informed consent is that given by a patient following an adequate explanation of a medical treatment, representing their agreement to its use. While informed consent is based on the right to autonomy, all medical treatments will likely involve some degree of invasion of the patient. Given that the patient is the one experiencing the pain or suffering, the decision to perform a medical treatment is up to the patient. While informed consent is based on this rather self-evident rationale, in order to make an informed decision, assistance from medical professionals is still required, as the patient often lacks an adequate understanding of the nature of the treatment and clinical trials. As such, patients do not decide the specific method of treatment; rather, they decide how they want to live after receiving treatment. The physician’s own knowledge and experience are then used to devise and propose methods toward the realization of this overarching goal. Therefore, after explaining objectives, content, risks, and benefits of a treatment, the physician must also carefully listen to the patients in order to understand the patient’s values and what they consider good versus bad. With that in mind, the physician must then propose and discuss treatments deemed optimal for the particular patient, based on the physician’s own expertise. Patients experience confusion when told, “Please choose Treatment A or Treatment B” because this decision cannot be made, and many patients feel that the medical professional is acting irresponsibly in demanding that the patient make the decision.

2) When obtaining consent to participate in a clinical trial, what should be explained, and how?
Clinical trials are conducted to determine clinically unresolved issues. Therefore, would-be participants must decide whether or not to participate after they have first been given a thorough explanation (including experimental details) and fully understand what is involved. To this end, patients must visualize the big picture view of their physical condition, types of treatment to come, the reason for the clinical trial, and any implications of their participation (or the lack thereof). The inherent logic underlying clinical trials requires an understanding of what will be done, why this will be done, how (specifically) this will be done, and the significance of trial completion. These elements need to be arranged into a narrative and told as a story. In this seminar, we will review methods of explanation, using randomized controlled clinical trials of anti-cancer therapies as examples.

Biosketch

Keiko SATO is Associate Professor at the Japan Environment & Child Study, Graduate School of Medicine and Adjunct Associate Professor at the Institute for Frontier Medical Sciences, Kyoto University. Her research interests include empirical research in human subjects protection in clinical research, decision-making processes, and ethical issues in regenerative medicine.
Cervical cancer is the commonest cancer among women in developing countries, largely due to the failure to establish secondary prevention programs for screening. Over 80% of the new cases of cervical cancer per year are diagnosed in developing countries and 85% of the deaths. While alternative methods and approaches to cervical cancer prevention, such as Visual Inspection with Acetic Acid and HPV DNA testing in a ‘screen and treat’ scenario have been evaluated in low resource settings, upscaling these interventions to reach an acceptable level of coverage and impact on cervical cancer reduction have not materialised. HPV vaccination offers many advantages over secondary prevention strategies, particularly as most developing countries are ‘vaccine friendly’. To date a number of very successful programs for HPV vaccination have been established and many more will be up and running due to support from the GAVI alliance. As both commercially available vaccines are prophylactic it is recommended that girls aged 9–12 years old be the target for the initial implementation of HPV vaccination and to be cost-effective, at least 80% of eligible girls need to be vaccinated. There is some evidence emerging that two doses rather than three may be sufficient although long term outcomes of this approach are awaited. Vaccine implementation in developing countries is unlikely to succeed without strong political will, strengthened health infrastructure and affordable vaccination costs.

**Biosketch**

**Personal Statement:**
This grant will contribute to developing models of clinical medical education in women’s health at both undergraduate and post-graduate levels in Africa. I am a clinician and specialist in obstetrics and gynaecology and will contribute in particular through of teaching and research experience in clinical women’s health as well as in community based obstetrics and gynaecology service delivery. I have been directly involved in the the Obstetrics and Gynaecology Department programs for clinical medical education that contribute to both training of health care professionals and developing research capacity in maternal health, in relation to HIV, hypertension, sepsis fever regulation, cervical cancer prevention and reducing the burden of HPV and associated disease (including HPV vaccination strategies) and violence against women. The department of Obstetrics and Gynaecology has extensive links in Africa through the network of contacts with over 400 health professionals in 42 countries in Africa through the organization AORTIC. This will strengthen the building of continental links within this linked award grant and the programmatic award. I have been involved in teaching medical students and specialists in clinical women’s health over a large number of years. This has been aimed at finding feasible models for service delivery in low resources areas such as in Africa. I have been involved in as a principal investigator and co-investigator a number of international grants, including NIH grants, in collaboration with the Women’s Health Research Unit in the area of cervical cancer.

**Professional Experience:**
- 1984: Internship, Groote Schuur Hospital/University of Cape Town
- 1985: Senior House Officer, Red Cross Children’s Hospital, Cape Town
- 1986–1987: Senior House Officer, Department of Obstetrics & Gynaecology, Groote Schuur Hospital, Cape Town
- 1987: Senior House Officer, Department of Medicine, Groote Schuur Hospital, Cape Town
1989–1993 Registrar, Department of Obstetrics & Gynaecology, Groote Schuur Hospital, Cape Town (including fellowship in Gynecologic Oncology)

1994–1997 Specialist, Department of Obstetrics & Gynaecology, Groote Schuur Hospital Cape Town

1997–2005 Associate Professor & Senior Specialist, Department of Obstetrics & Gynaecology, University of Cape Town

2005–Jul 2007 Professor & Senior Specialist, Department of Obstetrics & Gynaecology, University of Cape Town

Aug 2007–Present Professor & Principal Specialist, Department of Obstetrics & Gynaecology, University of Cape Town

Jan 2010 Head of Department
Cervical cancer is the second most common cancer among women in the world. It is being screened via cytology according to the WHO's recommendations for more than 50 years. Cytology based screening have been successful in reducing the incidence and mortality from cervical cancer. However, an organized screening program based on the Pap test is a very complex and difficult public health service to provide. Even if the main barriers for organization of effective screening are overcome, relatively low sensitivity of a single Pap test and a high rate of false negative results remain important shortcomings of cytology based screening. As a result, cervical cancer still occurs in women who regularly attend for screening even in countries with extensive screening programs.

Today, testing for HPV DNA is one of the most intensively studied alternatives to cervical cytology screening. Its role has already been established for the triage of Pap smears with atypical squamous cell changes (ASCUS smears) and follow up after treatment. Although the role of HPV testing in primary screening has still not been clearly defined, the results of many international randomized controlled trials gave promising results. HPV test appeared to be more sensitive than cytology (especially in women aged ≥30 years), it may lengthen the interval between screenings and has better cost–effectiveness.

HPV was detected as the underlying agent of more than 10 types of cancer including cervical, ano-rectal and oro-pharyngeal cancers. Besides its promising results on cervical cancer, HPV tests have shown a prosperous success on oro-pharyngeal cancer's early diagnosis.

Some countries have already included HPV test into primary screening, in different combinations with cytology. The Netherlands is the first country that has been introduced HPV test as a primary test into the organized screening. Mexico, USA, Canada, Finland, India, China, and many other countries have introduced HPV based primary cervical screening either population based or as pilot. Recent cost effectiveness analysis based on a Dutch microsimulation model, concluded that most European countries should consider switching from primary cytology to HPV screening for cervical cancer.

Turkish cervical cancer screening was held up 20 years ago as cytology based. Besides the effort and the experience on it the desirable success in cervical screening couldn't achieved. It had only 20% nationwide coverage rates due to several excuses.

According to many of national and international experts'suggestions HPV testing have been added to the Turkish cervical screening program besides cytology. We are expecting the preliminary results within one year.

Biosketch

Dr. Murat Gultekin is the director of cancer control department of Turkish Ministry of Health. He is a gynaecologic oncologist working in Hacettepe University in Ankara, the capital city of Turkey. He is organizing palliative care and cancer screening–preventive services to be distributed widely across the country. He has published numerous articles in cancer prevention, epidemiology and gynaecologic oncology, and he is the editor of three international textbooks, and also working in the editorial and reviewer boards of some international journals. He is an executive board member in European Society of Gynaecologic Oncology (ESGO), European Network of Young Gynaecologic Oncologists (ENYGO), Middle East Cancer Consortium (MECC) Palliative Care Committee, Women Againsts Cervical Cancer (WACC), International Agency For Cancer Research (IARC), Blacksea Countries Coalition for Cervical and Breast Cancers, Society and Asian Pacific Organization for Cancer Prevention (APOCP).
Management of high grade cervical lesions
and microinvasive cancer

President, ESGO, Institute of Obstetrics and Gynecology Clinical Center of Serbia, Serbia
Vesna Kesic

During the last decade the trend in management of cervical lesions has been directed towards more conservative methods in treatment of CIN. This is the consequence of the better understanding of the biology and natural history of CIN. Today, it is clear that in the spectrum of cervical pathology the line between premalignant lesion and benign lesion can be drawn between CIN 1 and CIN 2 & CIN 3. These two grades of CIN are described as high grade squamous epithelial lesions (H-SIL) to differentiate them from low grade lesions and HPV induced changes (L-SIL).

Low grade lesions affect high proportion of women, they have low risk of progression and significant regression that may occur. Most low grade lesions reflect the expression of HPV infection rather than a true neoplasia. Thus, treatment is unnecessary in many patients with L-SIL because their lesion will regress spontaneously.

Women with biopsy confirmed H-SIL (CIN 2 and 3) have significant risk of disease progression to invasive cancer and should be treated. The expectant management of CIN 2 and 3 with repeat cytology and colposcopy is not acceptable except for:

- pregnant patient
- very young patients with CIN 2

The follow up of these cases is based on colposcopy.

Out patient treatment of CIN shows useful and safe in many patients who would have diagnostic and therapeutic conisation in the past. The techniques of local destruction are easy to perform and require local or no anaesthesia. However, detection of invasive cancer in women previously treated by destructive techniques, limits the value of these methods. This is why the excision is necessary in:

- Unsatisfactory examination
- Large lesions
- Non-correlating cytology & colposcopy
- Recurrent disease

There is no obviously superior conservative surgical technique for treating and eradicating cervical intra-epithelial neoplasia (CIN). However, the excision is preferred because of better histopathological assessment.

Women with adenocarcinoma in situ/Cervical glandular intraepithelial neoplasia (CGIN) can be managed by local excision for women wishing to retain fertility. Incomplete excision at the endocervical margin requires a further excisional procedure to obtain clear margins and exclude occult invasive disease.
Treatment of CIN is generally successful, yet the risk for subsequent development of invasive CC remains higher than for women never having documented CIN. All women treated for high grade CIN, require regular follow-up with cytology and colposcopy.

The rates of recurrence or persistence of CIN after treatment range from 1–21%. Recurrence rate is related to the margin status. Positive cone margins are a risk factor for recurrent disease. It is lower when the margins are clear accounting 29%–12%. In patients with involved margins the recurrence rate is between 22% and 28.9. In majority of cases a recurrent disease is detected within the first 24 months. However, because of the clear evidence of persistent long-term risk for invasive disease, women treated for high grade disease, should be followed for at least 10 years after the treatment.

**Biosketch**

Dr Vesna Kesic finished medical and postgraduate medical studies at the Medical Faculty, University of Belgrade. From 1986–1990, she was specializing in Obstetrics and Gynecology. In 1990 she got a PhD in Gynecologic Oncology, and in 1996 she finished sub-specialization in Oncology, at the same University. Dr Kesic has started her University career in 1992 and in 2005 became the Associate Professor of Gynecology and Obstetrics at the Medical School, University of Belgrade. She achieved full professorship in 2012. From 1992, she has been a member of the Serbian Academy of Medical Sciences and Serbian Scientific Society. Dr Kesic has published 124 articles in international and national journals, was the author of 4 books and 20 chapters in international and national books and was invited lecturer for more than 130 presentations.

Apart from her fruitful work in developing gynecological oncology in her own country, she is particularly active in education, organizing or coordinating colposcopy and gynecological oncology courses and training in Eastern Europe, Middle East, Africa and Asia. From 2006 to 2010, as a Council member of International Society for Gynecologic Cancer (IGCS), Dr Kesic developed the program of workshops and supported meetings and helped organization of 28 events attended by more than 4000 participants. She was running similar activity in the Serbian Society for Gynecologic Cancer (ESGO) and from 2005 by now, 58 Workshops and endorsed meetings were organized under the patronage of ESGO in Central and Eastern European countries. She was the president of the 4th European congress of colposcopy (2007) and 16th ESGO congress (2009), both organized in Belgrade.

Dr Kesic was the principal researcher in the three successfully finished international and participated several national projects. She was also the scientific leader of the pilot project for screening of cervical cancer in Braničevo region, the first organized screening program in Serbia. Now, she is conducting a Ministry of Health project: "Organization of Referral center for cervical cancer" and Ministry of Science project "Cancer and Pregnancy".

Her professional affiliations include membership in the Serbian Medical Society, International Society for Gynecologic Cancer, European Society for Gynecologic Oncology, European Association of Cancer Research and American and British Societies for Colposcopy and Cervical Pathology. She is the founder and past-president of Serbian Society for Gynecologic Oncology. Dr Kesic was the Secretary General of the Yugoslav Society of Colposcopy and Cervical Pathology (1995–2003). Currently, she is the President of Serbian Society for Colposcopy and Cervical Pathology.

From 2005 to 2010, Dr Kesic was a Council member of the International Gynecological Cancer Society. In European Society for Gynecologic Oncology (ESGO), she has been a Council member since 2005 and Chair of the Educational Committee. From October 2013, she is the president of ESGO. International federation of Gynecology and Obstetrics (FIGO) has selected Dr Kesic to receive a FIGO Award in Recognition of Women Obstetricians/Gynaecologists at the XX FIGO World Congress in 2012.
ASGO was founded in 2009 as the principal organization in Asia contributing to the study, prevention and treatment of gynecological cancer. Asian women differ from non-Asians with respect to genetic background, disease presentation, and in particular, the socio-cultural environment. In addition, a large proportion of the global burden of gynecologic cancer remains to be found across the Asian region. For these reasons, the Asian Society of Gynecologic Oncology plays an essential role in understanding, investigating, and resolving regional health problems much like other global and regional societies, such as the International Gynecologic Cancer Society (IGCS), the Society of Gynecologic Oncologists (SGO) and the European Society of Gynecologic Oncology (ESGO). Over 10 Asian countries and societies have approved this aim, and have joined our society as members. In order to carry out our mission, the activities of the ASGO consist of the following: 1) ASGO holds biennial meetings where experts from across Asia meet to discuss the latest advances in Gynecological Oncology treatment and care, as well as hold numerous conferences throughout the calendar year. In addition to the biennial meetings, an International Symposium is held to discuss particular topics. 2) The Journal of Gynecologic Oncology (IF 1.730) is published as the official journal of ASGO. 3) ASGO supports academic meetings held in member countries, by sending speakers. 4) Exchanges clinical and relevant information among sister societies (IGCS, SGO, ESGO etc.). 5) Encourages young physicians to attend the ASGO Biennial Meeting and International Workshops by granting travel expenses. 6) Encourages young physicians to receive training in member countries. Through these activities, ASGO will make a great contribution to improving the quality of life of women living in Asia, by encouraging young physicians to acquire advanced medical techniques, raise their level of research, and improve their ability to communicate with patients.

Biosketch

Education:
Kyushu University School of Medicine, Fukuoka
Doctor of Medicine: 1974

Postgraduate:
Kyushu University Hospital, Fukuoka
Resident in Obstetrics and Gynecology 1974–1975
Kyushu University, Cancer Research Institute, Fukuoka
Fellow in cellular biology 1976–1980
Danish Cancer Research Institute, Aarhus, Denmark
Research Fellow in Radiation Oncology 1980–1981

Academic Appointments:
Kyushu University Hospital, Fukuoka
Junior Faculty Associate of Obstetrics and Gynecology 1981–1982
Assistant Professor of Obstetrics and Gynecology 1982–1993
Associate Professor of Obstetrics and Gynecology 1993–1999
Kurume University School of Medicine
Professor and Chairman of Obstetrics and Gynecology 1999–

Organizations:
Japan Society of Obstetrics and Gynecology, 1974–
   Council member, 1993–
   Cancer Registration Committee, 1997
   Scientific Committee, 1999–
   Director, 2003–
Japan Society of Cancer Research, 1976–
Japan Society of Clinical Cytology, 1982
   Council member, 1993–
Japanese College of Surgeons, 1984–
   Council member, 1993–
Japan Society of Clinical Oncology, 1985–
   Council member, 1993–
Japan Society of Ultrasonics in Medicine, 1988–
International Gynecologic Cancer Society, 1989–
Japan Society of Gynecologic Oncology, 1990–
   Executive Board Member, 1998–
   Chairman of the board, 2012–
International Federation of Gynecology and Obstetrics
   Executive Board Member, 2008–2009
Asian Society of Gynecologic Oncology
   Council member, 2008–
   President-elect, 2009–2011
   President, 2011–
In 2008, approximately 5.1 million cancers (48% of the new cases worldwide) were diagnosed in Asia, and 4.1 million Asian people (54% of cancer death worldwide) were dead in a year. Each year cancer kills more people globally than HIV, TB, and Malaria combined, and Asia's prevalence of cancer deaths may climb 45% to 163 per 100,000 people by 2030, from about 112 per 100,000 in 2005. Regrettably, in Asia, more than 70 per cent of all cancer deaths are in low and middle income countries. Besides the economic and social issues, we, Asian people, have another critical issue in cancer treatment. The best (or better) treatment for us, Asian people, is still undetermined due to very few clinical evidences, although a number of clinical studies have clearly demonstrated ethnic diversity in drug response and toxicity. The increasing evidence of genomics and pharmacogenomics has gradually elucidated genomic information underlying the ethnic differences. In light of the UN Summit Political Declaration on Non-communicable Diseases, the JSCO (Japan Association of Clinical Oncology) has declared its intention to strive for improvements in cancer care on the basis of international cooperation, and as one practical measure, has also begun to take steps toward the establishment of a new council to act as an academic center for the development of cancer care in Asia. The mission, the structure, and the latest status of Faco (Federation of Asian Clinical Oncology) will be introduced.

Biosketch

1981 M.D. Hiroshima University
1987 Ph.D. Hiroshima University
1987–1994 Research Associate (Assistant Professor), Department of Surgery, Research Institute for Radiation Biology and Medicine, Hiroshima University
(1988–1990) Researcher, Department of Molecular Pharmacology, Instut de Cancerologie et d'immunogenetique, Villejuif, France
1994–1996 Lecturer (Assistant Professor), Department of Surgical Oncology, Research Institute for Radiation Biology and Medicine, Hiroshima University
1996–2002 Professor, Department of Biochemistry & Biophysics, Research Institute for Radiation Biology and Medicine, Hiroshima University
2002–2007 Professor, Department of Translational Cancer Research, Research Institute for Radiation Biology and Medicine, Hiroshima University
2007–2010 Professor, Translational Research Center, Saitama Medical University International Medical Center
2010–2012 Professor, Director, Research Institute for Development of Therapeutics, Saitama Medical University
2011– Chairman, Board of Directors, Japanese Society of Clinical Oncology
Chairperson, Federation of Asian Clinical Oncology
2012– Professor, Department of Molecular Pharmacology and Oncology, Gunma University Graduate School of Medicine
The goal of radiotherapy is to accomplish the improvement of survival and QOL of patients with cancer. There are two limiting factors to achieve this goal in the current radiotherapy. One is insufficient biological effects of radiotherapy, and the other is unsatisfactory dose localization techniques. To overcome these problems, several strategies have been investigated which are basically divided into 2 approaches, one is biological one and the other is physical one. The physical approach which allows us to irradiate the target as most physically localized as possible has been introduced into clinics in recent years. Image-guided radiotherapy (IGRT), Intensity modulated radiotherapy (IMRT) are those modalities which have highly useful in the treatment of gynecological tumors. The current approaches intensively investigated are 4 dimensional treatment technologies which can compete with the movement of tumors and the normal tissues, and the use of molecular imaging in radiation treatment planning. With utilization of those innovative technologies individualization of radiation therapy will be realized.

Biosketch

Professional experiences:
1977 graduated from Kyoto University School of Medicine
1984 Assistant Professor, Department of Radiology, Faculty of Medicine, Kyoto University
1987 Visiting Assistant Professor, Department of Radiation Oncology, Stanford University
1988 Assistant Professor, Department of Radiology, Faculty of Medicine, Kyoto University
1992 Associate Professor, Department of Radiology, Faculty of Medicine, Kyoto University
1995-present Professor and Chairman, Department of Radiation Oncology & Image-applied Therapy, Kyoto University Graduate School of Medicine
2006-2010 Director, Kyoto University Nanomedicine Merger Education Unit
2007-2009 Director, Kyoto University Hospital Cancer Center

Academic society activities
President: Japanese Board of Cancer Therapy
Executive Board members
The Japanese Association for Molecular Targeting Therapy of Cancer
Japanese Society of Molecular Imaging
Past President: Japanese Society for Therapeutic Radiology and Oncology

Awards
1) Award of Minister of Economy, Trade and Industry for "Development of High-precision Radiotherapy System" 2008
2) Prize of Komei-Nakayama Award of Japan Society of Clinical Oncology 2009
3) Prizes for Science and Technology of the Commendation for Science and Technology by the Minister of Education, Culture, Sports, Science and Technology, 2013
While there are few, highly effective chemotherapies against human cancer, targeting essential growth drivers that tumor cells cannot live without would be one of the ideal ways to treat this intractable disorder. To identify such essential drivers, we developed a highly sensitive functional screening system with retroviral cDNA expression libraries. Application of this technology to a non–small cell lung cancer (NSCLC) specimen identified the EML4–ALK fusion oncogene. Wild-type ALK encodes a receptor–type protein–tyrosine kinase, but a small inversion within the short arm of chromosome 2 leads to the production of a constitutively active, highly oncogenic fusion kinase.

In response to such observation, a large number of ALK inhibitors are currently under development or clinical trials, and a marked efficacy of the first inhibitor (crizotinib) was already reported with a response rate of ~80%. Only 4 years after our initial discovery of EML4–ALK, crizotinib was approved, as of August 26, 2011, as a therapeutic drug against NSCLC by U.S. FDA. Furthermore, we discovered secondary mutations within EML4–ALK that confer resistance to ALK inhibitors, one of which is the "gate-keeper" position corresponding to T790 in EGFR. Elucidation of the resistant mechanism swiftly led to the development of the second generation of ALK inhibitors, many of which are already under clinical trials. Our series of translational research will, thus, drastically change the life of hundreds of thousands of NSCLC patients in the coming decade.

Biosketch

Professor Mano graduated from the School of Medicine, The University of Tokyo, Japan in 1986. During his career as a physician, Professor Mano became interested in molecular pathogenesis of human cancers, and discovered TEC protein–tyrosine kinase. He then became Professor at Division of Functional Genomics, Jichi Medical University in 2001 and discovered EML4–ALK lung cancer oncogene in 2007. Professor Mano has moved to the current position in 2013. He has received many awards for his scientific achievements, such as The Medal of Honor with Purple Ribbon from The Emperor of Japan (2012) and The Keio Medical Science Prize (2012).
**Educational Lecture on Ovarian Cancer**

**Screening and early detection of ovarian cancer: Is it feasible?**

Direct of Gynecologic Oncology, University of Washington, Seattle Cancer Care Alliance
Seattle, USA

Barbara Goff

Even in countries with a high incidence of ovarian cancer, it is estimated that in women over age 50 only 30-40 per 100,000 will develop the disease. This translates into one cancer for every 2,500-3,000 women. If a screening test has even a 1% false positive rate then 25-30 women could potentially undergo surgery for every case of ovarian cancer detected. Several large prospective randomized trials to evaluate screening for ovarian cancer have been completed and have shown that screening with an annual TVS and CA125 is ineffective for earlier diagnosis or reduction of mortality. In the US based PLCO trial, 15% of women who underwent a false positive screen and had surgery suffered significant complications. These studies have also confirmed that TVS should predominantly be used as a secondary screen because of its poor positive predictive value (PPV) to detect ovarian cancer. Analysis of serum samples prior to diagnosis of ovarian cancer in the PLCO trial found that CA125 is the single best marker for early detection of ovarian cancer. The UK screening trial using serial measurements of CA125 with the risk of ovarian malignancy algorithm (ROMA) has shown promise with good sensitivity and PPV in the prevalence screen. In addition, approximately 50% of screen detected cancers were diagnosed in early stages. However, final results are pending to assess the possible reduction in mortality as well as cost effectiveness and feasibility of screening with serial CA125s. Meanwhile retrospective analysis of the PLCO serum specimens using this approach was not found to be potentially effective.

In 2013, there is not yet a cost effective method to screen for ovarian cancer. Until such a test is developed we must strive to identify women at increased genetic risk so that prophylactic surgery can be offered. We must also educate women and practitioners about symptoms associated with this disease.

**Biosketch**

Dr. Barbara Goff received her MD at the University of Pennsylvania and did her residency at Harvard Medical School. She did her gynecologic oncology fellowship at the Massachusetts General hospital and then joined the faculty at the University of Washington in Seattle. She became the director of the division of gynecologic oncology at the University of Washington and Seattle Cancer Care Alliance in 2005. Her major research focus has been in early detection of ovarian cancer, surgical skills training, novel therapeutics and patterns of care, cost effectiveness, and quality outcomes research in the treatment of ovarian cancer. Dr. Goff became the president of the Society of Gynecologic Oncology and the Foundation for Gynecologic Oncology in 2013. She lives in Seattle, Washington with her husband who is also a gynecologic oncologist and their 2 children.

**Academic appointments**

Instructor:
Assistant Professor:
Obstetrics and Gynecology University of Washington School of Medicine (1993–1997)
Associate Professor:
Obstetrics and Gynecology University of Washington School of Medicine (1997–2002)
Adjunct Professor:
Surgery University of Washington School of Medicine (2002–Present)
Professor:
Obstetrics and Gynecology University of Washington School of Medicine (2002–Present)
The standard treatment of epithelial ovarian cancer (EOC) is complete surgical staging and maximal cytoreductive surgery, followed by adjuvant chemotherapy with taxane/platinum. Standard surgery includes exploration of the entire peritoneal cavity, multiple peritoneal cytology, multiple peritoneal biopsy, total hysterectomy, bilateral salpingo-oophorectomy, pelvic and para-aortic lymph node dissection, and omentectomy. About 3–17% of EOCs occur in women aged <40 years, with about 7–8% of stage I EOCs occurring in women aged <35 years who want to preserve their fertility. Considering the high cure rate in patients with stage I EOC, many of these patients undergo fertility-sparing surgery, defined as preservation of ovarian tissue in one adnexa and the uterus. Recent changes in attitudes toward radical oncologic surgery have suggested that the benefits of surgery should not be evaluated simply with respect to disease control, but also with respect to functional end results that may affect patient quality of life. Fertility-sparing surgery is becoming an important issue in the surgical management of younger women with early-stage EOC. Although the oncologic and reproductive outcomes after fertility-sparing surgery are relatively well established in women with borderline ovarian tumors and malignant ovarian germ cell tumors, they have not yet been defined in women with early-stage EOC. Here, therefore, we present recent update related to the oncologic and reproductive outcomes after fertility-sparing surgery in young women with early-stage EOC and propose acceptable indications for fertility-sparing surgery in these patients.
Samsung Medical Center
Sungkyunkwan University Schools of Medicine, Seoul, Korea
2009.3~2013.3
Assistant Professor
Department of Obstetrics and Gynecology
Samsung Medical Center
Sungkyunkwan University Schools of Medicine, Seoul, Korea
2013.3~present
Associate Professor
Department of Obstetrics and Gynecology
Samsung Medical Center
Sungkyunkwan University Schools of Medicine, Seoul, Korea
2013.3~present
Secretary-General Organizing Committee of Asia-Pacific Association of Gynecologic Endoscopy 2013
The "standard treatment" for platinum-resistant ovarian cancer is monotherapy with cytotoxic agents such as pegylated liposomal doxorubicin (PLD), topotecan, or gemcitabine. Objective response rate (ORR) by "standard treatment" is around 5–10%. Definitely unmet medical needs exist.

Two strategies were tested. The one is "combination of two cytotoxic agents" and the other is "combination of cytotoxic agent and targeting agent". The former strategy may have failed, at least in platinum-resistant disease. Six completed prospective trials, OVA301, CARTAXY, ASSIST−3, ASSIST−5, NOGGO, and Japan Clinical Oncology Group (JCOG) 0503 will be reviewed. Two trials are mentioned in this abstract, OVA301 and JCOG0503.

OVA301 compared trabectedin + PLD to PLD monotherapy. In platinum-resistant subset, PFS was 4 versus 3.7 months (HR = 0.95; p = 0.75), respectively. Promising results of PFS (7.4 versus 5.5 months; HR = 0.65) & OS (23 versus 17.1 months; HR = 0.59) in "partially platinum-sensitive" subset leads to INOVATYON trial.

JCOG 0503 study tested irinotecan and oral etoposide (topoisomerase I and II inhibition). Efficacy was moderately promising. ORR, which was 23.3%, did not meet preplanned boundary for further phase3. One patient had achieved CR, and she is still progression free for more than 2 years. Considering some safety concerns, JCOG decided not to develop this regimen further.

The later strategy may succeed. Data of some promising agents such as bevacizumab (AURELIA) and trebananib (TRINOV4−1) will be discussed. Other promising agents including sorafenib, pertuzumab, nintedanib, vintafolide, saracatinib, and afiblercept will be also reviewed.

Biosketch

Training:
1999–2001 Residency; Kyoto Prefectural University of Medicine, Kyoto
2001–2004 Fellowship; National Cancer Center Hospital, Tokyo, Japan
2004–2006 Chief Fellowship: (Breast & GYN Oncology) National Cancer Center Hospital

Hospital Appointments:
2006– Chief of the Division of Medical Oncology and Director of the Ambulatory Chemotherapy Center Hyogo Cancer Center
The management of advanced epithelial ovarian cancer remains challenging. Despite the initial high response rates following debulking surgery and platinum-taxane based chemotherapy, the majority of these women will relapse and eventually die of the disease. Efforts to improve treatment outcomes include optimizing the timing of surgery (Upfront debulking surgery versus Neoadjuvant chemotherapy), the chemotherapy scheduling (Dose-dense chemotherapy) and administration (Intraperitoneal versus Intravenous).

Further improvements in treatment outcomes will likely come from the incorporation of novel molecular targeted therapies and the appreciation that epithelial ovary cancer is not a single disease entity but 5 distinct disease entities—High grade serous (70%), Clear cell (10-25%), Endometrioid (10%), Mucinous (3%) and Low-grade serous (<5%); each with its unique epidemiological, molecular alterations and clinical behavior and hence warrants histologic-directed therapy and clinical trials.

Biosketch

Dr Lim Sheow Lei is a consultant medical oncologist at Kadang Kerbau Women’s and Children’s Hospital (Singapore) with specialist interest in gynaecological cancers. Dr Lim received her postgraduate medical oncology training in the UK. Between 2005–2006, she undertook a research fellowship at the Institute of Cancer Research in London, conducting translational research into the epigenetic aberrations of ovarian cancer, which led to the award of a M.D. Dr Lim believes in advancing cancer care through clinical trials. She is the principal investigator of several clinical trials for gynaecological cancers. She has also co-authored several clinical and research papers in gynaecological cancers.
Psychological support for patients with ovarian cancer

Department of Obstetrics and Gynecology Clinical Center of Serbia, Serbia
Vesna Kesic

Treatment of ovarian cancer is usually prolonged and difficult, however in large number of cases it is also highly successful. Earlier diagnosis has contributed to better survival owing to which, thousands of women worldwide are cured or live with ovarian cancer for years.

Ovarian cancer is particularly delicate type of the disease, influencing not only physical capacities, psychological and social life of women, but also her future reproductive capacities. Therefore, psychological aspect of care of patient with ovarian cancer is particularly important. It is estimated that one fourth of the patients diagnosed with malignant diseases are experiencing some form of psychological disorder. Recognition and help in cases of anxiety and depression, which are naturally developing in patients affected with malignant diseases are important parts of treatment aimed at improvement of their quality of life.

Psycho-oncology is a new subspecialty concerned with psychological responses of patients and their family members to cancer, as well as the factors that may influence the disease. It is dealing with understanding and treatment of psychosocial, emotional, spiritual, existential and practical aspects of the malignant diseases, as well as the aspects related to quality of life during all stages of the disease and survival. The primary objective of the psycho-oncology is to offer an integral approach to all cancer patients. This is an approach focused on the individual as a whole, which addresses a range of highly diverse needs.

Collaboration of different specialities, such as surgery, gynecology, medical oncology, radiotherapy, psychiatry, psychology, palliative management, rehabilitation medicine, epidemiology, immunology, ethics and research is essential in achieving the optimal care for ovarian cancer patient.

Complete information on all the aspects of the disease, both medical and psychosexual may significantly contribute to prevention or alleviation of the psychological problems in the affected women and their family members. Assistance to patients in accepting treatment necessitates absolute sincerity, the most accurate medical information and detailed advice. Effective communication, which includes active listening, expression of empathy, detection and responding to emotional signs and sensitivity toward the experience of the patient affected with a malignant disease lead to improvement of psychological adjustment, compliance with the treatment plan and satisfaction with care. Compliance with certain treatment option and careful monitoring are basic requirements for successful treatment.
Biosketch

Dr Vesna Kesic finished medical and postgraduate medical studies at the Medical Faculty, University of Belgrade. From 1986–1990, she was specializing in Obstetrics and Gynecology. In 1990 she got a PhD in Gynecologic Oncology, and in 1996 she finished sub-specialization in Oncology, at the same University. Dr Kesic has started her University career in 1992 and in 2005 became the Associate Professor of Gynecology and Obstetrics at the Medical School, University of Belgrade. She achieved full professorship in 2012.

Dr Kesic is one of the leading specialists in gynecological oncology in her country. She has been trained in Obstetrics and Gynecology in UK, USA and Norway. In 2002 she has been nominated the Serbian Ministry of Health Adviser for prevention and early detection of cervical cancer. From 2008 she is the president of the National Advisory Board for cervical cancer prevention. In 2008 she became a member of Serbian Academy of Medical Sciences and Serbian Scientific Society. Dr Kesic has published 124 articles in international and national journals, was the author of 4 books and 20 chapters in international and national books and was invited lecturer for more than 130 presentations.

Apart from her fruitful work in developing gynecological oncology in her own country, she is particularly active in education, organizing or coordinating colposcopy and gynecological oncology courses and training in Eastern Europe, Middle East, Africa and Asia. From 2006 to 2010, as a Council member of International Society for Gynecologic Cancer (IGCS), dr Kesic developed the program of workshops and supported meetings and helped organization of 28 events attended by more than 4000 participants. She was running similar activity in European Society for Gynecologic Cancer (ESGO) and from 2005 by now, 38 workshops and endorsed meetings were organized under the patronage of ESGO in Central and Eastern European countries. She was the president of the 4th European congress of colposcopy (2007) and 6th ESGO congress (2009), both organized in Belgrade.

Dr Kesic was the principal researcher in the three successfully finished international and participated several national projects. She was also the scientific leader of the pilot project for screening of cervical cancer in Branićevo region, the first organized screening program in Serbia. Now, she is conducting a Ministry of Health project: "Organization of Referral center for cervical cancer" and Ministry of Science project "Cancer and Pregnancy".

Her professional affiliations include membership in the Serbian Medical Society, International Society for Gynecologic Cancer, European Society for Gynecologic Oncology, European Association of Cancer Research and American and British Societies for Colposcopy and Cervical Pathology. She is the founder and past-president of Serbian Society for Gynecologic Oncology. Dr Kesic was the Secretary General of the Yugoslav Society of Colposcopy and Cervical Pathology (1995–2003). Currently, she is the President of Serbian Society for Colposcopy and Cervical Pathology. From 2006 to 2010, dr Kesic was a Council member of the International Gynecological Cancer Society. In European Society for Gynecologic Oncology (ESGO), she has been a Council member since 2005 and Chair of the Educational Committee. From October 2013, she is the president of ESGO International federation of Gynecology and Obstetrics (FIGO) has selected Dr Kesic to receive a FIGO Award in Recognition of Women Obstetricians/Gynaecologists at the XX FIGO World Congress in 2012.
Role of metabolic syndrome in endometrial cancer and its precancerous diseases

Department of Gynecology, Obstetrics and Gynecology Hospital of Fudan University, China, Shanghai Key Laboratory of Female Reproductive Endocrine Related Diseases, China, Department of Gynecology, Shanghai First People’s Hospital Affiliated Shanghai Jiao Tong University, China

Xiaojun Chen, Weiwei Shan, Chengcheng Ning, Xuezhen Luo, Qiongjie Zhou, Chao Gu, Zhenbo Zhang

Accumulating evidence suggested that metabolic syndrome or insulin resistance is one of the independent risk factors in endometrial cancer. But the role of metabolic syndrome in endometrial cancer remained unclear.

In our prospective cross-sectional clinical study, we evaluated metabolic syndrome in 275 subjects suffering from endometrium disordered proliferation (DPE), hyperplasia (EH) or endometrial cancer (EC). 39 normal cases were used as control. We found that serum insulin level was correlated with DPE, EH and EC compared with control group. The risk of endometrial hyperplastic diseases increased when HOMA-IR (homeostasis model assessment–insulin resistance) was ≥ 2.95. The odds ratio for DPE, EH and type I EC were 10.041, 9.288 and 43.231 respectively. These results indicate that insulin resistance is an early event in the development of endometrial cancer.

There have been several studies investigating the possible mechanism of insulin resistance in the development of endometrial cancer. High levels of insulin induced by insulin resistance have been found to exert direct and indirect effects that contribute to the development of endometrial cancer. Our study showed that chronic inflammation caused by insulin resistance might also play a key role in development of endometrial cancer. IHC found that macrophage infiltration increased positively with endometrial hyperplastic disease. In vitro study found that monocyte cell line THP-1 promoted type I endometrial cancer cell proliferation after being induced to type M2 tumor-associated–macrophages (TAMs). This effect was strengthened after adding estradiol at a physiological dose (10–9M); and weakened remarkably when estrogen receptor–α inhibitor (ICI 182,780) was added. The expression of ERα and CylinD1 in Ishikawa and Hec-1A cell lines was upregulated when co-cultured with TAMs conditional medium. The results suggest that insulin resistance induced chronic inflammation might increase estrogen sensitivity in endometrium which promotes endometrial carcinogenesis.

Biosketch

Education & Experience:
1992.9–1997.6 Shanghai Medical University (bachelor degree for clinical medicine) Shanghai, China
1997.9–1999.9 Graduate School of Shanghai Medical University Ob&Gyn Hospital (M.S.), Shanghai, China
1999.9–2002.6 Graduate School of Fudan University Ob&Gyn Hospital (M.D.& Ph.D.), Shanghai, China
2005.4–2006.3 Visiting scholar at Shinshu University Japan. Research in gynecological oncology. (Sasakawa fellowship)
Positions and Employment:
1999.9–2002.9 Medical Residency, Ob&Gyn Hospital, Fudan University
2002.10–2008.6 Instructor, Ob&Gyn Hospital, Fudan University
2007– Assistant professor, Shanghai Medical College, Fudan University
2008.6– Associate professor, Obstetrics & Gynecology Hospital, Fudan University
2008.7–2010.7 Manager, Administrative office, Obstetrics & Gynecology Hospital
2010.8 Vice president, Obstetrics & Gynecology Hospital, Fudan University

Other professional experience:
2009–2012 President of young medical doctor group, Ob&Gyn Association, Chinese Medical Association Shanghai Branch
2012– Young committee member, Gynecological Oncology Group, Chinese Cancer Association
2013– Committee member, Gynecological Oncology Association, Chinese Medical Association Shanghai Branch
Endometrial cancer is a common gynaecological cancer worldwide. There are two major types of endometrial cancer exhibiting different genetic and clinicopathological features. About 80% of endometrial cancers show endometrioid differentiation and are designated as type I carcinomas. They are often preceded by premalignant endometrial hyperplasia related to excessive oestrogenic stimulation. Type II carcinomas are poorly differentiated or of non-endometrioid differentiation (serous or clear cell types). They are not oestrogen driven, often arise in a background of atrophic endometrium and exhibit more aggressive clinical course.

In Hong Kong, as in many Asian countries, a remarkable increase in the incidence of endometrial carcinoma is observed. In our hospital based analysis, the increase in incidence of endometrial cancer in Hong Kong was particularly significant in the type I cancer category.

The endometrial hyperplasia schema is currently the most widely used classification system for premalignant lesions of type I endometrioid adenocarcinoma. The endometrial intraepithelial neoplasia (EIN) diagnostic schema has also been introduced as an alternative reporting nomenclature for type I precursors. For type II uterine serous carcinoma, endometrial intraepithelial carcinoma (EIA) refers to lesions without stromal invasion while lesions with a lesser degree of atypia may be described as endometrial glandular dysplasia. Putative precursor lesions have also been described for the rare clear cell carcinoma of endometrium.

It is important to understand premalignant lesions of endometrial carcinoma. Such knowledge will enable timely diagnosis and therapeutic clearance of such precursor lesions and endometrial cancer prevention.

Biosketch

Current Position:
- Clinical Professor, Department of Pathology, The University of Hong Kong
- Honorary Consultant, Queen Mary Hospital
- Honorary Professor, Department of Obstetrics and Gynaecology, The University of Hong Kong
- Director of Cervical Cytology Screening Laboratory and University pathology Laboratory (Molecular Pathology), The University of Hong Kong
- Chief of Service, Department of Pathology, HKU–Shenzhen Hospital
- Vice President, Hong Kong College of Pathologists
- Ex-President, Hong Kong Society of Colposcopy and Cervical Pathology
- Council Member, International Federation for Cervical Pathology and Colposcopy
- Directors-at-Large (Asia), World Association of Societies of Pathology and Laboratory Medicine (WASPalM)
- Adviser to Executive Board, Asian Oceania Research on Genital Infections and Neoplasia
Atypical polypoid adenomyoma: Precursor of cancer?

Department of Health Sciences, Graduate School of Medical Sciences Kyushu University, Japan
Tsunehisa Kaku

We collected cases with atypical polypoid adenomyoma (APAM) of the uterus, reviewed the clinicopathological features, and discussed the clinical management and possibility of precursor of endometrial cancer.

The collected cases included cases in which APAM was suspected and cases in which it was difficult to make the differential diagnosis from APAM, as well as cases that had been diagnosed and treated as APAM in the tumor registry of the Japan Clinical Oncology Group. A total of 48 cases were collected, and 29 of them were diagnosed as APAM as a result of the central pathological review.

The mean age of the patients was 38 years (range, 22–58). Histologically, APAM is biphasic polypoid lesion composed of endometrioid type glands in a myomatous or fibromyomatous stroma. In some cases, there is significant glandular crowding with a back–back architecture and stromal exclusion, such that there are foci, which are virtually indistinguishable from grade I endometrioid adenocarcinoma. Squamous metaplasia was present in 19 cases (65.5%), and well-differentiated endometrioid adenocarcinoma coexisted in 5 cases (17.2%).

There were recurrences in 5 (23.8%) of the 21 cases in which fertility was preserved. All patients were alive after primary treatment (a mean follow-up period was 39.6 months; range, 1–202). The clinical outcome of APAM is benign. However, differential diagnosis should be performed because of its histological similarity to invasive endometrioid adenocarcinoma and the possibility of coexistence with endometrioid adenocarcinoma.

Biosketch

MD, Kyushu University, Japan 1978; PhD, Kyushu University, Japan 1984
Obstetrics and Gynecology training at Fukuoka Red Cross Hospital and Kyushu University Hospital, Japan
Anatomic Pathology training at Kyushu University, 1980–1984
Faculty position at Department of Obstetrics and Gynecology at Kyushu University, 1985–1989, 1990–1999 (Assistant Professor)
Visiting Research Fellow at George Washington University, 1989–1990
Faculty position at Department of Health Sciences at Kyushu University, 1999–2001 (Associate Professor), 2001–present (Professor)
Publications: over 100 peer-reviewed articles including 50 in English
Current duties include: Council member of Japan Society of Gynecologic Oncology, and Japan Society of Clinical Cytology.
Standard management of patients with High–Intermediate Risk (HIR) endometrial carcinoma including hysterectomy with routine pelvic and para–aortic lymphadenectomy followed by pelvic radiation therapy was questioned by ASTEC and CONSORT trials. While criticism on the two prospective randomized trials remained on the limited pelvic lymphadenectomy, failure to perform para–aortic lymphadenectomy, and selection of adjuvant therapies, these studies suggested systematic lymphadenectomy should probably be reserved for patients with HIR endometrial carcinoma. Mariani from Mayo Clinic showed that 22% of patients with these high–intermediate risk factors had positive lymph node metastasis. A confirmation study by Milam on Lap 2 trial showed that patients with low risk factors (grade 1–2, <50% invasion, and tumor <2cm had an extremely low risk (0.8%) of lymph node metastasis. This confirmed that systemic lymphadenectomy is not warranted in patients with low risk factors. Retrospective studies from Mariani and SEPAL studies demonstrated improvements in patients who underwent paraaortic lymphadenectomy for stage IIIC2 diseases. Before we have additional information from the ongoing trials, selective lymphadenectomy is recommended for patients with HIR endometrial carcinoma.

The benefits of adjuvant radiation therapy were evaluated in both GOG study 99 and PORTEC I and II trials. The selection for HIR in these two trials was different. None of the two studies demonstrated survival benefits for patients who had received external radiation therapy vs no additional treatments after hysterectomy with or without lymphadenectomy. An ongoing GOG study 249 randomizes HIR patients between vaginal cuff brachytherapy followed by 3 cycles of paclitaxel and carboplatin vs pelvic radiation. This study is done to determine the roles of chemotherapy and radiation therapy. A different PORTEC 3 trial randomizes these patients between external radiation vs external radiation with concurrent and adjuvant chemotherapy. The addition of systemic chemotherapy has become an important part of the adjuvant therapy for patients with high–intermediate risk factors.

Biosketch

Dr. Linus Chuang is an Associate Professor in the Division of Gynecologic Oncology at the Icahn School of Medicine at Mount Sinai. He is the Director of Gynecologic Oncology at Sound Shore Medical Center and Director of the Division and Fellowship Program of Minimally Invasive and Robotic Surgery. After graduating from Kaohsiung Medical College in Taiwan, he completed his residency training in Obstetrics and Gynecology and his fellowship training in Gynecologic Oncology at the University of Texas MD Anderson Cancer Center. He was the Director of Gynecologic Oncology at the New York Medical College prior to assuming his current position at Mt. Sinai School of Medicine. He is the current Chair of the International Committee of the Society of Gynecologic Oncology. His research interests include innovative surgical management and molecular markers of endometrial cancer, and global cancer health programs.
Uterine carcinosarcomas (MMMT—malignant mixed Müllerian tumours) are highly aggressive, rare, biphasic tumors composed of epithelial and mesenchymal elements believed to arise from a monoclonal origin. Surgery ( Called—Cytoreduction or Debulking) is the first step. It is very important to remove as much tumor as possible as early as possible. While hysterectomy with bilateral salpingo-oophorectomy remains the mainstay treatment, high rates of recurrence and metastases suggest a need for lymphadenectomy and postoperative adjuvant treatment. There are no established consensus guidelines for therapeutic patient management. Though well recognized that it improves locoregional control, the role of radiation in improving overall survival outcomes remains undecided. Although various combinations of chemotherapy have been explored, an optimal therapeutic modality is yet to be determined. Two type of Chemo given include: the Cisplatin and Ifosfamide group and the Carboplatin and taxol group. Carboplatin and taxol seem to be most often chosen recently possibly because it is seen to be less harsh on the system. As overall survival rates have not improved in thirty years, it is suggested that targeted chemotherapy and/or a multimodality approach may yield better outcomes. This paper provides a summary of the etiopathogenesis of carcinosarcomas (MMMT) limited to the uterus with special emphasis on the controversies in the management of these patients.
How to be less radical in early stage cervical cancer

Department of Obstetrics and Gynecology, University of Melbourne. Australia
Michael A. Quinn

It is now 115 years since Ernst Wertheim described his radical abdominal operation for cancer of the cervix. Reduction in the radicality of the procedure has been slow with a move only in the 1960s to reduce the parametrial and utero-sacral dissection (Type 2 Piver–Rutledge) and, with the success of screening leading to the diagnosis of smaller volume cancers, the idea in the 1990s that trachelectomy, either abdominal or vaginal, can be safely adopted in some cases allowing for future pregnancies.

This presentation will concentrate on the risk of parametrial involvement in low risk cases, will argue for the adoption of simple trachelectomy as a management paradigm, will highlight the need for more information on glandular cancers in this regard and will review the current status of neoadjuvant chemotherapy in larger tumours when fertility is desired.

Biosketch

Current Appointments:
Professor, Department of Obstetrics and Gynaecology, University of Melbourne
Clinical Director Women’s Cancer Research Centre and Consultant Oncology/Dysplasia Unit, Royal Women’s Hospital Melbourne

Editorial Boards:
FIGO Annual Report
International Journal of Gynaecological Cancer
Obstetrics & Gynaecology Communications
Journal of Oncology
Obstetric and Gynecological Research
Clinical Ovarian Cancer
Ovarian Cancer
Journal of Obstetrics and Gynaecology Research

Committees:
Immediate Past-Chair Australian & New Zealand Gynaecologic Oncology Trials Group
Immediate Past-Chair Gynecological Cancer Inter-Group
Co-Chair FIGO Oncology Committee
EUTROC-Member
Radical hysterectomy with pelvic lymphadenectomy (RHPL) is primarily a standard treatment for early-stage cervical cancer. In Thailand, 10 university hospitals provide gynecologic oncology training especially RHPL operation in 2-years fellowship program. The fellows are mainly trained to perform the operation via laparotomy. In Chiang Mai University Hospital, during the period 1997–2012, we have performed 2,023 RHPL operations for service, research and fellowship training in which 94 were laparoscopic approach. Basically, there are 20 steps of the operation which are systematic and simple for teaching the beginners. Several interesting points have been learned from our experience. No parametrial involvement was detected in 58 patients with stage 1A2 cervical cancer. Therefore, these patients may be treated with simple hysterectomy with pelvic lymphadenectomy. We have reported 1253 women with early-stage disease undergoing RHPL, long-term favorable outcome with 10-year recurrence-free survival rate of 90% was achieved. Comparing 570 stage IB1 versus 110 stage IB2 diseases treated primarily with RHPL, significant differences were noted, i.e. pelvic node metastasis (15% vs 23%), parametrial involvement (11% vs 22%), LVSI (49% vs 72%), DSI (42% vs 73%) adjuvant chemoradiation (30% vs 56%) and 5-year disease-free survival (98% vs 83%). We propose that stage IB1 cervical cancer should be further substaged because of the significant difference in loco-regional spread and survival between occult and gross tumors.

Biosketch

Education, Training and Appointments:
2010–present Chairman, RTCOG Gynecologic Oncology Fellowship Training Committee
2010–present Chairman, RTCOG Gynecologic Oncology Committee
2010–present Executive Committee of the Royal Thai College of Obstetricians & Gynaecologists (RTCOG)
2005–2009 Chairman, Department of Obstetrics and Gynecology, Faculty of Medicine, Chiang Mai University
2005 Professor of Obstetrics and Gynecology, Faculty of Medicine, Chiang Mai University
2005 Diplomat Thai Board of Gynecologic Oncology (Thai Medical Council)
1998–present Executive Committee of Thai Gynecologic Cancer Society (TGCS)
1997 Certificate in Gynecologic Oncology (National Cancer Center, Tokyo, Japan)
1990 Certificate in Gynecologic Oncology (M.D. Anderson Cancer Center, Texas, U.S.A.)
1987 Diplomate Thai Board of Obstetrics & Gynecology (Thai Medical Council)
1984 Residency Training in Obstetrics and Gynecology, Faculty of Medicine, Chiang Mai University
1983 M.D. (Chiang Mai University, Chiang Mai, Thailand)
1981 B.Sc. (Chiang Mai University, Chiang Mai, Thailand)
Nerve-sparing radical hysterectomy in the treatment of early cervical cancer

Asan Medical Center, Korea
Dae-Yeon Kim

Cervical cancer is the second most common cancer in women worldwide, and the radical hysterectomy (RH) with pelvic lymphadenectomy is considered to be the cornerstone in the treatment of early-stage cervical cancer. 5-year survival in early stage cervical cancer is 88–97%, and more than 54% of women diagnosed are younger than 50 years of age. However, RH is known to result in negative long-term adverse effects affecting bladder, bowel, and sexual function. Thus, we must take into consideration the quality of life of these patients.

Functional disorders of the lower urinary tract occur in 5–76% of patients, and 25% report severe bowel dysfunction after RH. Up to 25% of women after RH complained of a dry vagina during intercourse and 20% of women suffered from no lubrication at all. With regard to bowel dysfunction, women after nerve-sparing radical hysterectomy have significantly less defecation irregularities as well as fecal incontinence. Moreover, the increase in vaginal blood flow in reaction to erotic stimuli differed strikingly between women after conventional radical hysterectomy compared with nerve-sparing radical hysterectomy.

There were several studies with either observational or comparative data which showed no difference in local recurrence rate, disease-free survival, and overall survival. With respect to radicality of surgery, they also showed no difference in length of the vaginal vault, length of the parametrium, and lymph node counts between surgical techniques. In conclusion, nerve-sparing techniques in radical hysterectomy are safe, and also effective to prevent bladder, bowel, and sexual dysfunction.

References

Educational Lecture on Gynecologic Cancer Surgery [1]


Biosketch

Education:
3/1987~2/1989 Premedical Course, College of Liberal Arts and Science, Seoul National Univ, Seoul, Korea
3/1989~2/1993 College of Medicine, Seoul National Univ, Seoul, Korea (M.D. degree)
3/1996~2/1998 Graduate School, Seoul National Univ, Seoul, Korea (M.S. in Medical Science)
3/2002~8/2005 Graduate School, Seoul National Univ, Seoul, Korea (Ph.D. in Medical Science)

Postgraduate Professional Training:
3/1993~2/1994 Internship, Seoul National University Hospital (SNUH), Korea
5/2001~2/2003 Clinical Fellowship in Gynecologic Oncology, Asan Medical Center, Seoul, Korea
Radical trachelectomy for early stage cervical cancer

Department of Obstetrics and Gynecology, National Taiwan University Medical School and Hospital, Taiwan
Chi–An Chen

The radical trachelectomy is a fertility-sparing procedure that consists of removing the majority of the cervix with the parametrium and the upper portion of the vagina. The oncology outcomes are comparable to those of radical hysterectomy in selected patients; therefore, patients wishing to preserve their fertility who meet the eligibility criteria should be offered this procedure. This procedure is generally recommended for patients with tumor size less than 2 cm, FIGO stage IA1 disease with LVSI, and stage IA2 or IB1 tumors, there should be no endocervical lesion or extension, and workup for metastatic disease should be negative, including the nodal status. Currently no histological type is contraindication, although some may think glandular lesions are more risky.

The caution point in doing radical trachelectomy is the height of the cervical amputation should be as far away from the internal os as possible, usually about 1 cm, as long as a surgical margin of 5 mm. The other point is the preservation of the uterine artery, if it has to be done, ligate the descending branch and preserve the ascending branch of the uterine artery is suggested, but from the data set of our laparoscopic myomectomy, uterine artery ligation may not affect further pregnancy.

The radical trachelectomy can be performed by an abdominal or vaginal approach. The vaginal approach was initially described by Dargent, when performed together with a laparoscopic pelvic lymph node dissection, has been shown to have low morbidity, and good obstetric outcomes. Although the vaginal approach has gained greater popularity due to benefits of minimal invasive surgery, laparoscopic radical trachelectomy and recently robotic radical trachelectomy have been described and performed, however large data sets are not available.

Biosketch

Current position title, institution/departmen, address:
2011—Present Director, Department of Obstetrics and Gynecology, National Taiwan University Medical School and Hospital
2006—2011 Professor, Department of Obstetrics and Gynecology, National Taiwan University Medical School
2012—Present President, Taiwan Association of Gynecologic Oncologist
2007—2013 Standing Council Member, Taiwan Association of Obstetrics and Gynecology

Education (including postdoctoral training):
M.B. Department of Medicine, National Taiwan University, Taipei, Taiwan (Sep. 1972 to June 1979)
Research fellow, Division of Gynecologic Oncology, Department of Obstetrics and Gynecology, Barnes Hospital, Washington University Medical School, St. Louis, USA (July, 1989 to June 1990)
Radical hysterectomy performed after NAC is an accepted approach for patients with locally advanced cervical cancer (LACC) because NAC can lead to clinically significant tumor shrinkage, and thus increase operability. Two phase III trials in patients with LACC showed a survival benefit for patients treated by NAC followed by radical surgery compared with surgery only, radiation therapy only, or sequential chemotherapy and radiation therapy. However, there are no data that show that the use of NAC followed by surgery is equally or more effective than primary chemoradiation.

NAC for fertility sparing treatment is an innovative approach which is potentially quite interesting for many young women affected by bulky cervical cancer. Women with tumors larger than 2 cm (2-5 cm), are traditionally not offered fertility sparing treatment. NAC is given to chemo–reduce the size of the lesion, making it possible for good responders to undergo fertility–sparing surgery after chemotherapy. For these patients it may be suitable to use the more radical, and time–tested, conservative surgical approach to allow for a complete and conservative excision of the residual tumor after neoadjuvant treatment. One study reported use of NAC followed by laparoscopic pelvic lymphadenectomy and vaginal radical trachelectomy (VRT) in seven patients with lesions measuring 3 to 4.5 cm. At 22–month follow–up, there were no recurrences and one patient conceived a pregnancy.

Biosketch

Dr Chen graduated from Hong Kong University with a doctor's degree of gynecologic oncology in 2001 and subsequently received gynecologic oncology training at the Affiliated Hospital of Oxford Medical School, Italy National Cancer Hospital MD Anderson Cancer Center, Memorial Sloan Kettering Cancer Centre. She specializes in gynecologic oncology surgery and gynecological laparoscopic surgery. Aslo proficient with the diagnosis and treatment of CIN and the pain related to gynecologic disease. The main research orientation is the pathogenesis of cervical cancer, especially malignant transformation of cervical cancer cell lines. Dr. Chen took charge the translation of Williams Gynecology (Chinese version) in 2010 and is the subeditor of Chinese Obstetrics and Gynecology (Clinical version).
Cytoreductive surgery for advanced ovarian cancer

Ovarian cancer is the eighth most frequent cancer in women and remains one of the leading causes of deaths caused by female genital tract malignancies worldwide, with approximately 225,500 new cases and 140,200 deaths annually. The majority of patients present with advanced stage disease at the time of diagnosis, which accounts for the high mortality rate. Primary cytoreductive surgery followed by taxane- and platinum-based combination chemotherapy is the mainstay of treatment for women with advanced ovarian cancer. A number of studies have consistently shown that optimal cytoreduction is associated with a significant survival benefit in patients with this disease. The contemporary definition of optimal cytoreduction is generally considered as residual disease (RD) no larger than 1 cm in diameter after primary surgery. The designation of optimal cytoreduction has evolved from RD≤1 cm to no gross RD. There is a growing body of evidence that patients with no gross RD have better survival than those with optimal but visible RD. In order to achieve this, more radical cytoreductive procedures such as radical pelvic resection and extensive upper abdominal procedures are increasingly performed. In this lecture, I would like to introduce cytoreductive surgical procedures required to achieve optimal cytoreduction in patients with advanced ovarian cancer, to analyze the impact of radical pelvic and upper abdominal surgery as part of maximal tumor debulking on the amount of residual tumor and survival rates, and to evaluate the significance of complete cytoreduction leaving no gross RD with regard to survival rates.

Biosketch

Education:
1995  MD at Ajou University School of Medicine, Suwon, Korea
2000  MS at Ajou University School of Medicine, Suwon, Korea
2010  PhD at University of Ulsan College of Medicine, Ulsan, Korea

Post Doctorate Training:
Residency
1997–2001 Obstetrics and Gynecology, Ajou University Hospital, Suwon, Korea

Fellowship
2004–2005 Gynecologic Oncology, Ajou University Hospital, Suwon, Korea
2005–2006 Gynecologic Oncology, Asan Medical Center, Seoul, Korea

Visiting Scholar
2011–2012 Gynecologic Oncology, UC Irvine Medical Center, Orange, California

Academic Appointments:
2006–2010 Assistant Professor, Department of Obstetrics & Gynecology
2010–present Associate Professor, Department of Obstetrics & Gynecology
2012–present Director, Gynecologic Cancer Center

Ajou University School of Medicine, Suwon, Korea

Professional Organizations:
Pelvic & paraortic lymphadenectomy in ovarian cancer

Penang Medical College, Malaysia
Suresh Kumarasamy

As approximately 22% of women with presumed stage 1 disease will have evidence of retroperitoneal lymph node metastasis, lymph node dissection helps in accurately staging patients with clinical early cancer and assists in selecting patients who would benefit from adjuvant treatment.

Retrospective studies on systematic lymphadenectomy in early ovarian cancer have reported conflicting results. A meta–analysis which included heterogenous data from RCT’s and observational studies reported a survival advantage with systematic lymphadenectomy. The only randomised trial comparing systematic lymphadenectomy with lymph node sampling showed an improvement in progression free survival but no increase in overall survival in the systematic lymphadenectomy arm. There was increased morbidity when systematic lymphadenectomy was carried out. This study may however have lacked power. Also more patients in the control arm received chemotherapy.

Patients with advanced ovarian cancer have a high prevalence of both pelvic and paraortic lymph node metastasis. The only randomised trial in advanced disease showed an improvement in progression free survival in the systematic lymphadenectomy arm but no improvement in overall survival. There was an increase in post operative complications, mostly mild in the systematic lymphadenectomy arm.

The removal of clinically normal nodes should not be considered as part of standard care of patients with advanced ovarian cancer. Bulky nodes should be resected as part of surgical cytoreduction to microscopic disease. The role of systematic lymphadenectomy in patients with advanced disease who have had complete intraperitoneal resection should be evaluated in a prospective trial.

Biosketch

Dr Suresh Kumarasamy obtained his postgraduate qualifications in Obstetrics and Gynaecology from both the University of Malaya and the Royal College of Obstetricians & Gynaecologists, London. He obtained further sub–specialty training at the Northern Regional Gynaecological Oncology Centre, Gateshead, United Kingdom as well as the Department of Cancer Medicine, University of Sydney, Australia. He is a Fellow of the Royal College of Obstetricians and Gynaecologists, London as well as a Fellow ad eundem of the Royal College of Physicians of Ireland.

Dr Suresh worked with the Ministry of Health, Malaysia as well as the National Health Service, United Kingdom for over 18 years before commencing private practice in 2002. He has an academic appointment as Adjunct Associate Professor at Penang Medical College.

Dr Suresh is the Immediate Past President of the Obstetrical & Gynaecological Society of Malaysia, Chairman for Gynaecological Oncology, National Specialist’s Register, Malaysia and is also a council member of the Asian Society of Gynaecological Oncology. He has served in Editorial Boards as well as in various Ministry of Health committees and has served as the Chairman of the Gynaecological Oncology Sub–committee of the Obstetrical & Gynaecological Society of Malaysia for 9 years in the past.
Educational Lecture on Gynecologic Cancer Surgery [2]

Peritoneal stripping in ovarian cancer surgery

Dept. Ob/Gyn, Chang Gung Memorial Hospital Linkou Medical Center, Taiwan¹, Chang Gung University Medical College Taoyuan, Taiwan² Ting-Chang Chang³

While prevent tumor rupture and complete staging are the key issues of surgery for early stage ovarian cancer, debulking tumor to microscopic level is the paramount surgical goal for ovarian cancer of advanced stage. Though this aim should be balanced to the co-morbidities of the patient, if exists. The extent of residual disease is the only prognostic factor under the control of the operating surgeon.

Serous ovarian cancer is usually confined within the peritoneal borders of the abdominal cavity. It spread along the peritoneal and diaphragmatic surfaces without deep invasion into the abdominal organs, i.e. transcoelomic spread. A retroperitoneal dissection allows the entire tumor–covered peritoneal reflection to be removed. Resectability of tumor tissue depends on the tumor burden, patient's medical condition in general, surgical instrument applied, operation technique of the surgeon and facility of post-operative care. Optimal debulking in advanced ovarian cancer including complete debulking with no macroscopic disease left after surgery (R0 resection) and macroscopic lesion (s) up to 1 cm left after surgery (R1 resection). Up to 70–80% of optimal debulking rate has been reported while at least 50% is an acceptable quality measure.

Essential surgery for advanced ovarian cancer consists of hysterectomy, salpingo-oophorectomy, omentectomy, appendectomy, removal of metastatic peritoneal disease, and pelvic and para-aortic lymphadenectomy if a R0 resection can be achieved. Among the above, peritoneal stripping for removal of all tumor tissue involving the parietal and visceral peritoneum is performed with large diversity between experienced gynecologic oncologists. The procedures of peritoneal stripping will be presented and discussed comprehensively to reappraisal this critical surgery measure in the management of advanced ovarian cancer.

Biosketch

Graduate Education:
1974–1981, China Medical University Medical College, Taichung, Taiwan

Post-Graduate Education:
1990–1991, Harvard School of Public Health, Boston, Massachusetts, U.S.A.
Degree—Master of Public Health

Post-Doctoral Fellow:
1990–1991, Division of Gynecologic Oncology, Department of Obstetrics and Gynecology, Brigham and Women's Hospital and New England Trophoblastic Disease Center, Boston, Massachusetts, U.S.A.

Academic Appointment:
August 2008– Academic Professor, Chang Gung University Medical College
July 2007– Academic Professor, Chang Gung Memorial Hospital

Employment Record:
August 2013–Chairman, Department of Obstetrics and Gynecology, Chang Gung Medical Foundation Linkou Medical Center
August 2011–July 2013, Vice Chairman, Department of Obstetrics and Gynecology, Chang Gung Medical Foundation Linkou Medical Center

September 2010–July 2011, Vice President, Xiamen Chang Geng Hospital, Xiamen, China
July 2007–July 2011, Director, Department of Obstetrics and Gynecology, Chang Gung Medical Foundation Linkou Medical Center
December 2000–June 2007, Director, Section of Gynecologic Oncology, Department of Obstetrics and Gynecology, Chang Gung Memorial Hospital, Linkou Medical Center
Primary debulking surgery (PDS) with the aim of removing all macroscopic disease has been the standard treatment for advanced ovarian cancer.

For patients with non-operable disease or poor performance status, interval debulking surgery (IDS) following neoadjuvant chemotherapy (NACT) is a treatment option in these patients. NACT can induce the reduction and “down-staging” of the tumor and thus improve operability. It is clear that the surgical goal should be complete resection of all macroscopic disease regardless of the timing of surgery for advanced ovarian cancer, whether performed as primary treatment of after NACT.

Previous studies have reported that tumor response to NACT causes histopathologic changes such as tumor necrosis, fibrosis, and tumor-induced inflammation, resulting in interference with the evaluation of tumor extent in surgery. The occurrence of fibrosis and adhesion after NACT may make surgeons’ estimation of tumor spread unclear and make complete cytoreduction more difficult. This factor can partly explain that although a higher rate of complete debulking was achieved in the group assigned to NACT followed by IDS than in the group assigned to PDS followed by chemotherapy in large phase III trials, no benefit for survival was gained. At IDS, gynecologic surgeons’ close inspection and palpation are required to estimate the intra-abdominal extent of the disease.

Biosketch

Education:
1987-1993 Chiba University School of Medicine
1999-2003 Chiba University Graduate School of Medicine
Awarded the degree of PhD in tumor biology for a thesis entitled “Critical roles of AMP-activated protein kinase in constitutive tolerance of cancer cells to nutrient deprivation and tumor formation”.

Training and professional background:
1993-1996 Internship and Residentship, Department of General Surgery, Chiba University Hospital, Chiba, Japan
1996-1999 Resident, National Cancer Center Hospital, Tokyo, Japan
Training fields: Colorectal Surgery, Gynecology, Urology
2004-2008 Medical Doctor, Department of Gynecology, Chiba Cancer Center, Chiba, Japan
2008-2012 Research Associate, Department of Obstetrics and Gynecology, Chiba University School of Medicine, Chiba, Japan
2012– Department of Gynecology, Cancer Institute Hospital, Tokyo, Japan
The Frequency of Malignant Ovarian Germ Cell Tumor approximately is 5% of Ovarian Cancer. Germ cell tumor of ovarian cancer is commonly found in prepuberty and young reproductive age. Most of the patient’s age is less than 40 years old, therefore, therapeutic options need to consider the fertility of patients besides the effectiveness of treatment.

For the prognosis purpose, variety of histopathology distinguished on dysgerminoma and non-dysgerminoma. Preoperative diagnosis is based on physical examination, ultrasonography, and tumor markers. Surgical management performed with peritoneal washing, omentectomy, tumor mass debulking, pelvic dissection, para aortic lymph node, and frozen section. Stage I A dysgerminoma and low grade (G1) Immature Teratoma is safely treated by unilateral salpingo-oophorectomy and observation without any adjuvant.

Several patients have a Disease–free survival more than 20 years and recurrency rate below 10%. Despite the recurrence of patients, it can be cured with highly effective chemotherapy.

Stage II and above Dysgerminoma treatment can preserve fertility with unilateral salpingo-oophorectomy and adjuvant chemotherapy. But, if patient has completed child bearing, Total Abdominal Hysterectomy–Bilateral Salpingo Oophorectomy (TAH/BSO) surgical procedure is acceptable and adjuvant chemotherapy should be given. Adjuvant chemotherapy changed from VAC (Vincristine, Dactinomycin, Cyclophosphamide) to more effective BEP (Bleomycin, Etoposide, Cisplatin). Neoadjuvant chemotherapy can be considered for patients with extensive intra-abdominal disease, especially non-dysgerminoma germ cell tumor.

Key words: Germ cell tumor, Ovarian cancer, Fertility, Neoadjuvant chemotherapy.

Biosketch

She graduated from Faculty of Medicine University Indonesia 1979, with degree MD.
She completed her specialty in Obstetrics and Gynecology at 1986 at the same Institution.
At 1988, as Junior staff at the Department of Obstetrics and Gynecology she had an opportunity as a fellowship in University of Groningen/Groningen Zienkenhuis.
She became Head Division of Gynecology Oncology 2004–2013.
She is a Coordinator for Female Cancer Program Regional Jakarta since 2006. She is a member at the some Professional Organization related to Women Cancer in national and international.
Abdominal radical trachelectomy from our ten years’ experience

Department of Obstetrics and Gynecology, Keio University, School of Medicine, Japan
Department of Obstetrics and Gynecology, Fujita Health University, School of Medicine, Japan
Takuma Fujii, Hiroshi Nishio, Juri Sugiyama, Takashi Iwata, Nobuyuki Susumu, Kyoko Tanaka, Kazuhiro Minegishi, Toshio Hamatani, Yasuhiro Yoshimura, Daisuke Aoki

Objective: Fertility sparing surgery for cervical cancer is in demand due to the increase of cervical cancer in young women. Abdominal radical trachelectomy (RT) is one of the alternative promising surgical option. We retrospectively analyzed planned 170 abdominal radical trachelectomy at Keio University Hospital from 2002 September through 2012 December.

Methods: Surgical, oncological and obstetrical outcome were estimated.

Results: Sixteen patients (9.4%) planned RT were abandoned and converted to hysterectomy due to positive lymph nodes or positive margins of the removed cervix by frozen section in the original operation. The rest of 154 patients were investigated. The median age of the patients was 33 (23–44) years. The majority of the lesions were stage Ia (16.2%) or Ib1 (83.7%). In histology, 80% (123/154) were squamous and 20% (31/154) were adenocarcinomas. The median follow-up was 30.5 (3–104) months. Twenty two patients (14.0%) who underwent RT received adjuvant chemotherapy and/or radiation due to intermediate or high risk for recurrence. There were some post-operative complications; cervical stenosis, amenorrhea and lymphocele. In the obstetrical outcome, 32 pregnancy in 25 women were observed. 21 of 32 patients conceived with artificial reproductive technology. Fifteen (46.9%) babies were delivered after 32 weeks.

Conclusion:
RT seems to be an oncologically safe procedure in well–selected patients with early–stage diseases. Obstetrical outcomes post RT was fair. However, the patients need to be fully informed about perioperative and late complications especially for the risk of premature delivery. Collaboration with gynecologic oncologist, perinatologist, ART specialists and professional nurses were also critical issues for establishing this treatment.

Biosketch

Education:

<table>
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<tr>
<th>Institution</th>
<th>Degree</th>
<th>Year conferred</th>
<th>Field study</th>
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</thead>
<tbody>
<tr>
<td>Keio University, Japan</td>
<td>MD</td>
<td>1987</td>
<td>Medicine</td>
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<tr>
<td>Keio University, Japan</td>
<td>PhD</td>
<td>1995</td>
<td>Medical Science</td>
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Professional Experience:

1987 – 1990: Physician’s License in Japan
1987 – 2000: Resident in Obstetrics and Gynecology, Keio University, Japan
1991 – 1992: Research Resident in Genetics Division, National Cancer Center Research Institute, Japan
1992 – 1995: Resident in Obstetrics and Gynecology, Keio University, Japan
1995-1996  Medical staff in Obstetrics and Gynecology, Ohtawara Red Cross Hospital, Japan
1996-1999  Post-doctoral Associate, Yale University, School of Medicine, New Haven, CT, USA
1999-2000  Medical staff in Obstetrics and Gynecology, National Tochigi Hospital, Japan
2000-2005  Instructor, Department of Obstetrics and Gynecology, Keio University, School of Medicine, Japan
2005-2013  Assistant professor, Department of Obstetrics and Gynecology, Keio University, School of Medicine, Japan
2013-present  Professor and chair, Department of Obstetrics and Gynecology, Fujita Health University, School of Medicine, Japan

Society Membership:
Japan Medical Association
Japan Society of Obstetrics and Gynecology
Japanese Cancer Association
Japan Society of Clinical Oncology
Japanese Society of Clinical Cytology
Japan Society of Gynecologic Oncology
Japan Society of Gynecologic and Obstetric Endoscopy
Japanese Society of Medical Oncology
Japan Society of Gynecological and Obstetrical Surgery
Japanese Society for sexually transmitted disease
Japan Gynecologic Oncology Group
International Gynecologic Cancer Society
Robotic radical trachelectomy in Korea

Korea University College of Medicine, Korea
Jae Kwan Lee

After the first report of systematic conservative treatment of patients with early-stage cervical cancer by vaginal radical trachelectomy (VRT) with laparoscopic pelvic lymphadenectomy in 1994, more than 1000 cases of fertility sparing trachelectomy have been published. The procedure is considered as safe as a radical hysterectomy if strict selection criteria are applied.

Advanced laparoscopic surgeons can perform complex cases laparoscopically without the use of robotics. But the adoption of robotic technology will allow more surgeons to choose a laparoscopic approach over laparotomy in difficult cases. It is true that robotic equipment is costly and not all hospitals can incur the expense. But robotics is a new and developing technology, and with increased adoption and enhancement the initial cost should decrease.

The first robot-assisted trachelectomy was performed in December 2007. Thereafter, similar procedures have been described from other centers. The technique is new and about 26 cases have been published in English literature. Compared with conventional laparoscopy, the robot provides improved dexterity and precision, a 3-dimensional view of the operative field and a comfortable working position for the surgeon which may enable a more precise dissection of the parametria and the pelvic nerves. Other disadvantages with robot assistance are the high investment and maintenance cost for the robot. Moreover, the number of trocars used is probably higher than in conventional laparoscopy.

Robot-assisted laparoscopic trachelectomy is a feasible alternative to a combined laparoscopic and vaginal approach, in particular in a setting where the robot is frequently used for other advanced gynecological oncological procedures.

Biosketch

Education:
Mar/84-Feb/90 M.D., Korea University College of Medicine, Seoul, Korea
Mar/97-Aug/99 Master (Obstetrics & Gynecology) Graduate School, Korea University
Mar/00-Aug/02 Ph.D. (Obstetrics & Gynecology) Graduate School, Korea University

Postdoctoral Training:
Mar/90-Feb/91 Intern, Korea University Medical Center, Seoul, Korea
Mar/94-Feb/97 Resident in Department of Obstetrics & Gynecology, Korea University Medical Center, Seoul, Korea
Mar/98-Feb/00 Fellow, Division of Gynecologic Oncology, Department of Obstetrics & Gynecology, Korea University Medical Center, Seoul, Korea
Sept/02-Aug/03 Research fellow, Department of Obstetrics & Gynecology, University of Southern California, US
Mar/09-Feb/10 Research fellow, Department of Obstetrics & Gynecology, Harvard University Massachusetts General Hospital, US

Academic Appointments:
Mar/98-Feb/00 Clinical fellow, Department of Obstetrics & Gynecology, Korea University College of Medicine, Seoul, Korea
Mar/00-Feb/01 Clinical Instructor, Department of Obstetrics & Gynecology, Korea University College of Medicine, Seoul, Korea
Mar/01-Aug/02 Assistant Professor, Department of Obstetrics & Gynecology, Sungkyunkwan University School of Medicine, Seoul, Korea
Sept/04-Aug/09 Associate professor, Department of Obstetrics & Gynecology, Korea University College of Medicine, Seoul Korea
Sept/09-Present Professor, Department of Obstetrics & Gynecology, Korea University College of Medicine, Seoul Korea
From 2002, we started the feasibility study of sentinel lymph node (SN) navigation surgery (SNNS) for cervical cancer patients under IRB approval. For the initial 82 cases of stage IА–IIB, total pelvic lymphadenectomy (so-called backup lymphadenectomy) was performed with each hysterectomy. On the day before surgery, we injected fluid containing 99mTc-labeled phytate into cervix outside the tumor. Intraoperatively, SNs were identified as radioactive 'hot nodes' by gamma probe and all of them were pathologically examined. SN detection rate was 88% and increased up to 95% in the case of subgroup of stage IА–IВ1 and smaller tumor size (maximal tumor diameter under 3cm). As for predictive ability of SN for lymph node metastasis, the negative predictive value was 100% (sensitivity: 100%, false negative rate: 0%). With this promising result, we applied SNNS to the abdominal radical trachelectomy (ART) with the intraoperative pathological examination for the amputated cervical margin. In addition to the ordinary preoperative eligibility criteria, we set our original criteria relating tumor lesion: (1) maximal transverse tumor diameter (MTTD) not over 3cm and 2cm in squamous cell carcinoma and adenocarcinoma, respectively; (2) vertical tumor-free space (VTFS) over 1cm between tumor edge and internal cervical os. In the cases of much smaller lesions, we performed abdominal simple trachelectomy (AST). From 2005, we started clinical study of ART under IRB approval. Within 130 patients fulfilling the preoperative criteria, 118 cases underwent trachelectomy (ART: 104, AST: 14). Nine cases with positive lymph nodes and 3 cases showing positive amputated cervical margin were intraoperatively converted to radical hysterectomy. Within 118 trachelectomy cases, 13 patients received postoperative adjuvant treatment. During 42 months of a mean follow-up period, none of the cases recurred and 8 patients became pregnant. We thought our successful surgical outcome of ART brought by the preoperative criteria using MTTD and VTFS, and by the intraoperative SNNS.

Biosketch

1985
Degree of M.D.: Graduate Faculty of Medicine, Kyushu University, Fukuoka, JAPN
1985–1987
Resident, Dept. of OBGY, Kyushu University Hospital
1987–1991
Degree of Ph.D.: Doctoral Research Fellow, Medical Institute of Bioregulation, Kyushu University
1991–1993
Postdoctoral Research fellow, Sunnybrook Health Science Centre, Toronto, CANADA
1993–1997
Assistant Professor, Dept. of OBGY, Graduate School of Medical Sciences, Kyushu University
1997–2009
Lecturer, Dept. of OBGY, Graduate School of Medical Sciences, Kyushu University
2009–
Associate Professor, Dept. of OBGY, Graduate School of Medical Sciences, Kyushu University
Round Table Discussion for Serous Ovarian Cancer (SOC)

Tubal origin of high-grade serous carcinoma: Do you believe?

University of Maryland, USA
Steven G. Silverberg

It has been suggested within the past few years that many, if not all, high-grade serous carcinomas previously thought to have arisen in the ovary or female peritoneum actually represent metastatic spread from a non-invasive neoplasm of the tubal fimbria that has been called serous tubal intraepithelial carcinoma (TIC). Although many recent presentations have accepted this hypothesis as if it were already proven to be true, there are actually strong arguments both for and against this concept. These will be discussed during the current presentation, and the potential practical significance of the TIC concept for “ovarian” cancer prevention, early detection, treatment and staging will be explored. The optimal pathologic processing and examination of adnexal specimens for demonstration of TIC and its presumed precursor lesions will also be discussed.

Biosketch

M.D. degree: Johns Hopkins, 1962
Pathology Residency: Yale, 1963–1965
Pathology Fellowship: Memorial Sloan–Kettering, 1965–1966
U.S. Air Force, Tachikawa Air Base Hospital, Japan, 1966–1968

Faculty Appointments:
Medical College of Virginia, 1968–1972
University of Colorado, 1972–1981
University of Maryland, 1996–present:
- Director of Anatomic Pathology, and Director of Pathology Residency Program,
- University of Maryland Medical System, Baltimore, 1996–2004;
- Clinical Professor of Pathology 2004–2008
- Professor Emeritus 2008–Present

Honors (Selected):
Association of Directors of Anatomic and Surgical Pathology (1998–2000),
International Society of Breast Pathology (2003–2005),
Fellow, Royal College of Pathologists (1999)
Visiting Professor at numerous universities around the world over 30 years
Silverberg Award for Lifetime Achievement in Surgical Pathology–given to a senior Japanese Pathologist by the Japanese Division of the International Academy of Pathology since 2007
Recipient of Distinguished Pathologist Award, US-Canadian Academy of Pathology, 2012
Gynecologic Oncology Group, Pathology Referee, 1999–present
Round Table Discussion for Serous Ovarian Cancer (SOC)

What have we learned from The Cancer Genome Atlas

M.D. Anderson Cancer Center, USA
Anil K. Sood

The Cancer Genome Atlas (TCGA) is a comprehensive and coordinated effort to accelerate our understanding of the molecular basis of cancer through multiple "omics" technologies. The large amount of information emerging from these genome-scale investigations has stimulated development of new analytical frameworks and tools. For high-grade serous ovarian cancer, key findings to-date have included a high prevalence of mutations in p53, low prevalence but recurrent mutations in few additional genes, high frequency of homologous recombination defects, and numerous copy number rearrangements. For uterine cancer, serous tumors and a fraction of high-grade endometrioid tumors have extensive copy number alterations, relatively few DNA methylation changes and frequent p53 mutations. However, most endometrioid tumors had few p53 mutations, but had frequent PTEN and CTNNB1 mutations. For both ovarian and uterine cancers, molecular subgroups were identified that could be useful for designing molecularly targeted therapies. Cross-tumor comparisons are providing unique opportunities for identifying molecular similarities in various tumor types, independent of the site of origin. Such discoveries will allow harmonized therapies based more on molecular knowledge than purely on tumor histology. Challenges related to complex bioinformatic analyses, need for functional and biological validation are gradually being overcome and will continue to yield important clues for improving the outcome of cancer patients.

Biosketch

Positions and Employment:
1998–2002 Assistant Professor, Gynecologic Oncology, University of Iowa, Iowa City, IA
2002–2006 Associate Professor, Gynecologic Oncology, Cancer Biology, MDACC, Houston, TX
2005–pres Director, Blanton–Davis Ovarian Cancer Research Program, Gynecologic Oncology, MDACC, Houston, TX
2006–pres Professor, Gynecologic Oncology, Cancer Biology, MDACC, Houston, TX
2007–pres Bettyann A. Murray Distinguished Professorship in Ovarian Cancer Research, MDACC, Houston, TX
2009–pres Co-Director, Center for RNAi and Non-Coding RNA, MDACC, Houston, TX
2010–pres Vice Chairman, Translational Research, Gynecologic Oncology, MDACC, Houston, TX
2012–pres Co-Director, Women’s Cancer Moonshot Program, MDACC, Houston, TX

Honors:
• J.G. Moore Research Award, 1996
• Beat All-Around Clinical Poster, 28th Annual Meeting of Society of Gynecologic Oncologists (SGO), 1997
• Young Investigator Award, Fourth Joint Conference of AACR and the Japanese Cancer Association, 1998
• James F. Nolan Award for the best overall research presentation, WAGO and FRS, 2002, 2004
• Charles A. Hunter, Jr. Prize Thesis Award, 2003
• Outstanding educator, MDACC, 2003
• Educator of the Month, MDACC, 2005, 2007
• Faculty Scholar Award, MDACC, 2006–2009
• Excellence in Ovarian Cancer Research Award, The Gynecologic Cancer Foundation/Margaret Greenfield/Carmel Cohen, MD, 2007
• Elected, Alpha Omega Alpha Honor Medical Society, 2008
- Elected Fellow, The American Gynecological and Obstetrical Society, 2008
- Elected, The American Society for Clinical Investigation, 2009
- Excellence in Teaching Award, Association of Professors of Gynecology and Obstetrics, MDACC, 2009
- Elected, Fellow of the Academy of Behavioral Medicine, 2010
- America’s Top Doctors for Cancer, Ltd. (U.S. News & World Report rankings), 2011
- GCF/Claudia Cohen Research Foundation Prize for Outstanding Gynecologic Cancer Researcher, 2011
- Dallas/Fort Worth Living Legend Faculty Achievement Award in Basic Research, MDACC, 2011
- Elected Fellow, the American Association for the Advancement of Science (AAAS), 2012
Molecular mechanism for peritoneal dissemination of serous ovarian cancer

Department of Obstetrics and Gynecology, Sanggye Paik Hospital, Korea
Chul Min Lee

Ovarian cancer is diagnosed in nearly a quarter of a million per year globally and around 140,000 succumb from the disease. Epithelial type comprises 90% of ovarian cancers and serous ovarian cancer (SOC) is the most abundant subtype reaching 25–30% of ovarian cancers. The lurking nature of SOC without symptom in the early stage makes it diagnosed only after the disease is widely spread in up to half of the cases. The main mode of metastasis in SOC is the peritoneal dissemination. The steps in peritoneal dissemination are detachment and increased motility, anoikis evasion, immune evasion, and adherence to and invasion of peritoneum. E-cadherin suppression through induction of MMPs plays a key role in detachment. Transcriptional factors such as slug or snail suppress E-cadherin and facilitate epithelial-mesenchymal transition (EMT). Regulation of TWIST by HIF–1 promotes metastasis through EMT showing that hypoxia in tumor microenvironment has its role. Anoikis and host immunity are other bars that metastasizing tumor cells should overcome. Src, kallikrein–related peptides (KLKs), and RAS–related proteins are those suggested to mediate anoikis evasion step. The mechanism of immune escape by metastasizing cells is largely unclear although recruitment of regulatory T cells and secretion of Fas ligand was suggested. E-cadherin and integrins along with TWIST, slug, and snail again play a pivotal role in adherence to peritoneal surface. ICAM–1, Ep–CAM, and FABP4 are other molecules related to adherence step. Finally, MMPs, IGF–1 and angiogenic factors such as VEGF, HIF–1, Cyr61 act in invasion step which is inevitable in metastasis. Elucidating molecular mechanism of metastasis is still under vigorous investigation and will provide more chances of developing specifically targeted therapy against ovarian cancer and other metastasizing malignancies.

Biosketch

Educational Background:
1986–1990 College of Medicine, Seoul National University, Graduated with M.D. degree

Training:
1990–1991 Rotating Internship, Seoul National University Hospital, Seoul
1991–1995 Residency (Dept. of Obstetrics and Gynecology), Seoul National University Hospital, Seoul

Appointments and Positions:
1995–1996 Chief, Dept. of Obstetrics and Gynecology, Paikyung Gil Hospital, Inchon, Korea
1996–1998 Chief, Dept. of Obstetrics and Gynecology, Yongin Hospital, Cheongpyeong–Ri Kyunngi–Do, Korea
1998–1999 Fellowship of Gynecologic Oncology, Dept. of Obstetrics and Gynecology, College of Medicine, Seoul National University
2000–2001 Instructor Department of Obstetrics and Gynecology, Inje University, Sanggye Paik Hospital Seoul, Korea
2001–Mar, 2006 Assistant Professor Department of Obstetrics and Gynecology, Inje University, Sanggye Paik Hospital Seoul, Korea
Apr 2006–to date Associate Professor Department of Obstetrics and Gynecology, Inje University, Sanggye Paik Hospital Seoul, Korea

Membership:
Member of the Korean Medical Association
Member of the Korean Society of Obstetrics and Gynecology
Member of the Korean Society of Gynecologic Oncology

Social Activities:
2010–2011 Secretary General, Korean Society of Gynecologic Oncology and Colposcopy
The category of low-grade serous tumors includes borderline serous tumors and low-grade serous carcinoma. These resemble each other to an extent, since they share molecular genetic alterations and have similar tumor cell cytology, but they differ in that borderline tumors are non-invasive, while low grade serous carcinoma is characterized by stromal invasion. This difference translates into a significant difference in clinical behavior, as most borderline tumors are clinically benign, while low-grade serous carcinoma is clinically malignant.

Borderline serous tumors involve one or, often, both ovaries. They average about 10 cm in diameter and are usually cystic tumors in which fine or coarse exophytic papillae line at least part of the cyst. Papillary growth is often present on the exterior of the ovary, and occasional tumors grow exclusively on the surface of the ovary. Microscopically, borderline serous tumors have complex branching papillary architecture. The papillae are lined by one to several layers of cuboidal to columnar tumor cells that stratify into multiple layers and grow in tufts; single cells and clusters of cells are frequently detached into the cyst lumen, or, if there is surface growth, into the abdominal cavity, where they can be detected by cytology. The tumor cells exhibit mild to at most moderate nuclear atypia and mitotic figures, while present, are not numerous. Occasional ciliated cells are present. The micropapillary variant of borderline serous tumor is a more proliferative tumor in which the cells form long papillary tufts or grow in cribiform or solid patterns on the surfaces of the papillae. The tumor cells are often cuboidal, and nuclei are slightly more atypical than in the standard borderline tumor, but mitotic figures are infrequent. Micropapillary tumors are more often bilateral, more likely to exhibit surface growth, and more likely to have invasive implants. The key diagnostic feature differentiating all forms of borderline serous tumors from low-grade serous carcinoma is the absence of stromal invasion in borderline tumors. Borderline tumors frequently involve extraovarian sites such as the peritoneum, the omentum, and lymph nodes, and the histology of the tumor in these extraovarian sites is of critical prognostic importance, with stromal invasion in implants being a significant adverse finding.

Low-grade serous carcinoma often arises in association with or subsequent to removal of a borderline serous tumor, suggesting that some borderline tumors progress to low-grade serous carcinoma. Low-grade serous carcinoma can be a microscopic finding or it may be grossly visible, in which case it can resemble a borderline tumor with areas of solid growth or grow as a firm solid nodule. Low-grade serous carcinoma can arise in the ovary, or in extraovarian sites. Microscopically, single tumor cells, small clusters and glands, or micropapillary aggregates of tumor cells invade the stroma. The invasive tumor cells are often surrounded by clear spaces and associated with psammoma bodies, and invasive carcinoma is frequently admixed with areas of borderline serous tumor. Rare variants consist of large “macropapillae” invading the stroma. The cytologic features of the tumor cells are quite similar to those of a borderline tumor, although usually there is slightly greater nuclear atypia and mitotic figures are more frequent, but still not numerous. It has been proposed that low-grade serous carcinoma should exhibit only mild to
moderate nuclear atypia and no more than 12 mitotic figures per 10 high power fields. In practice, most examples are readily identified by their characteristic pattern of invasive growth and low-grade cytology, so mitosis counting is rarely required. The term “invasive implant” is often applied to small invasive tumor deposits found on the peritoneum or omentum in patients operated on for borderline serous tumors, and larger masses are designated as “low grade serous carcinoma,” but invasive implants and invasive lymph node deposits of borderline serous tumors are histologically and biologically foci of low grade serous carcinoma.

Immunohistochemistry can help in the recognition of serous tumors and in the differentiation between low and high-grade serous carcinoma. All serous tumors show positive staining for CK7 and PAX8 and they exhibit positive nuclear staining for WT-1. The proliferation rate, as detected by Ki–67 staining, is much greater in high-grade serous carcinoma and high-grade serous carcinoma is diffusely and strongly positive, or completely negative, for p53, while low-grade serous carcinoma shows wild type staining. P16 is also typically diffusely and strongly positive in high-grade serous carcinoma, and negative or patchy in low-grade serous tumors.

**Biosketch**

**Education:**
- 1963–1967 University of California, Berkeley A.B. with Distinction
- 1967–1971 Johns Hopkins University M.D.
- 1971–1972 Stanford University Medical Center Intern Pathology
- 1972–1974 Stanford University Medical Center Resident Pathology
- 1973–1974 Stanford University Medical Center Fellow Surgical Pathology
- 1974–1975 University of Texas, MD Anderson Cancer Center Fellow Oncologic Pathology

**Principal Positions Held:**
- 1975–1977 Eisenhower Army Medical Center Fort Gordon, GA Staff Pathologist
- 1977–1980 Armed Forces Institute of Pathology, Washington, D.C. (Department of Gynecologic and Breast Pathology) Staff Pathologist
- 1980–1983 George Washington University, Washington, D.C. Assistant Professor
- 1983–1986 George Washington University, Washington, D.C. Associate Professor
- 1986–1992 Alta Bates Medical Center, Berkeley Attending Physician
- 1993–present University of California, San Francisco Professor of Clinical Pathology
Round Table Discussion for Serous Ovarian Cancer (SOC)

Imaging diagnosis of low-grade SOC and serous borderline tumor

Kaori Togashi

Diagnostic Imaging and Nuclear Medicine, Department of Radiology Kyoto University,
Graduate School of Medicine, Japan

Only few reports concerning imaging findings of serous borderline tumors (SBT) have been published. Reported findings are almost entirely solid masses that showed hyperintense papillary architecture with hypointense internal branching resembling a sea anemone on T2-weighted MRI, or cystic masses with either intracystic or surface papillary components or both. Cystic masses are unilocular or oligolocular, but always thin-walled cysts usually filled with simple fluid: hypointense on T1-weighted images and hyperintense on T2-weighted images. Papillary projections are variable in size and shape, and usually show branching appearance with hypointense central core and hyperintense peripheral area on T2-weighted images. These projections show slight hyperintense signal on Diffusion-weighted images, and well enhanced. On CT, the papillary projections frequently show calcification. On MR, papillary projections with distinct hypointense central core, which represent internal branching fibrous stalk, are reportedly important clues for SBT of both cystic and solid appearances. Although papillary projections are also present in 38% of carcinomas on MR images, solid components in carcinomas are usually dominated by solid masses. Thus, the differentiation between SBT and high-grade adenocarcinoma might be feasible on MR imaging. In contrast, differentiation between SBT and low-grade adenocarcinoma is difficult on MR imaging at this moment.

In our experiences, SBT with surface papillary components frequently tends to be bilateral, and may have increased risk for peritoneal implant. Implants are nodules of high intensity on T2WI and DWI as with papillary projections.

Biosketch

Education:
1973–1979 Medical School, Kyoto University

Post–Graduate Education:
1979 Residency, Kyoto University
1979–1980 Residency, Shiga Medical College
1983–1987 Ph. D. course, Kyoto University

Academic Appointments:
1992–1996 Assistant Professor, Kyoto University
1996–1997 Visiting Assistant Professor, Beth Israel Hospital, Harvard University
1998–2004 Associate Professor, Kyoto University
2004–Present Professor and Chair
Department of Diagnostic Imaging and Nuclear Medicine, Kyoto University Graduate School of Medicine

Professional Affiliations and Scientific Publications:
Radiological Society of North America (RSNA)
European Society of Radiology (ESR)
International Society of Magnetic Resonance in Medicine (ISMRM)
European Society of Urogenital Radiology (ESUR)
Low-grade serous carcinoma (LGSC) of the ovary or peritoneum comprises 10% of all serous carcinomas. This subtype may arise de novo or as a recurrence following a diagnosis of serous tumor of low malignant potential (STLMP). Of STLMP that recur, approximately 80% are LGSC. A binary grading system for serous carcinoma was introduced in 2004. This system is based on amount of nuclear atypia, with a secondary feature of mitotic index. This grading system appears to be much more predictive of clinical behavior than the FIGO system. For management of early stage disease, primary surgery with comprehensive surgical staging is the standard. For patients with advanced stage disease, which accounts for the majority of cases, maximum cytoreduction to achieve minimal residual disease is the overarching goal. In selected cases with extensive disease, neoadjuvant chemotherapy following by interval debulking is indicated. Standard postoperative therapy consists of paclitaxel/carboplatin, with variations, for all patients except those with stage IA. For patients who recur, secondary cytoreductive surgery may be indicated in selected cases. Data thus far suggest that LGSC is relatively chemoresistant. The response rate to conventional chemotherapy in the relapse setting is 5% or less. Hormonal therapy is associated with a 10% response rate, and tumors that are ER+/PR+ may be more likely to respond. Based on current information, potential therapeutic targets for LGSC include the angiogenesis pathway, the MAPK pathway, IGF1-R, ER/PR, and the PI3K/AKT/mTOR pathway. Separate clinical trials for this subtype are strongly recommended to advance the field.

Biosketch

Dr. David M. Gershenson is Professor in the Department of Gynecologic Oncology and Reproductive Medicine at the University of Texas MD Anderson Cancer Center where he joined the faculty in 1979 after completing his fellowship training. He was Chair of the department from 1998-2012. His major focus is on clinical and translational research of rare ovarian cancers.

Since 1999, he has served as Co-Principal Investigator of MD Anderson's NCI-funded SPORE in Ovarian Cancer and, more recently, as Co-Project Leader of Project #3, "Personalized Therapy for Women with Low-Grade Serous Carcinoma of the Ovary."

Dr. Gershenson also serves as Chair of the Gynecologic Oncology Group's (GOG) Rare Tumor Committee and as a member of the GOG Protocol Development Committee. He is a Co-Chair of the NCI's Gynecologic Cancer Steering Committee and is also Editor Emeritus of the journal, Gynecologic Oncology. Since 2009, he has served as Chairman of the Foundation for Women's Cancer (formerly the GCF). Since 2006, he has served as a Director of the American Board of Obstetrics and Gynecology.
Round Table Discussion for High-Risk Endometrial Cancer

Imaging of myometrial invasion of endometrial cancer

Seoul National University College of Medicine, Korea
Dong Hoon Suh

Endometrial cancer is the most common gynecological malignancy in industrialized countries. Characterization and discussion on the value of magnetic resonance imaging (MRI) and novel MRI techniques (diffusion, perfusion, spectroscopy, and MRI with new contrast agents) in endometrial cancer will be presented. Currently, contrast-enhanced (CE) MRI is the imaging technique of choice, and diffusion-weighted (DW) MRI may help to identify malignant lesions and assess myometrial invasion. Recently, DW MR imaging has superior diagnostic accuracy in the assessment of myometrial invasion and significantly higher staging accuracy compared with CE MR imaging. Novel MRI techniques may potentially increase diagnostic accuracy, enabling a refined, tailored surgical procedure and better prediction of treatment outcomes.

Biosketch

Education:
1996–1998 Premedical School, Seoul National University
1998–2002 Seoul National University College of Medicine
2007–present Seoul National University College of Medicine, postgraduate school

Institutional Training:
Seoul National University Hospital Mar 2002–Feb 2003: Internship
Seoul National University Hospital Mar 2003–Feb 2007: Residency in Department of Obstetrics and Gynecology
Seoul National University Hospital May 2010–Nov 2012: Fellowship in Gynecologic Oncology
Seoul National University Hospital Nov 2012–Feb 2013: Assistant professor
Seoul National University Bundang Hospital Mar 2013–present: Assistant professor
Pathologic prognostic factors of endometrioid adenocarcinoma include stage, tumor grade, lymph-vascular invasion (LVI), cervical stromal involvement, and invasive pattern. The pattern of myoinvasion, classified as diffusely infiltrating gland pattern, broad front pattern, adenomyosis-like pattern, adenoma malignum pattern, and MELF (microcystic, elongated, fragmented) pattern, has been shown to have an impact on risk for disease recurrence and lymph node metastasis. Among these patterns the diffusely infiltrating gland pattern is associated with higher stage, LVI, and disease recurrence. MELF pattern of invasion, first described by Murray et al. in 2003, is a distinct pattern of myoinvasion characterized by outpouching of infiltrating neoplastic glands, resulting in microcysts, elongation, or fragmentation, with a prominent fibromyxoid stromal reaction. Scattered individual tumor cells or cell clusters and inflammatory infiltrate are common. Since the MELF pattern of invasion is so subtle that it can be easily overlooked on microscopic examination. Consequent studies demonstrated that MELF pattern was identified in 15.9% (27/170) of cases of endometrial adenocarcinoma, all of which were Grade 1 or 2 endometrioid, and is closely associated with mucinous differentiation and LVI. Other study showed that MELF was identified in 9.4% (33/350) of endometrioid adenocarcinoma.

There is a variety of phenotypic alteration in case of MELF. Stewart et al. demonstrated that infiltrating glands showing MELF pattern are positive for cytokeratin 7 (CK7) and 19 (CK19), negative for estrogen receptor, and shows reduced E-cadherin expression and CD147 (extracellular inducer of matrix metalloproteinase, EMMPRIN), in contrast to background neoplastic glands. Matrix metalloproteinase-2 (MMP2) is negative in MELF glands, whereas is expressed in the reactive stroma surrounding MELF glands. Therefore, it appears that stromal MMP may play a role in promoting invasion. In addition, expression of Galectin-3, a widely distributed carbohydrate binding protein which is known to be associated with tumor development and progression, is reduced in MELF glands. Expression of fascin, an actin-binding protein which is considered to induce the migratory capacity of both normal and neoplastic cells, is increased in MELF-type epithelium, suggesting active infiltrating nature of these glands. These findings appear to indicate that MELF represents epithelial-mesenchymal transition (EMT). The Ki-67 labeling index is lower in areas of MELF compared with conventional neoplastic glands of endometrioid adenocarcinoma, which is a well-known phenomenon during EMT.

It has been shown that MELF pattern is associated with LVI, but clinical implication of MELF still remains to be determined. Although patients with prominent fibromyxoid stromal reaction per se show a higher frequency of death or recurrence, clinical outcome of those with MELF is better than those without this particular pattern. McKenney et al. pointed out morphologically subtle pattern of LVI, characterized by intravascular tumor cells resembling histiocytes. Pavlakis et al. has demonstrated that MELF pattern invasion is closely related to lymph node metastasis with a positive rate of 54% (7/13), compared to those without MELF with a rate of 7% (6/86). Lymph node metastasis is frequently micrometastasis or isolated tumor cells (ITC), resembling histiocytes located in the subcapsular sinuses, but long-term
outcome of patients with such metastasis associated with MLEF pattern is unknown. More recently, Euscher et al. have reported that univariate analysis pointed to MELP pattern of myoinvasion, as well as lower uterine segment (LUS) involvement and papillary architecture as possible predictors of advanced-stage disease, but these were not shown to be significant by multivariate analysis4.


**Biosketch**

Education: 1990 M.D. Hiroasaki University, Faculty of Medicine, Hiroasaki, Japan

Postgraduate Training: 1990-1992 Residency at the Department of Pathology, Tohoku University Hospital
1992-1996 Senior residency at the Department of Pathology, Kawasaki University Hospital, Kurashiki, Japan

Academic Appointment: 1996-2001 Assistant professor at the Department of Pathology, Kawasaki Medical School, Kurashiki, Japan
1997-1998 Visiting fellowship, Department of Pathology, New York University Medical Center, NY, NY, USA
2001-2002 Assistant Professor at the Division of Histopathology Department of Pathology, Tohoku University Graduate School of Medical Science, Sendai, Japan
2002-2005 Assistant Professor at the Department of Diagnostic Pathology, Kyoto University Graduate School of Medical Science
2007-present Associate Professor at the Department of Diagnostic Pathology, Kyoto University Graduate School of Medical Science

Hospital Appointment: 1996-2002 Attending Pathologist at the Department of Pathology, Kawasaki Medical School Hospital, Kurashiki, Japan
2002-2005 Attending pathologist at the Department of Pathology, Tohoku University Hospital, Sendai, Japan
2005-Present Vice chairman, Department of Diagnostic Pathology, Kyoto University Hospital
How to manage endometrial cancer with deep myometrial invasion?

Department of Obstetrics and Gynecology, Hokkaido University Graduate School of Medicine, Japan
Hidemichi Watari, Noriaki Sakuragi

The depth of myometrial invasion (MI) is strongly associated with extrauterine spread and metastasis of endometrial cancer to lymph nodes. Therefore, accurate preoperative determination of the depth of MI affects the treatment selection and reduces or extends the surgical area. As lymph node metastasis (LNM) is a strong risk factor for prognosis, it is important for determining the requirement for dissection of retroperitoneal lymph nodes, including para-aortic lymph nodes (PAN).

We will present the prevalence of LNM in the cases with deep MI ($\geq 50\%$), and correlate with other pathologic risk factors (histologic type, grade, cervical involvement, and lymphvascular space invasion ovarian metastasis etc.) based on the postoperative pathologic examinations. We will discuss how to manage the cases with deep MI based on the preoperative prediction models to estimate the risk of LNM. We will also discuss the optimal lymphadenectomy for the cases with deep MI in terms of the therapeutic purpose of lymphadenectomy.

Biosketch

Education:
1995 Ph.D., (Dr. of Medical Science), Hokkaido University Graduate School of Medicine, Sapporo, Japan
1989 M.D., Hokkaido University School of Medicine, Sapporo, Japan

Research and Professional Experience:
2006- Lecturer, Department of Gynecology, Hokkaido University Hospital Sapporo, Japan
2001-2005 Assistant Professor, Department of Gynecology, Hokkaido University Hospital, Sapporo, Japan
2000-2001 Attending Doctor, Sapporo Maternity Women’s Hospital, Sapporo, Japan
1996-2000 Post doctoral research fellow, Center for Research on Reproduction and Women’s Health, University of Pennsylvania, Philadelphia, USA
1995-1996 Head Doctor, Department of Obstetrics and Gynecology, Ashibetsu Municipal Hospital, Ashibetsu, Japan
1992-1995 Graduate student, Hokkaido University Graduate School of Medicine, Hokkaido, Japan
1990-1992 Attending Doctor, Department of Obstetrics and Gynecology, Fukagawa Municipal Hospital, Fukagawa, Japan
1989-1990 Resident, Department of Obstetrics and Gynecology, Hokkaido University Hospital, Hokkaido, Japan
Round Table Discussion for High-Risk Endometrial Cancer

Uterine serous papillary carcinoma: Pathology and molecular aspects

Seirei Mikatahara Hospital, Japan, Hacettepe University School of Medicine, Turkey
Ayse Ayhan

Serous type uterine carcinoma is prototype of Type II endometrial Cancer and represents approximately 15% of endometrial cancers. Estrogen independent nature, lack of association with endometrial hyperplasia and occurrence in the setting of endometrial atrophy, frequent association with clinically occult extraterine metastasis regardless of the absence of uterine mass are distinguishing features hence resulting in clinical aggressiveness. In contrast to endometrioid type endometrial cancers, uterine serous carcinomas may disseminate without clinical signs of metastasis. Comprehensive staging including formal lymph node dissection, omentectomy and peritoneal biopsies, is highly recommended. As far as the therapy is different, reproducible and exact diagnosis is crucial. Pathologist should be aware the morphological variations of this neoplasm which sometimes is confined to a polyp and invisible macroscopically and have a predilection for peritoneal dissemination. Typical histology forms papillae and micropapillae, may form glands where nuclear atypia is inappropriate for architectural grade, loss of cohesion and tufting. These tumors almost always arise in atrophic endometrium or atrophic endometrial polyps. As they may be a component of so called mixed carcinomas, special attention is necessary for diagnosticians.

The accompanying non-invasive lesion which was called "serous carcinoma in situ–intraepithelial serous carcinoma" in fact is fully malignant proliferation and even if only–noninvasive (?)–component is present in the uterus, there may be widespread "in–situ" appearing or invasive lesions in the peritoneal cavity.

Although the precise initiation and progression of serous endometrial carcinogenesis is principally unknown, most remarkable and the most common genetic alteration seen in >90% of tumors is the mutation of p53 tumor suppressor gene. Other molecular events underlying serous endometrial carcinogenesis deregulate p16INK4A/CyclinD–CDK/pRB–E2F and ARF–MDM2–p53 pathways, relates to the alterations causing chromosomal instability.

Biosketch

Brief Autobiography and Academic Achievements:
Medical school (1978), Pathology residency (1982), academic staff (1986), MSc in immunology (1990): Hacettepe University School of Medicine, Ankara, Turkey.
1990–1993 PhD, Hiroshima University School of Medicine-Japan (Tahara Lab).
1994–2004 Professor of Pathology, Hacettepe University School of Medicine, Turkey
1999–2004 Associate Dean Hacettepe University School of Medicine, Turkey
Currently:
2004– Consultant pathologist at Seirei Mikatahara Hospital, Hamamatsu, Japan and Clinical Lecturer on Gynecologic and Breast Pathology at Hamamatsu University School of Medicine, Japan
2007– Senior Editor of International Journal of Gynecologic Cancer
2007– Research collaboration with Prof Shih and Prof. Kurman at the Laboratory of Molecular Genetics of Female Reproductive Cancer, Johns Hopkins University, USA.

Subject of Interest: Carcinogenesis and metastasis, the aid of molecular techniques on conventional pathology in terms of diagnosis, reporting, treatment and prognosis especially on gynecologic neoplasms.
Clinical management of uterine serous papillary carcinoma

Medical Oncologist, The National Cancer Center, Singapore

John Chia Whay Kuang

Uterine Papillary Serous carcinoma (UPSC) represents <10% of all uterine cancers but accounts for more than 50% of relapses and deaths in Endometrial cancers, due to frequent extra-pelvic distant metastasis. Due to its rarity, evidence-based treatment algorithms specific to UPSC have been difficult to formulate and clinical decisions are guided by smaller observational studies or larger randomized trials with unselected endometrial cancer patients. Standard of care for UPSC encompasses comprehensive surgical staging (with or without omentectomy) and in patients with advanced disease, optimal cytoreductive surgery. Recurrence risk for early stage UPSC is high, and the benefit of administering adjuvant chemotherapy for early stage 1 disease has been supported by non-randomised observational data. In exceptional cases when the cancer is confined to a polyp with no residual cancer in the resected uterus, chemotherapy may be omitted. Radiation alone appears to have limited impact on survival in stage 1 UPSC, consistent with propensity for systematic spread in the early stages of UPSC. A phase 2 study exploring “sandwich” pelvic radiation in between 6 cycles of paclitaxel–carboplatin chemotherapy in patients with stage 1–3 UPSC, found the regimen highly efficacious and well tolerated. Paclitaxel–Carboplatin has been adopted as the standard of care for treatment of advanced disease. In GOG 208 advanced stage endometrial cancer patients were randomized to Doxorubicin–Cisplatin–Paclitaxel (CAP) versus Paclitaxel Carboplatin (PC), with the latter found to be non-inferior to the combination triplet. Newer agents such as inhibitors of angiogenesis, mTOR, PIK3CA, AKT, MEK, Src, ALK–1, and c–MET are currently being explored as single agents or in combination with chemotherapy in advanced endometrial cancers including UPSC. Most recently, the Cancer Genome Atlas has shown that in contrast to Endometrioid uterine tumor, UPSC shares many common molecular features with serous ovarian cancer and basal-like breast cancer. Her2 amplification and PIK3CA mutations were found in 27% and 42% of UPSC respectively thus presenting opportunities for targeted interventions.

Biosketch

Dr John WK Chia is a Senior Consultant Medical Oncologist at the Department of Medical Oncology, National Cancer Center Singapore, and Visiting Consultant, KK Women and Children’s Hospital. He received his undergraduate Medical training at the National University of Singapore and obtained his membership at the Royal College of Physicians Edinburgh in 2002. Upon completion of his medical oncology board examinations in Singapore, he trained with Professor Malcom Brenner and Professor Stephen Gottschalk at the Centre for Cell and Gene Therapy, Baylor College of Medicine, Houston from 2009–2010 in the field of cancer vaccines and immunotherapy, and completed a fellowship in Gynecological Cancers with Prof Stan Kaye and Susanna Banerjee at The Royal Marsden Hospital London. His major passion has been to advance the field of cancer therapeutics through clinical trials—and he is actively involved in developing numerous phase 1, 2 and 3, investigator-initiated clinical studies. He holds several scientific research grants and has published in the fields of inflammation, immunotherapy, and gynecological cancers. He is married with 2 active children and in his spare time, enjoys collecting Chinese Ink Painting and Asian Pottery.
Treatment of Stage IVB endometrial cancer: A retrospective multi-institutional study of 426 patients in Japan

Gynecology Service, National Kyushu Cancer Center, Japan
Takako Eto, Toshiaki Saito

Therapeutic decision making for patients with stage IVB endometrial cancer (EMCA) remains challenging because of the lack of available data for this group. We conducted a retrospective study of clinical and surgical stage IVB EMCA patients treated in Japan Clinical Oncology Group–related institutions, to examine clinicopathological prognostic factors and beneficial treatment modalities.

In all 426 patients with stage IVB EMCA, the median overall survival (OS) was 14 months. Patients were divided into primary surgery, primary chemotherapy, and palliative care groups according to their initial treatment; these groups had a median OS of 21 months, 12 months, and 1 month, respectively ($p < 0.0001$). Multivariate analysis identified good performance status (PS), endometrioid histology, absence of clinical intra–abdominal stage IVB metastasis, hysterectomy, and chemotherapy as independent predictors of longer OS. Fifty-nine patients who received primary chemotherapy followed by surgery had a similar OS to those in the primary surgery group.

Of the 248 patients who underwent primary surgery including hysterectomy, 93 had extra–abdominal metastases, most of which were unresectable. OS was longer in patients with less intra–abdominal residual disease, with or without extra–abdominal metastases. Multivariate analysis identified PS, histology, grade, adjuvant treatment, and intra–abdominal residual disease as independent predictors of OS.

In conclusion, our data suggest that stage IVB EMCA patients with good PS and low–grade tumor may be candidates for aggressive surgery and postoperative chemotherapy, even if they have extra–abdominal metastases. Primary chemotherapy followed by surgery may be a useful treatment choice in patients not suitable for primary surgery.

Biosketch

Education:
1984–1990 Kyushu University, Graduated with M.D. degree.

Appointments:
1990–1991 Dept. of OB/GYN, Kyushu University
1991–1992 Dept. of OB/GYN, Matsuyama Red Cross Hospital
1993–1994 Dept. of OB/GYN, National Nakatsu Hospital
1994 Dept. of OB/GYN, Kyushu University
1995–1998 Dept. of OB/GYN, National Beppu Hospital
1999–2003 Dept. of GYN, National Kyushu Cancer Center
2003–2004 Dept. of OB/GYN, Chihaya Hospital
2004–to date Dept. of GYN, National Kyushu Cancer Center
Between 1982 and 2009, the age-standardised incidence rate of cervical cancer decreased from 14.2 to 6.7 cases per 100,000 women and the age-standardised mortality rate of cervical cancer in women from 5.2 to 1.9 deaths per 100,000 women. In Australia, 771 new cases were diagnosed in 2009, accounting for 1.5% of all new cancers in women.

These encouraging results reflect a number of interventions including a national organised screening programme, with call and recall, and excellent colposcopy and treatment services.

School aged HPV vaccination was commenced in 2007 targeting 12–13 year old girls with a catch up programme for 2 years of 13–18 year olds in schools and 18–26 year old women through family doctors. Vaccination of 12–13 year old boys has recently commenced with a catch up programme targeting 13–15 year olds. School based programmes have been associated with an uptake of 71% for the 3 vaccine doses

An HPV vaccination registry has been established to link with the national pap smear registries.

A decline in genital wart incidence has been noted in both men and women under 21 years of age, there is evidence for a reduction in the prevalence in type specific HPV infections in 18–24 year old women with also a "herd protection effect" in non immunised women, and finally there is some preliminary evidence for a reduction in high grade abnormalities in women under the age of 20.

Many challenges, however, still exist: glandular cancers are on the rise, the participation rates for pap smear screening are falling and it is anticipated that with declining rates of high grade change, the test performance of cytology screening will fall in parallel.

Biosketch

Current Appointments:
Professor, Department of Obstetrics and Gynaecology, University of Melbourne
Clinical Director Women’s Cancer Research Centre and Consultant Oncology/Dysplasia Unit, Royal Women’s Hospital, Melbourne

Editorial Boards:
FIGO Annual Report
International Journal of Gynecological Cancer
Obstetrics & Gynaecology Communications
Journal of Oncology
Obstetric and Gynecological Research
Clinical Ovarian Cancer
Ovarian Cancer
Journal of Obstetrics and Gynaecology Research

Committees:
Immediate Past-Chair Australian & New Zealand Gynaecologic Oncology Trials Group
Immediate Past-Chair Gynecological Cancer Inter-Group
Co-Chair FIGO Oncology Committee
EUTROC–Member
Cervical cancer remains a challenge in Asia. According to the Globoscan database, it was the second most common cancer and the 4th leading cancer death among Asian women in 2008, constituting more than half of the burden over the world. However, the incidence and mortality varied widely within Asia. For example, the age-standardized incidence and mortality rates were 24.6 and 14.1 per 100,000 in South-Central Asia, while they were 4.5 and 4.4 per 100,000 in Western Asia, and 5 and 1.7 per 100,000 in Australia/New Zealand, respectively. This huge difference may be explained by the diversity in culture, religion, sexual behavior, resources and access to different preventive strategies against cervical cancer and treatment of its pre-invasive lesions.

Human papillomavirus is responsible for 99% of cervical cancer. HPV type 16 is the commonest causative agent in high-grade dysplasia and cervical cancer followed by types 18, 51, 52 and 58 in Asia. Both bivalent and quadrivalent vaccines are registered for primary prevention against type 16 and 18 which caused about 70% of cervical cancer worldwide. The effectiveness of these vaccines has been demonstrated to up to 9 years as reported in 2012 with minimal side effects. Since these are prophylactic vaccines, it would be most effective in women who have never been exposed to the virus, and would benefit mainly the next generation. In Australia, government-funded school-based vaccination programme commenced in 2007. It has been shown that since the introduction there was a 50% decline in the incidence of cervical intra-epithelial neoplasia (CIN) 2/3 and adenocarcinoma in-situ. This policy has also been adopted in Malaysia. Vaccination has also been funded by commercial companies and charity organisations in several places like Bhutan and Fiji.

Secondary preventive measures include cervical smear screening, visual inspection with acetic acid (VIA), and human papilloma virus (HPV) DNA tests, aiming to identify those pre-invasive lesions which would then be treated accordingly. National-wide or government-funded cervical smear screening programme has been in place for many years in certain countries like Australia, New Zealand, Singapore, Hong Kong, Japan and Korea. Some places like Thailand, Vietnam, Malaysia, the Philippines also attempt large-scaled screening but the coverage varies. Cervical cancer screening varies in different part in China. The use of VIA together with see-and-treat has been studied in Indonesia, rural Thailand, India and Bangladesh. On the other hand, HPV testing for high-risk types may offer another screening option and it may be more sensitive than cervical cytology in detecting high-grade lesions. However, the best strategy of using HPV testing as primary screening test is yet to be determined. It could be a co-testing though expensive, or triage with cytology. VIA, other new molecular test. The India experience of HPV test followed by VILI seems promising.

Lastly, general education on reducing high-risk behaviour such as delaying sexual debut, limiting the number of sexual partners, use of condoms, cessation of smoking, is also important.
Biosketch

Degree:

1978 M.B.B.S, Hong Kong
1993 F.H.K.A.M. (O&G) Foundation Member
1995 M.D., (HKU)

Professional accreditation:

Gynecological oncologist (RCOG UK, HKCOG HK)
Colposcopist (HKCOG HK)
Advanced level laparoscopist (HKCOG HK)

Post:

Tsao Yin-Kai Professor in Obstetrics & Gynaecology
Head, Professor, Department of Obstetrics & Gynaecology, The University of Hong Kong, Queen Mary Hospital, Hong Kong
Chief of Service in Obstetrics & Gynaecology, Queen Mary Hospital
Chief of Service in Obstetrics & Gynaecology, The University of Hong Kong–Shenzhen Hospital
How can we overcome adverse reactions in HPV vaccination in Japan?

Yokohama City University Hospital, Japan
Etsuko Miyagi

In Japan, approximately 3,500 women die from cervical cancer (CC) annually. Due to low participation in CC screening, both the incidence and mortality rates of CC have increased among women younger than 50 years in the past decade.

As part of recent changes in CC prevention strategies, voluntary inoculation with either human papillomavirus (HPV) bivalent (since 2009) or quadrivalent (since 2011) vaccine has become available. A tentative nationwide HPV vaccine program was announced by the Japanese government in November 2010, and in 2011, was widely implemented targeting girls aged 13–16 years. The program was funded 50% by the national government and 50% by each regional government until March 2013. The program proceeded successfully, achieving a prevalence of vaccination above 70% among the targets. In April 2013, total coverage of HPV vaccination by the Japanese government was endorsed as a formal national vaccination program. However, only 2 months later, on June 22, the Ministry of Health, Labor and Welfare (MHLW) suspended the approval of HPV vaccines to investigate every adverse reaction closely. Girls suffering from severe multiple pains have received focused attention, and the mass media has repeatedly reported anti-HPV vaccination movements. In September 2013, the Japan Society of Obstetrics and Gynecology and related associations submitted a request to MHLW to promote re-evaluation of the safety profile of HPV vaccines in order to reinstate approval, referring to important data and international statements about their safety. We report here the latest status of HPV vaccination in Japan.

Biosketch

1988– M.D., Yokohama City University School of Medicine
1995– Ph.D., Yokohama City University Graduate School of Medicine
2001– Instructor, Dept. of Ob/Gyn, Yokohama City University Hospital
2006– Associate Professor, Dept. of Ob/Gyn, Yokohama City University Hospital
2008– Director, Cancer Chemotherapy Center, Yokohama City University Hospital
2013– Board Member of Japanese Society of Obstetrics and Gynecology
Cervical cancer control in India: Strategy in urban vs rural areas

Neerja Bhatla

Department of Obstetrics & Gynaecology All India Institute of Medical Sciences New Delhi, India

Cancer of the uterine cervix is the commonest cancer among women in India with an estimated 134,420 new cases and 72,825 deaths each year. There is a variation in the prevalence of cervical cancer between urban and rural areas; in the larger cities, breast cancer is now the most common, with cervical cancer at second place.

The major factors responsible for the high prevalence include poor awareness about this cancer and its preventable nature, lack of screening infrastructure and the absence of a national screening program. Pap smear coverage in India is very low: only 2.6% women have been screened regularly: 4.9% in urban and 2.3% in rural areas. There is evidence that a single round of HPV testing can reduce the cervical cancer burden, but it is not possible to implement this in the absence of an affordable test. Screening by VIA, the only practical option, is being introduced at a national level. In under-served areas, a “screen-and-treat” strategy is expected to decrease loss to follow-up.

HPV vaccination can provide an effective means of primary prevention–vaccination infrastructure is available for routine childhood immunizations, which are well accepted in both urban and rural areas. A two-dose regimen will reduce the problems of compliance with a multi-dose vaccine. Studies have been done to determine the best strategy of vaccinating the teenage group. Social issues and barriers need to be addressed. A combination of vaccination and screening may eventually be the best solution to control the cervical cancer menace in India.

Biosketch

Neerja Bhatla, MBBS, MD, FICOG, FNAAMS, is Professor in the Department of Obstetrics & Gynaecology at the All India Institute of Medical Sciences, New Delhi, with a special interest in Gynaecologic Oncology and Preventive Oncology. In the last decade, she has successfully undertaken numerous research projects in cervical cancer screening in low-resource situations, HPV epidemiology, a trial of the rapid, affordable HPV test and HPV vaccine trials. She has been the recipient of a UICC Fellowship at the University of Cape Town on the subject of Community-based Screening Programs and has worked in collaboration with the International Agency for Research on Cancer (IARC), Lyon, France and the Johns Hopkins Bloomberg School of Public Health, USA. Professor Bhatla has been a member of several committees on issues of cervical cancer prevention. She has published over 130 papers in national and international journals, has contributed to FIGO, FOGSI and AOGIN guidelines, written chapters in books and monographs and edited the International Edition of Jeffcoat’s Textbook of Gynaecology. She is also on the review boards of several scientific journals, member of grant review panels and supervisor for MD and PhD theses. She has been actively involved in human resources training, teaching undergraduate and postgraduate courses as well as training of paramedical workers and has been examiner for MBBS and MD examinations at various universities. Professor Bhatla is President-Elect of the Asia Oceania research organization on Genital Infections and Neoplasia (AOGIN); Member, Gynaecology Oncology Committee, FIGO; Member, Education Committee, International Federation of Cervical Pathology and Colposcopy (IFCPC); Standing Committee Member, International Gynaec Cancer Society (IGCS); Vice President of the Association of Gynaecologic Oncologists of India (AGOI); Executive Member of the Indian Society of Colposcopy and Cervical Pathology (ISCCP) and Founder-President of AOGIN-India.
Thailand has established the National Cervical Cancer Screening program since 2005 with each phase of five-year interval. The first phase was from 2005–2009, targeted population of ten millions for screening from age 35 to 60 years at every five years with Pap smear was used as the major method and VIA was for some selected areas. The first phase achieved the coverage of 27% with the abnormal result from ASCUS and higher was 1.5%. The current second phase from 2010–2014 is underway with the targeted population of thirteen millions from age 30 to 60 years by the method of Pap smear and VIA again. Result from the previous screening program was not able to obtain a satisfactory coverage and the statistic of both incidence and mortality from cervical cancer is not improving significantly. Barriers to compliance with guidelines and efficacy of various intervention to increase screening rates are attracting the attention. Primary prevention by national vaccination program of HPV vaccine together with the screening program by HPV test will be considered as the next strategy for the national cervical cancer control in Thailand.

Biosketch

Wisit Supakarapongkul, MD, RTCOG; Subspecialty Board of Gynecological Oncology is the Department Chairperson, Department of Obstetrics & Gynecology and Chief of the Department of Gynecology Oncology, Bumrungrad International Hospital.

Dr. Wisit received his medical degree and residency training in Obstetrics and Gynecology from Faculty of Medicine, Ramathibodi Hospital, Mahidol University. His post graduate training and fellowship in Gynecologic Oncology were at National Women’s Hospital Auckland, New Zealand and Queen Elizabeth Hospital Gateshead United Kingdom under the British Chevening Scholarship. His previous position was the Head of Department of Gynecology Oncology, National Cancer Institute of Thailand.

Dr. Wisit’s interests include all fields of Gynecologic Oncology with special interest in Prevention and treatment of Cervical Cancer (The most common Gynecologic cancer in Thai woman). He has organized numerous courses of Colposcopy and treatment of Preinvasive Cervical Cancer all over the country for the past 10 years.

Currently his positions include:
- President of Thai Gynecologic Cancer Society (TGCS)
- Board Committee of Asia Oceania Research Organization on Genital Infections and Neoplasia (AOGIN)
- Senior Consultant of Gynecologic Oncology Department, National Cancer Institute of Thailand
Cervical cancer control in multinational society: 
Challenge in Singapore

Department of Obstetrics & Gynaecology, Singapore General Hospital, Singapore
Sun Kuie Tay

The aged standardised incidence rate of cervical cancer in Singapore has been declining by 3.7% per annum over the last 25 years. The most recent incidence rate was 6.7/100,000 women for 2008–2012. This rate remains much higher than some other developed countries and indicates the need of a continual concerted effort in cervical cancer prevention.

Cytology screening was introduced in Singapore in the 1960s in an opportunistic approach until 2004 when a national screening programme for all women between 25 and 69 years old was launched. The penetration rate of opportunistic screening was high. A national health survey conducted by the Ministry of Health Singapore in 2010 found that 87.1% of eligible women were aware of Pap smear test. The awareness was the highest among women aged 35 to 49 years old (92.9%) compared to those between 25–34 years old (83.3%) and 50–69 years old (83.4%), and among women with more than 10 years of formal education (92.8%) compared to less than 6 years of education (69.3%). There was no discernible difference in awareness of Pap smears between the major ethnic groups (83.1% to 87.6%). Of all eligible women, 71.3% had ever had a Pap smear test and 47.9% had undergone the test within the last 3 years. The screening rate was the highest for women aged between 35 and 49 years old (80.8%) and for those who had attended 10 or more years of formal education (52.1%). Screening rate was higher for Chinese (49.1%) and Indian (48.2%) compared to Malay (39.4%). The most common reason for women not taking the screening tests was the belief that screening was unnecessary as they were healthy (25.4%). Almost an equal proportion of women failed to attend screening for the reasons of unaware of screening (11.5%) and being not sexually active (10.9%). Disappointingly, only 10% of screened women returned for a repeat screening within 3 years.

The positive impact of cytology screening is obvious. Between 2002–2007 and 2008–2012, the number of cases of CIN3 in Singapore increased by 5.3% from 1501 cases to 1581 cases while the invasive cancer decreased by 10.2% from 1014 cases to 911 cases. The case reduction was seen for stage I (−16.7%), stage II (−11.9%) and stage III (−34.5%) cancer but an increase was seen for stage IV cancer (+29.4%). It is noteworthy that the case reduction for invasive cancer was most marked among Chinese (−12.0%), followed by Indian (−9.2%) and Malay (−6.7%). The decrease in invasive cases was most significant for women between 45–54 years old (−16.7%) and 65–74 years old (−26%). An increase in number of cases of invasive cancer by 9.8% was recorded for women above 75 years old.

The challenge of cytology screening is to increase the participation rate of screening among women with few years of education, women beyond 50 years old, and Malay women.

Additional cervical cancer prevention strategy through HPV vaccination has been available in Singa-
since 2006. Ministry of Health Singapore encourages adolescent girls and young women between 9 years old and 26 years old to undergo HPV vaccination. The cost of vaccination is payable by the national medisave account since 2011. National statistics on the uptake rate of HPV vaccination is not available but a recent survey by the Health Promotion Board on women with children between 11 and 14 years old showed that the awareness of HPV was similar between Chinese (57%), Malay (50%) and Indian (56%). Of all the women surveyed, 85% were unaware of the two existing vaccines and 88% had never sought information on HPV or HPV vaccines. Only 2% of the surveyees have vaccinated their daughters against HPV infection. Lack of information, unaware of availability of HPV vaccines and the misconception on the need of HPV vaccination were the most commonly cited reasons for not bringing their daughters for HPV vaccination. The challenge in increasing the uptake rate of voluntary HPV vaccination is daunting without a school health mass vaccination programme.

Conclusion: A declining trend in the overall incidence rate of cervical cancer is seen in Singapore. Curbing the burden of invasive cancer among women above 75 years old and for stage IV cancer is the major challenge today. The participation rate of cytology screening is satisfactory only for women between 35 and 49 years old. Efforts in increasing screening of women with lower education level and older age and among Malay women are needed. HPV DNA test as an alternative to primary cytology screening to reduce number of screening test within screening period or as a self- collection sample test is an attractive proposition to improve screening efficacy. Comprehensive public education on HPV vaccination and incorporation of HPV vaccine into the national immunisation programme with a school-based programme are the top priority for a long-term sustainable cervical cancer prevention strategy which will transcend the multi-ethnic and multi-cultural barriers in cervical cancer prevention in Singapore.

Biosketch

Position: Senior Consultant
Singapore general Hospital, & National Cancer Centre Singapore
Qualification & Education:
MBBS, University College London, UK 1976–1981
MD, University of London, UK 1989
Fellow, Royal College of Obstetricians & gynecologists London 1996
Fellow, Academy of Medicine Singapore 1990
Associate Professor, Yong Loo Lin School of Medicine, NUS 1999–
Professor, Duke–NUS Graduate Medical School, NUS, 2012
Area of Interest:
HPV epidemiology and tumor immunology
Cervical cancer screening
Gynecology Oncology surgery and epidemiology
In Taiwan, cervical cancer is the seventh most common cancer in women and the sixth leading cause of female cancer mortality. Since 1995, the national health insurance (NHI) of Taiwan has made free annual cervical screening available to all Taiwanese women aged ≥30 years. The age–standardized incidence of cervical cancer in Taiwan has decreased from 29.09 per 100,000 in 1981 to 11.86 per 100,000 in 2009. The age–standardized cervical cancer mortality decreased from 7.14 per 100,000 in 1981, 9.53 per 100,000 in 1995 to 4.09 per 100,000 in 2011. Starting from 1997, the rate of Pap smear screening in the previous three years has increased from 37.5% stabilized at 57%—59% and 5 year screening rate stabilized at 70%. From 2010, self–sampled HPV testing has been offered to those who had not participate Pap in the past 6 years. A study prospectively enrolled 141 women with newly diagnosed cervical cancer at Chang Gung Memorial Hospital, Taiwan between January 2007 and June 2008. Of the 141 patients, 62 (44.0%) had never had a Pap smear before diagnosis, 10 (7.1%) did not know about the Pap smear, only 30 (21%) reported having had more than three Pap smears in their lifetime. Stepwise logistic regression identified perceived potential pain, fear of embarrassment, and the number of sexual partners of the male consort as independently associated with the number of previous Pap smears (0 versus ≥1). The need for developing more comfortable methods of cervical cancer screening is highlighted. Education strategies should be focused on improving access to never–users. The fact that HPV testing is useful in primary screening for cervical neoplasms is widely accepted in medical community. A study conducted between October 2007 and April 2008 enrolled 953 undergraduate women aged 17–36 years in 5 universities in Southern Taiwan. 70% of participants agreed that cervical cancer could be prevented and was a severe disease, and 80% knew the purpose of Pap testing. However, only 49% were aware of HPV. Most of the undergraduate women believed themselves unlikely to acquire cervical cancer or HPV infection. Educational campaigns focusing on cervical cancer screening and HPV infection are needed, particularly for sexually active undergraduate women. Between Mar 2010 and Sep 2012, a total of 10,693 women who have not attended Pap smear screening in the past 5 years were invited. Of them, 383 responded and 381 submitted questionnaire but only 305 (2.85%) with informed consent and HPV test samples returned. Around 90% of respondents found self–obtained HPV test acceptable. Although studies from the western countries suggest that self–sampling could increase participation among non–responders, our study indicates a different approach must be explored to improve the coverage rate of Pap smear of the culture characteristics like Taiwan. HPV vaccines will impact profoundly of cervical cancer, although the impact of prophylactic vaccines on the incidence of cervical cancer can only be observed over the course of decades. A decrease in incidence of high grade cervical abnormalities within 3 years after the implementation of a population–wide HPV vaccination programme in Australia has been reported. Prophylactic HPV vaccines have been available since 2007, however only a few cities or counties are providing population–based vaccination of 12 to 13 year–
old girls by public funding. Efforts should be made for the public awareness about HPV and HPV vaccination that the war against cervical cancer can be forwarded to a new breakthrough.

Biosketch

Dr. Chyong-Huey Lai is Professor of Chang Gung Memorial Hospital (CGMH) and Chang Gung University, Taoyuan, Taiwan. She is Chairperson of Drug Advisory Committee, Taiwan Food and Drug Administration. She is also the Vice Chair of the Research and Development Committee at Chang Gung Medical System (2012–present). Dr. Lai obtained her M.D. degree from College of Medicine, National Taiwan University in 1982. She was Chairperson of Department of Ob/Gyn (2000–2007), CGMH. She was President of the Taiwan Association of Gynecologic Oncologists (2002–2004) and a Council Member of International Gynecologic Cancer Society (2002–2006). Under her leadership, the Gynecologic Cancer Research team of CGMH engaged in many clinical and basic researches for improving management of gynecologic cancer care and in translational researches. Her team participates actively in a national multi-center clinical trial study group. Dr. Lai is the founding President of Asian Gynecologic Oncology Group (AGOG). She is also Chair of Cervical Disease Committee of the Taiwan Cooperative Oncology Group (TGOG). Dr. Lai’s areas of research are cervical cancer prognosis, screening, HPV molecular epidemiology, molecular imaging, and gynecologic cancer biology and therapeutics. She received Excellence Award from the National Science Council, Taiwan in 2007 and 2010, respectively for her contribution in medical research. She serves several editorial boards, such as “Gynecologic Oncology” (2005 till present) and “International Journal of Gynecological Cancer” (2001–2008).
Palliative Care for Women with Gynecological Cancer

Pain management in women with advanced cervical cancer

University of Cape Town, South Africa
Lynette A. Denny

The majority of women diagnosed with cervical cancer in developing countries present at an advanced stage, usually stage 3B. Many of these cases are only suitable for palliation, although with full course of whole pelvic radiation and brachytherapy, the 5 year survival is approximately 30%. Pain in women with advanced cancer is caused by inflammatory process, perineural invasion, lymph node metastases, bony metastases, recto-vaginal and vesico-vaginal fistulae. It is essential that the exact cause of the pain be established in order to devise a coherent and meaningful treatment plan. In women who are treated with radiation, treatment related complications include bowel perforation, bowel obstruction, bowel fistulae, cystitis and proctitis, among others. Again, establishing the exact cause of the pain is central to management of the pain. Isolated bony metastases may respond well to radiation, whereas bowel obstruction or bowel and other fistulae may require urinary or bowel diversions in order to relieve pain in the palliative setting. Careful and meticulous clinical assessment is required to avoid needless suffering in these women.

Biosketch

Personal Statement:
This grant will contribute to developing models of clinical medical education in women’s health at both undergraduate and postgraduate levels in Africa. I am a clinician and specialist in obstetrics and gynaecology and will contribute in particular through of teaching and research experience in clinical women’s health as well as in community based obstetrics and gynaecology service delivery. I have been directly involved in the the Obstetrics and Gynaecology Department programs for clinical medical education that contribute to both training of health care professionals and developing research capacity in maternal health, in relation to HIV, hypertension, sepsis, fertility regulation; cervical cancer prevention and reducing the burden of HPV and associated disease (including HPV vaccination strategies) and violence against women. The department of Obstetrics and Gynaecology has extensive links in Africa through the network of contacts with over 400 health professionals in 42 countries in Africa through the organization AORTIC. This will strengthen the building of continental links within this linked award grant and the programmatic award. I have been involved in teaching medical students and specialists in clinical women’s health over a large number of years. This has been aimed at finding feasible models for service delivery in low resources areas such as in Africa. I have been involved in as a principal investigator and co-investigator a number of international grants, including NIH grants in collaboration with the Women’s Health Research Unit in the area of cervical cancer.

Professional Experience:
1984-1985 Internship, Groote Schuur Hospital/University of Cape Town
1985-1986 Senior House Officer, Red Cross Children’s Hospital, Cape Town
1986-1987 Senior House Officer, Department of Obstetrics & Gynaecology, Groote Schuur Hospital, Cape Town
1987-1989 Senior House Officer, Department of Medicine, Groote Schuur Hospital, Cape Town
1989-1993 Registrar, Department of Obstetrics & Gynaecology, Groote Schuur Hospital, Cape Town (including fellowship in Gynecologic Oncology)
1994-1997 Specialist, Department of Obstetrics & Gynaecology, Groote Schuur Hospital, Cape Town
1997-2005 Associate Professor & Senior Specialist, Department of Obstetrics & Gynaecology, University of Cape Town
2005-Jul 2007 Professor & Senior Specialist, Department of Obstetrics & Gynaecology, University of Cape Town
Aug 2005–Present Professor & Principal Specialist, Department of Obstetrics & Gynaecology, University of Cape Town
Jan 2010 Head of Department
Palliative Care for Women with Gynecological Cancer

Assessment of quality of life in palliative care for women with gynecologic cancer

Department of Obstetrics & Gynecology, Women’s Health, Yokohama City University Hospital, Japan

Akiko Sukegawa, Etsuko Miyagi, Fumiki Hirahara

The World Health Organization has defined palliative care as “an approach that improves the quality of life of patients and their families facing the problems associated with life-threatening illness.” Although quality of life (QOL) is a primary palliative outcome, its measurement remains difficult. QOL is increasingly being recognized as an important outcome in randomized clinical trials, and several instruments for measuring health-related QOL in cancer patients are currently available. A typical approach is the use of a generic health status assessment tool such as the Medical Outcomes Study 36-item Short-Form Health Survey or the European Organization for Research and Treatment of Cancer Quality of Life Questionnaire (EORTC QLQ–C30) combined with a set of questions specific to the given symptom or tumor type. However, in the palliative care setting, patients suffer from severe symptoms and thus find it difficult to complete multiple lengthy questionnaires. Therefore, short-form questionnaires such as the EORTC QLQ–C15–PAL were developed to better assess the QOL of palliative cancer care patients. The descriptive approach is another assessment method for QOL. Although the ambiguity inherent in this approach makes it unsuitable for clinical research, it can be effectively applied for individual patients in the clinical setting. QOL evaluation instruments have been utilized for clinical research, so it is thought that similar instruments would be useful for clinicians who provide individual patients with palliative care. Therefore, an effort has been made to elucidate what constitutes both substantial changes and minimally important differences in QOL assessment scores for patients.

Biosketch

1988–1994 School of Medicine, Medical Course, Yokohama City University
1994–1996 Junior physician at Yokohama City University Hospital
1996–1999 Senior physician of Department of Obstetrics and Gynecology, Yokohama City University Hospital, Odawara Municipal Hospital and Yokohama Municipal Citizens Hospital
1999–2004 Research Associate of Department of Obstetrics and Gynecology, Yokohama City University Hospital
2004–2008 Graduate School of Medicine, Yokohama City University
2008–2011 Assistant Professor of Department of Obstetrics and Gynecology, Yokohama City University Hospital
2011– Visiting Researcher of Department of Obstetrics and Gynecology, Yokohama City University and physician of community medicine (Women’s Health, Palliative Medicine and School Health)

Membership of societies
Japan Society of Obstetrics and Gynecology
Japanese Society of Gynecologic Oncology
Japanese Society for Palliative Medicine
Japan Society Adolescencentology etc.
Palliative Care for Women with Gynecological Cancer

Investigation of the prevalence of neuropathic pain in gynecologic cancer patients and efficacy and safety of oxycodone for pain management (INGYCO study) in Japan

Department of Obstetrics and Gynecology, St Marianna University School of Medicine, Japan†, Department of Obstetrics and Gynecology, Tottori University School of Medicine, Japan‡, Cancer Chemotherapy Center, Yokohama City University Hospital, Japan§, Department of Obstetrics and Gynecology, Tokyo Medical University, Japan∥

Akiko Tozawa†, Shinya Sato‡, Muneaki Shimada§, Nao Suzuki†, Etsuko Miyagi∥, Masaki Fujimura∥

An international epidemiological study showed that 30% of cancer patients had pain at diagnosis, increasing to 50–70% during active treatment and 60–80% in the advanced stage. Gynecologic cancer patients often have pain, but there have been few reports about cancer pain in these patients.

Cancer pain is classified into nociceptive or neuropathic pain. In a clinical trial, approximately 60% of patients had nociceptive pain and 40% had neuropathic pain, and around 50% of the patients with neuropathic pain also had nociceptive pain. Neuropathic pain can be intractable, and its treatment is often difficult.

The prevalence of neuropathic pain may be high in gynecologic cancer patients due to tumor compression of lumbar and sacral nerves or use of neurotoxic anticancer drugs, but its actual prevalence is unclear.

The Guidelines of the International Association for the Study of Pain recommend that opioids should be the first-line drugs for treating neuropathic pain. However, there have been few prospective investigations into the efficacy and safety of opioids for neuropathic pain in cancer patients.

Accordingly, we planned an intervention study in gynecologic cancer patients to determine the prevalence of neuropathic pain and to evaluate the efficacy and safety of oxycodone hydrochloride hydrate extended-release tablets (OxyContin) for neuropathic pain of 4 or higher on the Numeric Rating Scale (NRS), which is difficult to manage.

Biosketch

Education:
1992–1998 M.D., St. Marianna University, School of Medicine, Kawasaki, Japan
2005–2008 Ph.D. in Diagnostic Pathology, St. Marianna University, School of Medicine, Kawasaki, Japan

Post-Graduate Medical Training in Obstetrics and Gynecology:
1998–2000 Residency Training at Keio University Hospital, Tokyo, Japan
2000–2001 Residency Training at Kawasaki Municipal Hospital, Kanagawa, Japan
2001–2002 Residency Training at Yamato Municipal Hospital, Kanagawa, Japan

Experience in Obstetrics and Gynecology:
2009–2011 Instructor at St. Marianna University School of Medicine, Kanagawa, Japan
2011–present Assistant Professor at St. Marianna University School of Medicine, Kanagawa, Japan
A characteristic feature of ovarian cancer is intraperitoneal (IP) spread of disease even in the early stages. IP delivery of chemotherapy has been considered a reasonable therapeutic approach in patients with ovarian cancer. Three large randomized phase III clinical trials conducted by the Gynecologic Oncology Group have shown that IP chemotherapy is clearly superior to intravenous (IV) cisplatin–based chemotherapy in survival. Based on the results of these trials, the National Cancer Institute recommended that strong consideration should be given to a regimen containing IP cisplatin combined with IV only or IV plus IP taxane in women with optimally debulked epithelial ovarian cancer. However, this treatment has not achieved broad acceptance in gynecologic oncology community mainly because of toxicity concerns. More safe and convenient therapy is now needed.

Three currently ongoing randomized Phase III trials including JGOG 3019 (iPoCC) trial will provide extremely important information about several unsolved questions. These are including the following questions:

1. Is IP carboplatin replaceable to IP cisplatin?
2. Is IP paclitaxel required?
3. Is combination with targeted agents such as bavacizumab effective?
4. Is IP chemotherapy effective in suboptimal debulked epithelial ovarian cancer?
5. Is combination with the strategy of neoadjuvant chemotherapy followed by interval debulking surgery feasible?

The role of IP chemotherapy in epithelial ovarian cancer would be settled based on these informations. I will discuss about the future of IP chemotherapy in this presentation.

Biosketch

Education:

School
Okayama University Medical School

Location
Okayama, Japan

Date
1987–1993

Degree
M.D.

Specialized Training:
Investigational Associate in the Postgraduate Educational Program resulting in Ph.D.
Okayama University School of Medicine, 1993–2002.

Professional Experience:

April 2013–Present
Director, Department of Gynecologic Oncology, Hyogo Prefectural Cancer Center, Akashi–city, Japan

October 2009–March 2013
Associate Professor, Department of Gynecologic Oncology, Saitama Medical University International Medical Center, Hidaka–city, Japan

April 2007–September 2009
Assistant Professor, Department of Gynecologic Oncology, Saitama Medical University International Medical Center, Hidaka–city, Japan

August 2006–March 2007
Assistant Professor, Department of Obstetrics and Gynecology, Saitama Medical University, Iruma, Japan

April 2003–July 2006
Junior Staff, Department of Obstetrics and Gynecology, Kawasaki Medical School, Kurashiki, Japan

Sept. 1999–March 2003
Junior Staff, Department of Obstetrics and Gynecology, Okayama University Medical School
April 1999-Aug. 1999  Attending Doctor, Department of Obstetrics and Gynecology, Tonosho Central Hospital, Tonosho, Japan
April 1996-March 1999  Attending Doctor, Department of Obstetrics and Gynecology, Ehime Central Prefectural Hospital, Matsuyama, Japan
Sept. 1995-March 1996  Resident, Department of Obstetrics and Gynecology, Okayama University Medical School, Okayama, Japan
Sept. 1994-Aug. 1995  Resident, Department of Obstetrics and Gynecology, Tottori City Hospital, Tottori, Japan.
Sept. 1993-Aug. 1994  Resident, Department of Obstetrics and Gynecology, Himeji Red Cross Hospital, Himeji, Japan.
April 1993-Aug. 1993  Resident, Department of Obstetrics and Gynecology, Okayama University Medical School, Okayama, Japan.
Management of Malignant Ascites in Gynecological Cancer

Efficacy and safety of CART (cell–free and concentrated ascites reinfusion therapy) in gynecological cancer patients

Department of Obstetrics and Gynecology, Juntendo University Faculty of Medicine, Japan
Yasuhisa Terao

Malignant ascites is a frequent problem for gynecologic carcinoma patients. Typical symptoms such as abdominal distention, nausea, vomiting, anorexia, dyspnea and limbs edemas reduce quality of life. It is important to control ascites to improve QOL. The methods of management ascites are diuretics, restricted intake of Sodium, paracentesis, peritoneovenous shunts, intraperitoneal chemotherapy and etc.

CART (cell–free and concentrated ascites reinfusion therapy) is one of the method of paracentesis, but the removed ascites is not discarded and is reused. CART is to remove cell components (red blood cell, cancer cells, bacteria and etc.) from collected ascites, and perform filtration and concentration, and then return only essential nutrients, such as albumin, into intravenous.

We started CART therapy from 2009, performed 64 cases in 31 patients. Indication of CART in our department is uncontrollable massive ascites patients without DIC and bleeding. The clinical effect of CART observes the improvement of abdominal distention in all patients, and weight and abdominal circumference were decreased.

Change of the total protein, albumin, and electrolyte in was accepted before and after CART therapy. Although transient fever was observed, it has improved on the next day. Hypotension, or other adverse effects were not observed.

CART was safe and is expected to improve the subjective symptoms and general condition of the patients, CART therapy should be used not only for palliation but also as supplementary treatment for cancerous peritonitis.

I will present the current our data and the present and future options for the management of malignant ascites.

Biosketch

Education:
1996: Graduate from Juntendo University School of Medicine, Tokyo, Japan
1998–2002: Postgraduate course, Department of Obstetrics and Gynecology, Juntendo University, School of Medicine, Tokyo, Japan

Degree:
1996: Igakushi diploma (MD), Juntendo University
2002: PhD in Medicine, Juntendo University

Board certification:
2001: Japan Society of Obstetrics and Gynecology
2008: Japan Board of Cancer Therapy
2009: Japan Society of Gynecologic Oncology

Society:
Japan Society of Obstetrics and Gynecology
Japan Society of Gynecologic Oncology
Japan Society of Surgery
Japan Society of Clinical Oncology
International Gynecologic Cancer Society

Position held:
1996–1998: Clinical resident, Department of Obstetrics and Gynecology, Juntendo University School of Medicine, Tokyo, Japan
1998–2002: PhD student, Department of Obstetrics and Gynecology, Juntendo University School of Medicine, Tokyo, Japan
2002–2003: assistant, Department of Obstetrics and Gynecology, Juntendo University School of Medicine, Tokyo, Japan
2003–2005: Postdoctoral research associate, University of Illinois at Chicago Biochemistry and Molecular Genetics
2005–2006: Assistant, Department of Obstetrics and Gynecology, Juntendo University School of Medicine, Tokyo, Japan
2006–2007: Lecture, Department of Obstetrics and Gynecology, Juntendo University School of Medicine, Tokyo, Japan
2007–: Associate professor, Department of Obstetrics and Gynecology, Juntendo University Faculty of Medicine, Tokyo, Japan
Role of da Vinci in Gynecological Cancer Surgery

Clinical evidence and application on robotic gynecologic oncology

Department of O. & G, China Medical University Hospital, Taiwan
Wu-Chou (William) Lin

Clinical application of robotic gynecologic oncology:
- High para-aortic nodes dissection:
- endometrial Ca./early ovarian Ca.
- Obese/thin Pt
- Omentectomy & upper abd. Surgery (diaphram)
- Pelvic lymphadenectomy
  Radical hysterectomy/radical tracheectomy/nerve-sapring or not for cervical cancer

Tips & tricks Of high PALND (1):
- Steep head down (tredelenberg) position
- Empty stomach gas of P’t with N-G tube
- Turn over the small bowel upward
  Open the peritoneum along the Aorta up to the 2nd portion of Duodenum (recess)
  Dissect the bowel and ureter together away from retro-peritoneum (downward push maneuver)
- Suspend the peritoneum–bowel lateral, upward to the Ant. Abdominal wall.
- Ureter attached to peritoneal–bowel side

Tips & tricks Of high PALND (2)
- Docking: Perineal/side (thin Pt), shoulder (obese P’t)
- Scope: 0/30 degree
- Adjust arm 3 upward/downward (cephalicly/caudally) during surgery
- Change instruments in different port side if need
- Dissect away the vital organs
- Skeletonized the Aorta and IVC
- Surgery in the operation box (boundary)

Biosketch

Education:
1994–1996 Medical degree, China Medical University (CMU)
1998–2000 Master of Medicine, School of Medicine, CMU
2003–2012 Ph.D. of Medicine, School of Chinese Medicine, CMU

Current Appointment:
Chair, Depart. of O. & G., China Medical University Hospital
Director of Minimally Invasive Gyn Endoscopy Division, Former President of Taiwan Association for Minimally Invasive Gynecology (TAMIG)
Former President of Asia-Pacific Association for Gynecologic Endoscopy and Minimally Invasive Therapy (APAGE) 2010
Board member of Taiwan Association of Obstetrics and Gynecology (TAOG)
Board member of Taiwan Urogynecology Association (TUGA)
Role of da Vinci in Gynecological Cancer Surgery

Port placement consideration, patient positioning, various docking technique, and use of the 3rd arm for gynecologic surgeries

Department of O. & G, China Medical University Hospital, Taiwan
Wu-Chou (William) Lin

Outline:
- Operation room set-up
- Steps of Effective Robotic surgery

Operation room set-up:
- Robotic set (Davinci system): surgical car, surgical console,
- Surgical (P’t) table: steep head down & rotation function
- Adequate OR space
- Traditional Lsc set
- Effective team: each member of the team no their roles

Steps of effective robotic surgery (1):
- patient position: steep tredellenberg position
- Insufflate prior to port marking
- Appropriate port placement
- Select proper instrumentation
- Various docking techniques
- Operate the instrument under direct vision
- Minimize suction & use sponges to clean Op. field
- various docking technique, and
- Active and proper use of the 3rd arm for surgery

Steps of effective robotic surgery (2) (Port placement consideration):
- Camera port: thin P’t 2 cm off to the midline, obese P’t at the midline umbilicus level
- Arm-1 Port placed 8~10 cm lateral to the camera port.
- Arm-3 port 8~10 cm Lat. to arm-1 port but 2 cm Lat. to the mid–clavicular line (before Ant. axillary line)
- Arm-2 port placed 8~10 cm lateral to the camera port but opposite to the arm-1 port
- All of the robotic ports are placed aligned in a obtuse angle about 170~175 degree
- Assistant port in lower quadrant contralateral to the arm-2 port and 2 cm lateral to the arm-2 port

Steps of effective robotic surgery (3) (Varous docking techniques):
- Perineal docking:
main advantages in high para-aortic nodes dissection in thin Pt., omentectomy
- Side docking:
  - main advantages is vaginal access and uterine manipulation, limited to upper abd. acess
- Shoulder dacking:
  - main advantages in high para-aortic nodes dissection in obese Pt., omentectomy, upper abdominal surgeries/diaphragm reajion. Rotate Pt table/move the surgical car

Biosketch

Education:
1994–1996 Medical degree, China Medical University (CMU)
1998–2000 Master of Medicine, School of Medicine, CMU
2003–2012 Ph.D. of Medicine, School of Chinese Medicine, CMU

Current Appointment:
Chair, Depart. of O. & G.; China Medical University Hospital
Director of Minimally Invasive Gyn. Endoscopy Division, Former President of Taiwan Association for Minimally Invasive Gynecology (TAMIG)
Former President of Asia–Pacific Association for Gynecologic Endoscopy and Minimally Invasive Therapy (APAGE) 2010
Board member of Taiwan Association of Obstetrics and Gynecology (TAOG)
Board member of Taiwan Urogynecology Association (TUGA)
Role of da Vinci in Gynecological Cancer Surgery

Learning curve of robotic assisted hysterectomy: Unedited procedure walk through

Director of Gynecologic Oncology, Center of Hope & Renown Institute for Robotic and Minimally Invasive Surgery, USA
Peter C. Lim

The introduction of daVinci Robotic Surgery (DVRS) to the field of gynecologic surgery has afforded many patients the option of minimally invasive surgery. Hysterectomy is an integral part of treatment of gynecological malignancy. The adoption of robotic assisted hysterectomy requires a learning curve, proper training, familiarity with the technology, and commitment by the surgeon on the safe use of robotic surgery. The learning curve of achieving efficient robotic hysterectomy will be presented and discussed. Unedited video presentation of how to perform efficient robotic hysterectomy in less than 30 minutes will be presented.

Biosketch

Graduated from Hahnemann University, completed internship and residency in Obstetrics & Gynecology at Women's and Children's Hospital at L.A. County, University of Southern California, and Fellowship in Gynecologic Oncology at Mayo Clinic. He is currently the Medical Director of Gynecologic Oncology and Robotic Surgery at Center of Hope and Robotics and Minimally Invasive Surgical Institute at Renown Regional Medical Center. Dr. Lim has published in peer reviewed journals and presented at International meetings on topics of Robotics and Minimally Invasive surgery. He was the recipient of Robotics Technology paper award at the AAGL 2009, 2011, and 2012. He has been named one of the 5 Epicenter Surgeons in Gynecologic Oncology in the United States. He has performed over 1200 robotic procedures.
Role of da Vinci in Gynecological Cancer Surgery

Role of robotics in cervical cancer treatment: Operative advices and know how

Director of Gynecologic Oncology, Center of Hope & Renown Institute for Robotic and Minimally Invasive Surgery, USA

Peter C. Lim

Cervical cancer is the most common gynecological cancer in the world. The surgical treatment for cervical cancer has evolved over the last 20 years from open radical hysterectomy (ORH), to laparoscopic assisted radical vaginal hysterectomy LARVH, to total laparoscopic radical hysterectomy TLRH, and finally robotic assisted radical hysterectomy (RRH).

The pros and cons of robotic surgery in treatment of cervical cancer will be reviewed. The learning curve, indication for robotic radical hysterectomy, and tips, tricks, and lessons learned from robotic radical hysterectomy will be discussed. The outcome of robotic radical hystectomy compared to open and laparoscopic radical hysterectomy will be presented.

Biosketch

Graduated from Hahnemann University, completed internship and residency in Obstetrics & Gynecology at Women’s and Children’s Hospital at L.A. County, University of Southern California, and Fellowship in Gynecologic Oncology at Mayo Clinic. He is currently the Medical Director of Gynecologic Oncology and Robotic Surgery at Center of Hope and Robotics and Minimally Invasive Surgical Institute at Renown Regional Medical Center. Dr. Lim has published in peer reviewed journals and presented at International meetings on topics of Robotics and Minimally Invasive surgery. He was the recipient of Robotics Technology paper award at the AAGL 2009, 2011, and 2012. He has been named one of the 5 Epicenter Surgeons in Gynecologic Oncology in the United States. He has performed over 1200 robotic procedures.
Laparoscopy has been shown to provide significant advantages over laparotomy, namely reduced blood loss, pain and hospital stay, when performed for both benign and malignant conditions of the female pelvis. The principle disadvantage of laparoscopy is the learning curve. Current robotic assisted technology helps surgeons overcome this challenge offering several advantages over traditional laparoscopy especially when performing complex operative procedures.

Ovarian cancer requires the performance of a multitude of advanced surgical procedures to achieve optimal residual disease status. Although there is often a limited utility of minimally invasive surgery in the management of advanced stage ovarian carcinoma, there may be situations in which robotic assisted surgical procedures are appropriate. These indications will be reviewed and discussed.

Biosketch

Positions and Employment:
1998–2004 Senior Associate Consultant, Department of Obstetrics & Gynecology, Mayo Clinic, Scottsdale, AZ
2000–2007 Instructor of Obstetrics & Gynecology, College of Medicine, Mayo Clinic
2004–Present Consultant, Department of Obstetrics & Gynecology, Mayo Clinic, Scottsdale, AZ
2005–Present Chair, Department of Obstetrics & Gynecology, Mayo Clinic, Scottsdale, AZ
2007–2009 Assistant Professor of Obstetrics & Gynecology, College of Medicine, Mayo Clinic
2009–Present Associate Professor of Obstetrics & Gynecology, College of Medicine, Mayo Clinic
2010–2012 Chair, Department of Medical & Surgical Gynecology, Mayo Clinic, Jacksonville, FL

Honors:
1984–1985 Mayo Foundation Scholarship, Premedical Scholarship for Future Physicians
1985 Honors Graduate, Rochester Community College, Rochester, MN
1987 Magna Cum Laude, St. Mary's College, Winona, MN
1994 The L.M. Randall Travel Award for Excellence in Obstetrics and Gynecology as a Fellow, Mayo Graduate School of Medicine
1995 The Elizabeth Ann Harris Award for Excellence in Clinical Research in Obstetrics and Gynecology, Mayo Graduate School of Medicine
2001–2004 Mayo Scholar, Gynecology Oncology, Mayo Graduate School of Medicine
Role of da Vinci in Gynecological Cancer Surgery

Robotic paraaortic lymph node dissection deep dive

Director of Gynecologic Oncology, Center of Hope & Renown Institute for Robotic and Minimally Invasive Surgery, USA
Peter C. Lim

Retroperitoneal para-aortic lymph node dissection (RPALND) is an integral part of surgical treatment for gynecological malignancy. A major challenge in performing minimally invasive RPALND is the high aortic node dissection, particularly the region of left para-aortic nodes and above the inferior mesenteric artery, known as supra inferior mesenteric artery aortic nodes (SIMA), or infrarenal aortic nodes (IRAN). The role of robotic paraaortic lymph node dissection will be reviewed. The limitations of robotic paraaortic node dissection with respect to body habitus will be discussed. A systematic approach of successful robotic assisted high aortic node dissection will be presented and anatomical landmark to avoid complications will be reviewed.

Tips and tricks of how to perform a supra inferior mesenteric artery aortic node dissection (SIMA) or infra renal aortic dissection (IRAN) will be discussed.

Biosketch

Graduated from Hahnemann University, completed internship and residency in Obstetrics & Gynecology at Women’s and Children’s Hospital at L.A. County, University of Southern California, and Fellowship in Gynecologic Oncology at Mayo Clinic. He is currently the Medical Director of Gynecologic Oncology and Robotic Surgery at Center of Hope and Robotics and Minimally Invasive Surgical Institute at Renown Regional Medical Center. Dr. Lim has published in peer reviewed journals and presented at International meetings on topics of Robotics and Minimally Invasive surgery. He was the recipient of Robotics Technology paper award at the AAGL 2009, 2011, and 2012. He has been named one of the 5 Epicenter Surgeons in Gynecologic Oncology in the United States. He has performed over 1200 robotic procedures.
Role of da Vinci in Gynecological Cancer Surgery

Avoidance and management of surgical complications

Mayo Clinic, USA
Paul Magtibay

All surgeons will experience complications. The importance however remains the avoidance of such complications, early recognition and identification of the complication, and providing appropriate and timely management of the complication. Prevention is and always will be of the utmost importance. By having an extensive knowledge of the pelvic anatomy, especially as it pertains to the retroperitoneal structures and spaces, the surgeon is able to directly identify and avoid vital structures, hence reducing the risk of complications. This lecture will emphasis and highlight the important pelvic retroperitoneal structures utilizing robotic assisted video demonstrations. We also review the management of some common intraoperative surgical complications as well as some complications explicit to robotic assisted surgery.

Biosketch

Positions and Employment:
1998–2004 Senior Associate Consultant, Department of Obstetrics & Gynecology, Mayo Clinic, Scottsdale, AZ
2000–2007 Instructor of Obstetrics & Gynecology, College of Medicine, Mayo Clinic
2004–Present Consultant, Department of Obstetrics & Gynecology, Mayo Clinic, Scottsdale, AZ
2005–Present Chair, Department of Obstetrics & Gynecology, Mayo Clinic, Scottsdale, AZ
2007–2009 Assistant Professor of Obstetrics & Gynecology, College of Medicine, Mayo Clinic
2009–Present Associate Professor of Obstetrics & Gynecology, College of Medicine, Mayo Clinic
2010–2012 Chair, Department of Medical & Surgical Gynecology, Mayo Clinic, Jacksonville, FL

Honors:
1984–1985 Mayo Foundation Scholarship, Premedical Scholarship for Future Physicians
1985 Honors Graduate, Rochester Community College, Rochester, MN
1987 Magna Cum Laude, St. Mary’s College, Winona, MN
1994 The L.M. Randall Travel Award for Excellence in Obstetrics and Gynecology as a Fellow, Mayo Graduate School of Medicine
1995 The Elizabeth Ann Harris Award for Excellence in Clinical Research in Obstetrics and Gynecology, Mayo Graduate School of Medicine
2001–2004 Mayo Scholar, Gynecology Oncology, Mayo Graduate School of Medicine
The 3rd ASGO Luncheon Symposium [1]  Treatment of Stage II B Cervical Cancer

Concurrent chemoradiotherapy (CCRT) for Stage II B disease: Where are we now?

Peter MacCallum Cancer Centre, Australia
Kailash Narayan

Patients with FIGO stage 2b cervix cancer have prognostically heterogeneous group of tumours. One hundred and fifty seven patients at Peter Mac (1996-2008) were staged using MRI and PET following FIGO staging in 2b cervix cancer patients, the tumour volume ranged from 5 to 198cc, corpus invasion (n = 139) was found in 73% and metastatic nodes (n = 124) were found in 40% patients. Overall primary and pelvic control was obtained in 88 and 87% patients following curative radiotherapy. However, relapses are still seen in 14%, 31% and 59% in corpus negative, corpus positive & node negative and corpus positive & node positive patients respectively.

In the treatment of advanced cervix cancer, concomitant chemoradiotherapy was found to be superior to radiotherapy alone, with improvement in overall and progression free survival (OS, PFS) by 10% and 13% respectively, whether or not platinum was used (Cochrane review 2010). Cisplatin being most effective agent has been widely employed with radiotherapy in treating cervix cancer resulting in overall 5 year survival of 66% in 2b cervix cancer patients. In spite of excellent loco-regional control following chemoradiotherapy, >50% patients who fail, do so outside pelvis and at distant sites. More intensive concurrent chemoradiotherapy and post RT systemic chemotherapy for reducing systemic failure has been tried with short term improvement in survival at a higher treatment related toxicities. Recent progress in radiotherapy through Intensity Modulated RadioTherapy (IMRT) and Image Guided BrachyTherapy (IGBT) are also under way in an effort to improve local and nodal disease control and thus survival.

Biosketch

Associate Professor Kailash Narayan completed his PhD from John Curtin School of Medical Research, Australian National University in Canberra, 1981.

Kailash became Senior Consultant Radiation Oncologist in 1988. He went on to become a Senior Associate in the Department of Pathology at Melbourne University from 1996 to 1999. In 2003 he became Associate Professor in the Department of Obstetrics & Gynaecology University of Melbourne. His research interest includes tumour microvasculature and morphology, prognostic feature analysis and patterns of failures in cervix and endometrial cancers.
Role of radical surgery in stage IIB disease
—Treatment of Stage IIB disease—

Mikio Mikami

Tokai University, School of Medicine, Department of Obstetrics and Gynecology, Japan

In the Japanese and German guidelines for the treatment of cervical cancer, radical surgery is mentioned as one of the recommended options for stage IIB disease. However, in the guidelines of other countries like the USA, there is no mention of surgery for stage IIB disease. If you perform radical surgery for patients who are in stage IIB, risk factors for recurrence such as lymph node metastasis are detected in about half of these patients and postoperative CCRT is essential in such cases. Because of the late complications of postoperative radiotherapy, such as lymphedema and bowel obstruction, this suggests that CCRT should be recommended as the first-line treatment. If radical surgery is to be performed for stage IIB patients, the advantages of surgery need to exceed those of primary CCRT. In our case series of pT2B patients (N = 79), 47 patients (59.4%) were positive for pelvic lymph node (PLN) metastasis. Among 31 patients (pT2B) who additionally underwent para-aortic node (PAN) dissection because of positive PLN, 11 patients were PAN-positive (35.4%). Patients who are PAN-positive seem likely to have remote metastasis like stage IVB patients. In such PAN-positive patients, complete eradication of the cancer by surgery and additional chemotherapy might be a better option. From our data, we think that the role of radical surgery for stage IIB disease should be considered in relation to the status of PLN and PAN involvement.

Biosketch

Education:
1984 M.D., Keio University, School of Medicine
1991 PhD, Keio University, School of Medicine

Postgraduate Training:
1984–1985 Department of Obstetrics and Gynecology, Keio University Hospital
1985–1986 Department of Obstetrics and Gynecology, Hamamatsu Red Cross Hospital
1986–1987 Department of Obstetrics and Gynecology, Ohtawara Red Cross Hospital
1987–1990 Department of Obstetrics and Gynecology, Keio University Hospital
1990–1991 Department of Obstetrics and Gynecology, National Saitama Hospital

Positions Held and Faculty Appointments:
1991–1992 Research Fellow, La Jolla Cancer Research Foundation (USA) (present Sanford-Burnham Medical Research Institute)
1993–1995 Chief Doctor, Department of Obstetrics and Gynecology, Sho Hospital (Itabashi, Tokyo)
1995–1997 Fellow, Department of Obstetrics and Gynecology, Keio University Hospital
1998–2005 Chief Physician, Department of Obstetrics and Gynecology, National Saitama Hospital
1998–2002 Visiting Assistant Professor, Keio University School of Medicine
2003–2006 Visiting Associate Professor, Keio University School of Medicine
2006– Professor and Chairman, Department of Obstetrics and Gynecology, Tokai University School of Medicine
Uterine sarcomas fall into three main categories: 1) Leiomyosarcoma, a malignant tumor of smooth muscle cells; 2) Endometrial stromal sarcoma, a malignant tumor derived from endometrial stromal cells in the endometrium or in adenomyosis; and 3) adenosarcoma, a mixed tumor of endometrial origin with a malignant mesenchymal component and a benign epithelial component.

Leiomyosarcoma is the most common sarcoma of the uterus. It can arise anywhere in the myometrium; some protrude into the endometrial cavity and cause abnormal bleeding. Leiomyosarcomas are typically large tumors that vary from firm to soft in consistency and that contain areas of hemorrhage or necrosis. Most are composed of spindle shaped cells with fusiform nuclei and fibrillar eosinophilic cytoplasm. Immunoreactivity for smooth muscle markers such as smooth muscle actin, desmin, and caldesmon is characteristic. Criteria for diagnosis include diffuse moderate to marked nuclear atypia, increased proliferative activity with more than 10 mitotic figures per 10 high power fields, and areas of tumor cell necrosis. There is no accepted grading system, but most leiomyosarcomas are viewed as being high-grade tumors. Important pathologic variants include epithelioid leiomyosarcoma, myxoid leiomyosarcoma, and HMB-45 and smooth muscle actin positive sarcomas that overlap with PEComa of the uterus.

Endometrial stromal sarcoma (ESS) is the second most common type of uterine sarcoma. Most fall into the category of low grade endometrial stromal sarcoma, a tumor composed of small hyperchromatic cells with round or oval nuclei and scanty cytoplasm. The cells resemble the stromal cells of proliferative endometrium. Mitotic activity is generally low, and there is no significant nuclear atypia. The tumor cells are generally not immunoreactive for smooth muscle markers, but they show strong staining for CD10, and, usually, for estrogen and progesterone receptors. Characteristic chromosomal translocations are sometimes present in low grade endometrial stromal sarcomas the most common being a t (7;17) (p15; q12) resulting in a JAZF1–SUZ12 fusion. The criterion for diagnosis is invasive growth. There is always pushing invasion in which tongue like outgrowths of tumor grow into the myometrium. Vascular invasion is present in about half the cases. These are indolent tumors with a favorable prognosis. A minority of sarcomas derived from the endometrial stroma are high grade, aggressive sarcomas with atypical nuclei and frequent mitotic figures. Some resemble endometrial stromal cells, a least to a degree. These consist of uniform cells with round or oval nuclei and scant cytoplasm. Some of these sarcomas have a t (10;17) (q22; p13) that results in a YWHAE–FAM22A/B fusion. Other high-grade endometrial sarcomas consist of pleomorphic cells with marked nuclear atypia, multinucleation and variable cytoplasm; pleomorphic sarcomas bear little or no resemblance to endometrial stromal cells. High-grade endometrial sarcomas show variable staining for CD10 and are often ER and PR negative; high-grade stromal sarcomas with uniform nuclei and the YWHAE–FAM22A/B fusion tend to show nuclear staining for Cyclin D1. High-grade endometrial sarcomas extensively invade the myometrium and blood vessels, metastasize, and have a much less favorable prognosis than low-grade stromal sarcomas.

Adenosarcoma (AS) is an uncommon uterine sarcoma that typically grows as a polypoid neoplasm arising in the endometrium or cervix; some, but not all, invade the underlying myometrium. Adenosarcoma
consists of a sarcomatous mesenchymal component admixed with benign glands that typically resemble inactive or proliferative endometrial glands. The mesenchymal component most often resembles endometrial stromal sarcoma or fibrosarcoma, although heterologous sarcomatous elements such as rhabdomyosarcoma are occasionally present. The mesenchymal component condenses beneath the surface and around glands resulting in a characteristic pattern of subsurface hypercellularity and periglandular cuffing. Cytologic atypia is present in the mesenchymal component, but it is usually only mild to moderate. Mitotic activity is also present, but often only slightly increased. Diagnostic criteria include the low power appearance of the tumor, with its characteristic architecture and hypercellular stroma, and the presence of detectable mitotic activity and nuclear atypia. There is no characteristic immunophenotype. Adenosarcoma frequently has a favorable prognosis but aggressive behavior is possible when adverse prognostic features are present. These include: invasion of the myometrium or blood vessels, sarcomatous stromal overgrowth, or the presence of heterologous sarcomatous elements such as rhabdomyosarcoma. Adenosarcoma must be differentiated from the much more aggressive carcinosarcoma, which differs from it by the presence of a carcinomatous epithelial component in carcinosarcoma.

**Biosketch**

**Education:**

1963–1967 University of California, Berkeley A.B. with Distinction
1967–1971 Johns Hopkins University M.D.
1971–1972 Stanford University Medical Center Intern Pathology
1972–1974 Stanford University Medical Center Resident Pathology
1973–1974 Stanford University Medical Center Fellow Surgical Pathology
1974–1975 University of Texas, MD Anderson Cancer Center Fellow Oncologic Pathology

**Principal Positions Held:**

1975–1977 Eisenhower Army Medical Center Fort Gordon, GA Staff Pathologist
1977–1980 Armed Forces Institute of Pathology, Washington, D.C. (Department of Gynecologic and Breast Pathology) Staff Pathologist
1980–1983 George Washington University, Washington, D.C. Assistant Professor
1983–1986 George Washington University, Washington, D.C. Associate Professor
1986–1992 Alta Bates Medical Center, Berkeley Attending Physician
1993–present University of California, San Francisco Professor of Clinical Pathology
Clinical diagnosis and treatment for uterine sarcomas

Department of Obstetrics & Gynecology, Fukui University, Japan
Yoshio Yoshida

Uterine sarcomas are uncommon tumors. Prognosis of uterine sarcoma is very poor, with a five-year survival rate less than 30%. Uterine carcinosarcomas should be classified as a metaplastic carcinoma of the uterus. This review focuses on leiomyosarcoma, endometrial stromal sarcoma and undifferentiated sarcoma.

Many attempts have been mad to take preoperative diagnosis of uterine sarcomas by using ultrasound, MRI and PET. The diagnosis of uterine sarcomas is frequently unexpected, discovered incidentally on histopathology review following hysterectomy, often for leiomyoma. Thus, radiological diagnosis prior to hysterectomy is still difficult. However, MRI is the most useful diagnosis modality. Molecular imaging has been challenging.

While the mainstay of treatment for early disease of uterine sarcoma is a total abdominal hysterectomy, it is less clear whether routine oophorectomy or lymphadenectomy is necessary. Cytoreductive surgery in patient uterine sarcoma at the time of presentation has not been well described. Cytoreductive surgery of metastatic uterine LMS must be weighed against the morbidity of surgery. And data are limited in regard to surgery cytoreduction of recurrent uterine sarcomas. In leiomyosarcoma, a survival benefit only in patients with a disease-free interval of more than 6 months, with local or distant recurrence and optimal resection. Adjuvant pelvic radiotherapy may improve local tumor control in high risk patients, but is not associated with an overall survival. There is also no good evidence for routine use of adjuvant chemotherapy. For advanced leiomyosarcoma, newer chemotherapy agents including gemcitabine and docetaxel offer some promise.

Uterine sarcomas provide considerable challenges in their clinical diagnosis and treatment. The presently available literature regarding the clinical diagnosis and treatment of uterine sarcoma is briefly reviewed.

Biosketch

Education:
Mar 1988 Fukui Medical University, Fukui

Occupation:
Jun 2012–present Fukui University, Fukui, Department of Obstetrics & Gynecology, Professor
Sep 2006–May 2012 Fukui University, Fukui Department of Obstetrics & Gynecology, Associate Professor
Oct 2003–Aug 2006 Fukui University, Fukui Department of Obstetrics & Gynecology, Assistant Professor
May 2001–Sep 2003 Fukui Medical University, Fukui Department of Obstetrics & Gynecology, Assistant Professor
Jan 2000–Apr 2001 Fukui Medical University, Fukui Department of Obstetrics & Gynecology Research Associate
Oct 1997–Dec 1999 Weizmann institute of science, Israel
Feb 1989–Sep 1997 Fukui Medical University, Fukui Department of Obstetrics & Gynecology Research Associate
The importance of HPV-16/18 genotyping in ASCUS and cervical cancer screening

Department of Obstetrics & Gynaecology, Singapore General Hospital, Singapore
Sun Kuie Tay

Of the 15 oncogenic HPV subtypes, HPV 16 & 18 are distinct in their prevalence in cervical cancer and their association with a short interval between viral exposure and development of CIN2 or more severe squamous intraepithelial lesions and adenocarcinoma in-situ. Data from ATHENA Trial provided additional insight into the impact of HPV16 and/or HPV 18 DNA detection in both women whose cervical cytology showed ASCUS changes and women with normal cervical cytology.

In ATHENA trial, the ASCUS cohort involved 1,923 women above the age of 21 years old. The subjects were evaluated with colposcopy and endocervical curettage. Those found to have a lesion of CIN2 or more severe lesion exited the study while the rest were followed up yearly for the next 3 years. The analysis was based on 1,578 (82% of the ASCUS population) women who had valid biopsies and HPV DNA results. The mean age of the included subjects was 37.1 years. High-risk HPV DNA was detected in 32.6%, HPV-16 in 8.2% and HPV-18 in 2.9%. The absolute risk of ≥ CIN2 was 24.4% of HPV-16 and/or HPV-18 positive group and in 35.5% of HPV-16 positive group, compared to 86% of other 12 hr–HPV positive women and 0.8% of HPV negative women. HPV16/18 genotyping identifies women who are at highest risk for having ≥CIN2.

The normal cytology cohort of ATHENA trial consisted of 2 subgroups of women above 30 years old: (i) women with normal cytology and negative HPV DNA test (n=886) who were randomised to colposcopy and biopsy, and (ii) women who were cytology negative but HPV DNA positive who underwent colposcopy and biopsy (n=31,373). The combined cohort included 32,260 women with a mean age of 44 years. The absolute risk of ≥CIN2 was 11.4% for the HPV-16 and/or HPV-18 positive group, 13.6% for the HPV-16 positive women and 7% for HPV-18 positive women, compared to 4.6% of women positive for the other 12 hr–HPVs and 0.8% for HPV negative women. The status of HPV-16 and/or HPV-18 positivity put women with normal cytology at the similar risk of ≥CIN2 among women whose cytology showed ASCUS and positive for hr–HPV. This data supports referral to colposcopy of all women with normal cytology who are HPV16 positive.

The existing data provide robust evidence of HPV DNA status in predicting ≥CIN2. The status of HPV-16 and HPV-18 positivity further enhances identification of women at high risk of ≥CIN2 regardless of cytology results. HPV testing has recently been recommended the preferred method of routine screening of cervical cancer in USA. HPV testing with HPV-16/18 genotyping confers additional sensitivity and specificity for ≥CIN2.

Biosketch

Qualification & Education:
1976–1981 MBBS, University College London, UK
1989 MD, University of London, UK
1996 Fellow, Royal College of Obstetricians & gynaecologists London
1990 Fellow, Academy of Medicine Singapore
1999– Associate professor, Yong Loo Lin School of Medicine, NUS
2012 Professor, Duke-NUS Graduate Medical School, NUS

Area of Interest:
HPV epidemiology and tumor immunology, Cervical cancer screening, Gynecology Oncology surgery and epidemiology
The role of HPV tests in cervical cancer screening in Japan and Asia

Ryo Konno

Department of Obstetrics and Gynecology, Jichi Medical University Saitama Medical Center, Japan

In November 2011, new recommendations for primary cervical screening were issued by the Japanese Association of Obstetricians and Gynecologists (JAOG) based on evidence that human papillomavirus (HPV) testing is more sensitive and therefore provides better negative predictive values (NPV) than cytology. Furthermore, in March 2012, new primary cervical screening guidelines were jointly issued by the US Preventative Services Task Force (USPSTF) and a consortium of the American Cancer Society (ACS), the American Society for Colposcopy and Cervical Pathology (ASCCP), and the American Society of Clinical Pathologists (ASCP). These new recommendations and guidelines are basically similar, but some differences exist between Japan and the USA. It is recommended that women aged ≥ 30 years be screened every 3 years in Japan and every 5 years in the USA, using a combination of cervical cytology and high-risk HPV testing, or every 3 years using cervical cytology alone in the USA. The higher NPV of HPV testing permits a safe extension of the screening interval, thereby reducing harms and gaining cost-effectiveness caused by screening. The JAOG and ACS/ASCCP/ASCP recommend that cytology-negative/HPV-positive women undergo follow-up in 12 months with repeat cytology and HPV testing. In USA, alternatively, cytology-negative/HPV-positive women can be genotyped for HPV 16 and HPV 18. With the latter option, women who are found to have either HPV 16 or HPV 18 are referred for colposcopy, whereas those without these highest-risk HPV types are co-tested again in 12 months. Recently, the results of the ATHENA study with a new HPV test (Cobas 4800) have been published. The US Food and Drug Administration recently approved the Cobas HPV test for use in the United States based on the results of the ATHENA trial. In Japan, the PMDA also approved its use for triage of ASC-US in 2013.

Recently, we assessed a trial of co-testing with HPV and cytology (a population-based, ≥5 year follow-up) trial using HC2 in Japan. For women negative by co-testing, the cumulative incidence rate of CIN2+ and CIN3+ over 5 years was 1.5% and 1.2%, respectively. This suggests that the screening interval for cervical screening using HPV testing can be extended to every 5 years for the detection of CIN2+. In this lecture, I would like to talk about “how to use HPV tests in cervical screening in Japan and Asia” and the “benefits and harm” with various screening strategies.

Biosketch

Education: 1984 M.D., Jichi Medical University, Japan
1991 Ph.D., Tohoku University School of Medicine, Japan
1996–2000 Lecturer, Department of Obstetrics and Gynecology, Tohoku University School of Medicine, Japan
2001–2002 Director, Department of Obstetrics and Gynecology, Yamagata Prefectural Central Hospital, Japan
2002 Director, Associate Professor, Department of Gynecology, Jichi Medical University Omiya Medical Center, Saitama, Japan
2008 Professor, Department of Obstetrics and Gynecology, Jichi Medical University Saitama Medical Center
Radical Hysterectomy is one of the most complex surgical procedures in gynecologic oncology due to the amount of intricate dissection required for the bladder, ureter, parametrium and rectum. In the secular evolution of RH the last two decades were dedicated to the application of minimally invasive surgery to decrease post-operative complications and improve quality of life after this surgery. The technical difficulties and the long surgical training limited the widespread use of conventional laparoscopy. On the contrary Robotic assisted surgery, due to the faster learning curve and the power to overcome the limitations of traditional laparoscopy, has become the best technical application to perform RH. Improved visualization, more precise surgical technique and limited fatigue for surgeons increase the number of patients that could benefit from the advantages of MIS. In the author’s recent experience 70% of radical hysterectomies are performed employing robotic surgery experiencing a low EBL and transfusion rate, shorter LOS and reduced complications compare to open surgery. The role of RS is even more relevant while performing NSRH and in the treatment of obese patients. Some open questions remain still debatable: the selection criteria, the effect of minimally invasive surgery, the oncological outcomes and the lack of prospective randomized trials despite twenty years of TLRH and eight years of RRH.

Biosketch

Dr. Maggioni is a gynecologist and surgeon specializing in the surgical treatment of tumors of the ovary, cervix, vulva, vagina and endometrium. Degree in Surgery and Gynecology at the University of Milan (1976), a Specialist in Obstetrics and Gynecology (1980) and Urology (1983). Dr. Maggioni developed his training in pelvic surgery and surgical oncology at prestigious European and American Institutions. He has developed special interest in radical and ultra-radical surgical treatments and surgical reconstructive techniques.

From 1976 to 1986 he started a clinic and research department in Clinical Obstetrics and Gynecology at the University of Milan and from 1986 to 1994 he worked in the Gynecologic Department at the University of Monza. In 1994 the European Institute of Oncology opened along with the Division of Gynecology Oncology. Dr. Maggioni became Director of the Gynecology Oncology Division in 1996. Under his direction, the Division has grown exponential covering prevention, comprehensive surgical and medical treatment as well as teaching.

His special interest in ovarian cancer surgery lead Dr. Maggioni to establish the Center of Specialization in Ovarian Cancer in 2008 (OCC). The Center has become a reference point among numerous hospitals and institutes in Europe. In 2005, interest in innovative surgical techniques and technological development led him to be a pioneer of minimally invasive surgery. Robotics Research has increasingly improved the quality of life of patients with genital tract neoplasia. In 2008 Dr. Maggioni created the European Society of Robotic Surgery in gynecology (SERGS).

For years he has been dedicated to teaching through surgical congresses and courses and at the European School of Abdominal-Pelvic Surgery in Gynecology Oncology (Esagon), of which he is founder and director. He is a member of several societies of surgery and gynecology oncology, including the prestigious American “Society of Pelvic Surgeons”.

His main areas of interest include surgical ultra-radical surgery for relapses, cytoreductive treatment of ovarian cancer, the conservative treatment in diseases of the cervix, ovary and vulva, and advanced minimally invasive robotic surgery.
Robotic radical hysterectomy: Training for beginners

Nerve sparing–Okabayashi's radical hysterectomy (NS–Okabayashi's RH) allows both nerve preservation and wider resection of the parametrial/vaginal margins. Precise identification and dissection of each nerve fiber have been effectively performed and described by Professor Shingo Fujii in his NS–Okabayashi's RH. We tried to copy after his surgical procedures of open abdominal approach in robotic surgery, and assessed the feasibility of NS–Okabayash's RH by comparing the patient's quality of life between the open abdominal and the robotic NS–Okabayashi's RH. Although we have very limited number of cases, robotic surgery allowed easy identification and dissection of nerve fibers and vessels necessary to perform NS–Okabayashi's RH according to SP's technique. The interval to regain natural voiding as well as the total blood loss were significantly less in the robotic NS–Okabayashi's RH group compared with the laparotomy group. In this session, I will show the technical tips how a beginner of robotic surgery, but an expert of open radical hysterectomy, can start robotic surgery safely and effectively.

Biosketch

Education:
MD; Faculty of Medicine, Kyoto University (1988.3)
PhD; Kyoto University Graduate School of Medicine (1996.3)

Working Experience:
1988.5–1989.1 Department of Gynecology and Obstetrics, Kyoto University Hospital
1989.2–1992.3 Hyogo Prefectural Amagasaki Hospital
1992.4–2000.10 Department of Gynecology and Obstetrics, Kyoto University Graduate School of Medicine
2000.11–2002.11 Vaccine Research Center, NIH, USA
2002.12–2007.03 Assistant Prof., Kyoto University
2007.03–2012.12 Associate Prof., Kyoto University
2013.1– Professor, Department of Obstetrics and Gynecology, Faculty of Medicine, Kinki University

Research Field: gynecologic oncology (ovarian cancer)
Pelvic lymphadenectomy for endometrial cancer

Department of Obstetrics and Gynecology, Osaka Medical College, Japan
Yoshito Terai, Tomohito Tanaka, Hiroshi Sasaki, Satoe Fujiwara,
Yoshimichi Tanaka, Hiroshi Kawaguchi, Satoshi Tsunetoh,
Masanori Kanemura, Yoshiki Yamashita, Masahide Ohmichi

Background; The staging role of lymph node resection is widely recognized, and pelvic lymphadenectomy is considered the most accurate way to detect the presence or absence of lymph node metastases. Recently, total laparoscopic surgery is less invasive and is assumed to be associated with lower morbidity. We performed the total laparoscopic modified radical hysterectomy (TLmRH) and bilateral salpingo-oophorectomy and pelvic lymphadenectomy for clinical early-stage endometrial cancer.

Methods; Sixty-three patients with clinical stage I endometrial cancer which underwent TLmRH and/or pelvic lymphadenectomy, compared with 72 patients which underwent traditional laparotomy. The groups were compared in clinical characteristics, surgical outcomes, recoveries and intraoperative and postoperative complications.

Results; The mean operative time was 313.3 min ± 73 in the TLmRH group and 259 min ± 76 in the TAH group (p<0.01). The mean blood loss was 38 ml ± 71 in the TLmRH group and 234 ml ± 183 in the TAH group (p<0.01). The mean number of resected the pelvic lymph nodes was 31.2 ± 12.4 in the TLmRH group compared to 28.0 ± 11.9 in the TAH group (N.S.). The patients who underwent TLmRH had less intense postoperative pain (assessed by the duration time of analgesics used) than patients in the TAH group (1.1 ± 0.7 vs 2.4 ± 1.8 days). None of the patients in the TLmRH group required conversion to laparotomy, and none cases in the TLmRH group occurred postoperative ileus and bladder, ureteral or bowel injury.

Conclusion; The total laparoscopic pelvic lymphadenectomy can be minimally invasive, feasible surgical procedure in patients with clinical early-stage endometrial cancer.

Biosketch

Education:
Osaka Medical College, Osaka, Japan M.D. 1992 OB/GY
Osaka Medical College, Osaka, Japan Ph.D. 2001 Angiogenesis, cancer cell biology

Employment:
• Clinical Fellow at Department of Obstetrics and Gynecology, Osaka Medical College, Osaka, Japan (1992-1993)
• Clinical Associate at Department of Obstetrics and Gynecology, Osaka Medical College, Osaka, Japan (1994-2001)
• Research Fellow at Department of Vascular Biology, Institute of Development, Aging and Cancer, Tohoku University, Sendai, Japan (1999-2000)
• Research Fellow at Department of Pathology, Colorado University, Colorado, US (2004-2005)
• Junior Associate Professor at Department of Obstetrics and Gynecology, Osaka Medical College, Osaka, Japan (2006-2012)
• Associate Professor at Department of Obstetrics and Gynecology, Osaka Medical College, Osaka, Japan (2012-present)
Laparoscopic surgery for gynecologic diseases is being performed widely. In Japan, however, laparoscopic procedure for gynecologic malignancies is still performed in limited facilities due to National Health Insurance. Nevertheless, we have so far performed laparoscopic para-aortic lymphadenectomy as part of the treatment or staging for gynecologic malignancies.

There are three indications of laparoscopic para-aortic lymphadenectomy. One is staging laparoscopy for cervical cancer, another is part of the standard treatment for stage 1 endometrial cancer with high risk group, and the other is re-staging for ovarian cancer.

From September 1998 to December 2012, transperitoneal para-aortic lymphadenectomy was performed in 115 patients. 55 patients underwent this procedure for cervical cancer, 41 for endometrial cancer and 19 for ovarian cancer.

In 41 patients of endometrial cancer with infrarenal lymphadenectomy, the mean estimated blood loss was 78ml and the mean operative time was 190minutes. The average number of para-aortic lymph nodes removed laparoscopically was 23.2. Positive para-aortic lymph nodes were present in 6 cases.

Two patients had intraoperative complications in the form of vascular accident in 115 patients with transperitoneal para-aortic lymphadenectomy. Both of them required blood transfusion. No patients had bowel and ureter injury, intraoperatively.

Laparoscopic para-aortic lymphadenectomy by transperitoneal approach can be minimally invasive, efficient, and feasible surgical procedure in the patients with gynecologic malignancies. Laparoscopic para-aortic lymphadenectomy should be offered as a standard option to patients with gynecologic malignancies who require surgical staging and treatment, wherever possible.

**Biosketch**

Education:
College/University
1973–1979 MD, Shinsyu University School of Medicine
1987–1991 PhD in Pathology, Kanazawa Medical College

Residency:
1979–1981 Resident in Surgery, Tokyo women's medical university

Medical Licensure:
1979 Full Medical Licence (Japan)

Board Certification:
1990 Fellow of Japan Society of Obstetrics and Gynecology
2004 Fellow of Japan Society of Gynecology and Obstetrics Endoscopy and Minimally Invasive Therapy
2004 Fellow of Japan Society for Endoscopic Surgery
2008 Fellow of Japan Society of Gynecologic Oncology
2008 Fellow of Japanese Board of Cancer Therapy

Present Position:
Director of Obstetrics and Gynecology, Toyama Prefectural Central Hospital
Director of Surgical Center, Toyama Prefectural Central Hospital
How to perform nerve-sparing radical hysterectomy for cervical cancer

Department of Gynecology, Hyogo Cancer Center, Japan
Kiyoshi Fujiwara

In Japan, radical hysterectomy is applied for stage IB – IIB cervical cancer. The major complications of this surgery are bladder dysfunction and lymphedema. To avoid these complications, all kind of efforts had been made. In this symposium I would like to discuss about nerve-sparing radical hysterectomy with the procedure which preserve pelvic nerve plexus and its bladder branch with complete resection of the vessels of cardinal ligament. The overview of the surgery are 1) wide opening of retroperitoneal space, 2) development of pararectal and paravesical space, 3) separation of external iliac artery and iliopsoas muscle, 4) incision of the sheath of external iliac vessels, 5) dissection of external iliac lymph nodes, 6) dissection of obturator lymph nodes, 7) transection of uterine artery, 8) transection of vessels of cardinal ligament, 9) separation of urinary bladder, 10) separation of ureter and transection of anterior leaf of vesicouterine ligament, 11) transection of infundibulopelvic ligament, 12) incision of peritoneum of cul–de–sac and separation of rectum, 13) transection of posterior leaf of vesicouterine ligament, 14) transection of uterosacral ligament, 15) transection of paravaginal tissue, 16) transection of vaginal wall and removal of uterus. The important points are complete understanding of surgical anatomy. To achieve it, clear visualization of uterine ligaments by full development of pararectal, paravesical, vesicovaginal and rectovaginal space and complete separation of blood vessels and nerves by stripping the fatty tissue which harboring lymph nodes with suction tube become essential.

Biosketch

Education:
Degree-Granting Education
M.D. Tokyo Medical University, 1984
Ph.D. Department of Pathology, Tokyo Medical University, 1988
Post Graduate Training
Resident, Obstetrics and Gynecology, Tokyo Medical University Hospital, 1984–1988

Experience:
Academic/Clinical Appointments
Faculty, Department of Obstetrics and Gynecology, Tokyo Medical University 1988–1995
Assistant Professor, Department of Obstetrics and Gynecology, Tokyo Medical University 1995–2003
Fellow, Department of Gynecological Oncology, Cancer Institute Hospital 2003–2004
Physician, Department of Gynecological Oncology, Cancer Institute Hospital 2004–2009
Director, Department of Gynecology, Hyogo Cancer Center 2010–present

International Background:
Visiting Research Fellow, Department of Pathology, University of Hawaii, Honolulu, Hawaii, U.S.A. (Prof. J.D. Hardman)
Visiting Research Fellow, Department of Pathology, George Washington University, Washington D.C. U.S.A. (Prof. S.G. Silverberg)
The primary debulking surgery is performed to achieve optimal cytoreduction (surgical efforts aimed at complete removing the bulk of the tumour) as the amount of residual tumour is one of the most important prognostic factors for survival of women with advanced epithelial ovarian cancer.

The initial maximal surgical effort is associated with improved survival in patients with advanced ovarian cancer who would have otherwise been suboptimally cytoreduced.

During primary surgery for advanced cancer all attempts should be made to achieve complete cytoreduction.

Especially, the surgery to some upper abdominal disease is very important.

This time, although it is the limited time, I report the diaphragmatic reconstructive surgery and the distal pancreatectomy among upper abdominal disease.
Improving survival in women with ovarian cancer: Future directions

University of Texas MD Anderson Cancer Center, USA
David M. Gershenson

Although ovarian cancer survival has improved incrementally over the past few decades, a major breakthrough has not occurred. Over the next decade, there is hope that a significant advance in survival will be realized. The focus of our efforts during this period will rest in two broad areas: 1) resolving screening and therapeutic strategies currently under investigation, and 2) exploring novel therapies within the context of specific histologic subtypes through biomarker-driven trials. Included in the first category will be settling on the role of the following: 1) ovarian cancer screening for low-risk and high-risk populations, 2) anti-angiogenic therapy, 3) intraperitoneal chemotherapy, 4) dose-dense paclitaxel, 5) neoadjuvant chemotherapy, 6) maintenance therapy, and 7) secondary cytoreductive surgery. Within the second category, we need to further optimize the environment for the conduct of separate clinical trials for both high-grade serous carcinoma and the less common subtypes. Examples include study of the role of PARPi in high-grade serous carcinoma; study of targeted therapeutics (anti-angiogenic agents, PI3K/AKT/mTOR inhibitors, drugs that target the IL-6/STAT3/HIF, c-MET inhibitors, etc.) for clear cell carcinoma; study of targeted therapeutics (anti-angiogenic agents, src inhibitors, anti-HER-2/neu agents, drugs that target the MAPK pathway, etc.) for mucinous carcinoma; and the role of targeted therapeutics (MEK inhibitors, PI3K/AKT/mTOR inhibitors, IGF1-R inhibitors, anti-angiogenic agents, etc.) for low-grade serous carcinoma. For the last 3 categories, conventional ovarian cancer chemotherapy has been shown to be ineffective. For the rare subtypes, international collaborations will be an essential component. In addition, selection of the most efficient clinical trial design will remain a challenge.

Biosketch

Dr. David M. Gershenson is Professor in the Department of Gynecologic Oncology and Reproductive Medicine at the University of Texas MD Anderson Cancer Center where he joined the faculty in 1979 after completing his fellowship training. He was Chair of the department from 1998–2012. His major focus is on clinical and translational research of rare ovarian cancers.

Since 1999, he has served as Co-Principal Investigator of MD Anderson’s NCI-funded SPORE in Ovarian Cancer and, more recently, as Co-Project Leader of Project #3, “Personalized Therapy for Women with Low-Grade Serous Carcinoma of the Ovary.”

Dr. Gershenson also serves as Chair of the Gynecologic Oncology Group’s (GOG) Rare Tumor Committee and as a member of the GOG Protocol Development Committee. He is a Co-Chair of the NCI’s Gynecologic Cancer Steering Committee and is also Editor Emeritus of the journal, Gynecologic Oncology. Since 2009, he has served as Chairman of the Foundation for Women’s Cancer (formerly the GCF). Since 2006, he has served as a Director of the American Board of Obstetrics and Gynecology.
Despite initial treatment with debulking surgery and taxane–platinum chemotherapy, the majority of women with advanced ovarian cancer will relapse and develop drug–resistance. Drug–sensitivity conscious selection of second–line options is the key to success to treat the relapsed ovarian cancer.

GOG defined the clinical platinum sensitivity and designated the relapse ≥ 6 months after initial therapy as sensitive case and < 6 as resistant. Since the median progression–free interval after initial therapy with platinum–paclitaxel is 16–22 months, most patients are categorized as platinum sensitive. These patients are generally re–treated with platinum–paclitaxel at first relapse, however, because of the cumulative toxicities carboplatin with pegylated liposomal doxorubicin or gemcitabine could be the options of the choice.

Approaches in resistant/refractory disease are often intractable. For this population, it is reasonable to choose an agent with a different action mechanism and the attainment of stable disease with acceptable levels of toxicity is a valid clinical endpoint. As of yet, no particular agents have been shown its efficacy except for bevacizumab or olaparib.

For the patients with persistent small volume residual disease, it is not unreasonable to consider intraperitoneal therapy to maximize response although the efficacy is still controversial. For the patients with persistent gross disease patients may continue to receive the drugs to which disease has responded, although the consolidation chemotherapies are not generally established with the exception of extended use of bevacizumab.

Biosketch

Education and Professional Degrees
1981 Jikei University School of Medicine (M.D.).
1986 Postgraduate School, Jikei University School of Medicine.
1988 Ph.D. for a thesis entitled: "Experimental endocrinotherapy with tamoxifen of human ovarian dysgerminoma transplanted into nude mice".

Internship and Fellowship:
1981-1984 Clinical fellowship of the Department of Obstetrics and Gynecology, Jikei University School of Medicine.
1986-1987 Research fellowship of the Institute of Medical Science, University of Tokyo.
1988-1990 Fellowship at the University of California, San Diego, U.S.A.

Employment History:
1986-1991 Associate professor of the Department of Obstetrics and Gynecology, Jikei University School of Medicine.
1996 Director of Gynecologic Oncology Section.
1999-2005 Lecturer of the Department of Obstetrics and Gynecology, Jikei University School of Medicine.
2005-2009 Assistant professor of the Department of Obstetrics and Gynecology.
2010– Chief director of Department of Obstetrics and Gynecology, Jikei University Daisan Hospital.
2011– Professor of the Department of Obstetrics and Gynecology.
Neoadjuvant chemotherapy in advanced ovarian cancer

Department of Gynecologic Oncology, Saitama Medical University International Medical Center, Japan
Keiichi Fujiwara

Neoadjuvant chemotherapy for advanced ovarian cancer is controversial. General concept of neoadjuvant chemotherapy is to administer chemotherapy before main treatment such as surgery or radiation therapy. The purpose of this strategy is to reduce the tumor size or extent of cancer spread before applying the radical main treatment, thus making the procedure easier or less invasive. It also provides the chance to know whether the chemotherapy is effective or not, which is not possible when the tumor is completely removed.

Neoadjuvant chemotherapy has been studied in several types of cancer, such as breast, prostate, cervical, colorectal, lung, and esophageal cancers. Probably, the breast cancer is the most successful model of usage of neoadjuvant chemotherapy. In the 1980s, typically for patients with inoperable locally advanced or inflammatory breast cancer, and breast-conserving surgery rate dramatically increased. The next step for the neoadjuvant therapy was to use it as an in vivo test for chemosensitivity by assessing pathologic complete response. Currently, by using pathologic response and other biomarkers as intermediate end points, results from trials of new regimens and therapies that use neoadjuvant therapy are aimed to precede and anticipate the results from larger adjuvant trials.

In ovarian cancer, primary debulking surgery followed by adjuvant chemotherapy is a gold standard procedure. Although some investigators reported their favorable experience of neoadjuvant chemotherapy followed by interval debulking surgery, meta-analysis suggested that neoadjuvant chemotherapy was associated with poorer outcome.

EORTC55971 trial is the first prospective randomized study of advanced (stage IIIC or IV) ovarian carcinoma, fallopian-tube carcinoma, or primary peritoneal carcinoma, to compare the overall survival between patients who received standard primary debulking surgery followed by chemotherapy and those who received neoadjuvant chemotherapy plus interval debulking surgery. The hazard ratio for death in the neoadjuvant chemotherapy group as compared with the primary debulking surgery group was 0.98 (90% confidence interval [Cl], 0.84 to 1.13; P = 0.01 for non-inferiority), and the hazard ratio for progressive disease was 1.01 (90% Cl, 0.89 to 1.15). Complete resection of all macroscopic disease (at primary or interval surgery) was the strongest independent variable in predicting overall survival. Postoperative rates of adverse events and mortality were higher after primary debulking than after interval debulking. This study raised a significant question about the quality of debulking surgery.

Another randomized trial (CHORUS: Chemotherapy or Upfront Surgery) conducted in UK was presented at ASCO 2013. This study also suggested an equivalency of application of neoadjuvant chemotherapy followed by interval debulking surgery.

The Japanese Clinical Oncology Group (JCOG) conducted a randomized trial (JCOG0602), and closed for accrual recently and waits for the result.

Even though we will have three trial results in the near future, following questions will remain: (1) Can aggressiveness of debulking surgery be minimized? (2) How accurate the selection of candidate patients
can be.(3) What is the optimal number of neoadjuvant chemotherapy before interval debulking surgery. (4) What is the optimal selection and duration of adjuvant therapy after interval debulking surgery and finally (5) Whether the failure to achieve optimal cytoreductive surgery is due to surgeon’s skill or biology of the cancer.

We hope those questions can be answered in the prospective manner, soon.

**Biosketch**

**Education:**

<table>
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<th>School</th>
<th>Location</th>
<th>Date</th>
<th>Degree</th>
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<tbody>
<tr>
<td>Okayama University Medical School</td>
<td>Okayama, Japan</td>
<td>1973-1979</td>
<td>M.D.</td>
</tr>
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</table>

**Professional Experience:**

- **April, 2007-Present**
  Professor and Director, Department of Gynecologic Oncology, Saitama Medical University International Medical Center, Hidaka-City, Japan

- **August, 2006-March, 2007**
  Professor, Gynecologic Oncology, Department of Obstetrics and Gynecology, Saitama Medical University, Moroyama, Japan

- **April, 1993-July 2006**
  Associate Professor, Department of Obstetrics and Gynecology, Kawasaki Medical School, Kurashiki-City, Japan

- **October 2005**
  Visiting Professor, Department of Obstetrics and Gynecology, Capital Medical School, Beijing, Peoples Republic of China

- **Nov. 1990-March, 1993**
  Assistant Professor, Department of Obstetrics and Gynecology, Kawasaki Medical School, Kurashiki-City, Japan

  Junior Staff, Department of Obstetrics and Gynecology, Okayama University Medical School, Okayama, Japan

- **Sept. 1988-June, 1990**
  Postdoctoral Research Fellow, Department of Radiology, Bowman Gray School of Medicine, Wake Forest University, Winston-Salem, North Carolina.

- **March 1988-Aug. 1988**
  Research Fellow, Section of Gynecologic Oncology, Bowman Gray School of Medicine, Wake Forest University, Winston-Salem, North Carolina.

- **Feb. 1984-Feb. 1988**
  Junior Staff, Department of Obstetrics and Gynecology, Okayama University Medical School, Okayama, Japan.

- **Feb. 1983-Feb. 1984**
  Attending Doctor, Department of Obstetrics and Gynecology, Hiroshima Red Cross Hospital, Hiroshima, Japan.

- **Feb. 1982-Jan. 1983**
  Resident, Department of Obstetrics and Gynecology, Okayama University Medical School, Okayama, Japan.

  Resident, Department of Obstetrics and Gynecology, Himeji Red Cross Hospital, Hyogo, Japan.

  Resident, Department of Obstetrics and Gynecology, Mitoyo General Hospital, Kagawa, Japan.

- **April 1979-Dec. 1979**
  Resident, Department of Obstetrics and Gynecology, Okayama University Medical School, Okayama, Japan.
How to select and perform surgery for recurrent ovarian cancer?

Sang-Yoon Park
National Cancer Center, Korea

The clinical benefits of secondary cytoreductive surgery for ovarian cancer have not been as clearly established as those for primary debulking surgery. Recently accumulating data from more refined surgical intervention for patients with recurrent ovarian cancer suggest that survival may be improved at some situations. The selection criteria are based on two principal elements: (i) factors associated with surgical outcome (i.e., surgeon and institutional ability, site of recurrent tumor, number of recurrence sites, carcinomatosis, etc.), and (ii) factors associated with clinical characteristics (i.e., disease free interval, performance status, age, ascites, etc.). CT imaging is critical for documentation of disease extent and estimating the likelihood of resectability. Sometimes PET/CT is helpful to detect the lesion with suspected recurrence based on a rising serum level with negative or equivocal CT findings. Intra-operatively, the initial steps should include a detailed assessment of the extent of recurrent disease and the feasibility of completely resecting the tumors. All of the surgical principles and techniques that are used in primary cytoreduction are applicable. I would like to present parietal and visceral peritoneectomy with multiple organ resection later in my lecture. Secondary cytoreductive surgery could be recommended in those patients who (i) have disease free interval $\geq$ 12 months, (ii) have a few localized disease that is technically resectable, (iii) are of satisfactory performance status, (iv) are willing to receive subsequent chemotherapy. Ultimately, however, randomized trials such as DESTOP III and GOG 213 will be necessary to find out the true ‘value-added’ benefit of secondary surgery otherwise chemosensitive cohort of patients.

Biosketch

Education:
1973-1979 M.D. ; Medical College of Seoul National University, Seoul, Korea
1981-1983 Master; Medical College of Seoul National University, Seoul, Korea
1989-1991 Ph.D.; Medical College of Korea University, Seoul, Korea

Postgraduate Training:
1980-1983 Residency; Department of Ob & Gy., Seoul National University Hospital, Seoul, Korea
1987-2000 Director; Department of Ob & Gy, Korea Cancer Center Hospital, Seoul, Korea
1991-1992 Postdoc Fellow; Department of Ob. & Gy., Yale University, New Haven, CT, USA
1997.7 Visiting Doctor; Department of Surgical Oncology, Washington Cancer Center
1997.8 Visiting Doctor; Department of Ob. & Gy., Mainz University, Germany
2000.2-present Chief, Center for Uterine Cancer, National Cancer Center,

Academic and Professional Appointments:
2010-2011 Member, Program committee, Society of Gynecologic Oncology
2007-present Director, Insurance Committee of Korean Society of Gynecologic Oncology
2009-present Director, Gynecology Oncology Subcommittee of Korean Society of Obstetrics and Gynecology
2011-present Director, Surgical Committee of Korean Gynecologic Oncology Group
2013-present President, Korean Society of Lymphedema
Optimal management of recurrent ovarian cancer remains an issue of uncertainty, and actually might be very individualized. Options of treatment mainly depend on sensitivity of platinum, toxicity, patient’s preference and performance. The main goal of given therapy should focus on palliation of associated morbidities, prolongation of life, and most importantly, the sustenance of quality of life.

As a standard consensus, patients with recurrent diseases can be divided into those who are platinum-sensitive vs platinum-resistant. Irrespective of clinical trials, patients with sensitive disease should generally be treated with platinum-based combination regimens. Non-platinum-based combinations are also emerging options for this group of patients. The addition of bevacizumab in OCEAN study did show an improved progression-free survival (PFS) but no overall survival (OS). Patients with platinum-resistant are usually treated with non-platinum-based chemotherapy and single-agent therapies are preferred to get a balance between efficacy and acceptable toxicity of treatment. A recent AURELIA trials using bevacizumab in combination with single agent chemotherapy demonstrated an improved PFS, compared to chemotherapy alone. Besides, there are clinical trials assessing the treating potential of poly ADP-ribose polymerase (PARP) inhibitors in a subset of patients with BRCA mutations, which is probably one of the few target therapies applied in selected patients with recurrent ovarian cancer.

Immune therapies such as monoclonal antibody against cytotoxic T lymphocyte protein 4 (CTLA 4) or anti-programmed death ligand–1 (PDL–1) antibody are being developed in the treatment of recurrent ovarian cancer. Of them, carbohydrate is evolving as a novel target. We have detected Globo H and Gb5 expressions on about 70% and 80% of ovarian cancers. Anti-glycan antibodies were documented in around 15% of the serum of ovarian cancer patients by glycan array. Upon a mouse tumor model, a significant anti-tumor effect through adoptive transfer of the serum obtained from vaccinated mice was also demonstrated.

To further study the reality of clinical application of this cancer vaccine, we designed an open–labeled phase II clinical trial of active immunotherapy with Globo H–KLH plus QS21 in women who have non-progressive epithelial ovarian, fallopian tube, or primary peritoneal Cancer. The main objective is to determine if Globo H–KLH vaccine will improve progression–free survival in comparison with standard of care in subjects who have non–progressive epithelial ovarian cancer after cytoreductive surgery and platinum–based chemotherapy. We hope to understand the immune mechanism of this kind of vaccine and will try to develop an optimized therapeutic strategy utilizing this cancer vaccine for treatment of ovarian cancer.
Biosketch

Current Status:
1. Director, Section of Gynecologic Oncology, Department of Obstetrics and Gynecology, Mackay Memorial Hospital, Taipei, Taiwan.
2. Assistant Professor, Department of Medicine, Mackay Medical College, New Taipei, Taiwan.
3. Assistant Professor, Institute of Biomedical Science, Mackay Medical College, New Taipei, Taiwan.
4. Board member, Taiwan Association of Gynecologic Oncologists.

Past Status:
1. Secretary General, Taiwan Association of Gynecologic Oncologists.
2. Senior Attending physician, Department of Obstetrics and Gynecology, Mackay Memorial Hospital, Taiwan.
3. Fellow doctor, Gynecologic Oncology, National Health Research Institute, Taiwan.

Educational and Training:

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<tr>
<td>M.D.</td>
<td>1983–1990</td>
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<td>2002–2005</td>
<td>University of Cambridge, UK</td>
<td>Cancer Biology</td>
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<tr>
<td>Postdoctoral</td>
<td>2005–2007</td>
<td>Johns Hopkins University, USA</td>
<td>Cancer Immunology</td>
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Genomic based personalization or tailoring of treatment for ovarian and other forms of cancer could take two forms. In the first, genomic data derived from tumors could be used independent from other information to identify treatment opportunities which transcend cancer sites. This offers some appeal as it would create treatment groups for rare genomic events of sufficient size for clinical studies. However, it does not take into account the importance of cell context in determining the relevance of mutations. Fortunately, in gynecologic cancers and in particular in ovarian cancers, the current histological classification reflects the molecular nature of these diseases, and therefore, provides a scaffold through which further genomic-based classification and identification for treatment opportunities can be implemented. As an example, true HER2 amplification is seen in 20% of mucinous carcinomas of the ovary but is extremely rare in other subtypes of ovarian cancer. Also, another important feature but not as of yet targetable is the loss of ARID1A associated with endometriosis-derived ovarian cancers, the clear cell and endometrioid subtypes, which are not seen in high grade serous ovarian cancers. Since the subtypes of ovarian carcinoma are truly distinct diseases the fact that distinct treatment opportunities are concentrated within subtypes is not surprising. Due to the inherent rarity of subgroups within any histologic subtype of ovarian cancer there is limited number of clinical options that can best tested at any one time by the international clinical trials community making it incumbent on the basic and translational research community to present the best possible options for consideration. Therefore if we are going to effectively bring genomic based subtype specific treatment opportunities from idea stage into the realm of clinical reality appropriate subtype specific model systems and a better understanding of the functional importance and stability of proposed targets within cancers are urgently required.

Biosketch

Dr. David Huntsman is a Professor in the Departments of Pathology and Laboratory Medicine and Obstetrics and Gynaecology at The University of British Columbia (UBC) and is the Dr. Chew Wei Memorial Professor of Gynaecologic Oncology. He is a Staff Pathologist at the BC Cancer Agency (BCCA), and a Consulting Pathologist at the Vancouver General Hospital (VGH).

Dr. Huntsman is currently the Director of the BC multidisciplinary ovarian cancer research team (OvCaRe), Medical Director of the Centre for Translational and Applied Genomics (CTAG) at the BCCA, and co-Director of the Genetic Pathology Evaluation Centre (GPEC) at the Jack Bell Research Centre, VGH.

Dr. Huntsman research has led to development of predictive and prognostic tissue based cancer biomarkers for ovarian cancer and a wide variety of other tumour types. His team created a blueprint for subtype specific ovarian cancer control and have been leaders in the application of novel genomics technologies to ovarian cancer. As collaboration is critical in his field, Dr. Huntsman happily leads and engages in a wide number of multidisciplinary research groups. Most recently he has been working on the creation of broad based personalized medicine initiative for British Columbia.

He is the leader of the TFRI sponsored program grant to study the genomes of rare cancers and to translate discoveries made into biomarkers and treatment opportunities. This team hopes to both improve the management of a cluster of rare cancers and develop strategies and ideas that will have broader clinical impact.
Ovarian cancer is still the most lethal gynecological malignancy with few progresses made during the past years despite numerous patients included in several clinical trials. More recently, strategies incorporating molecular targeted therapies have been developed, leading to some promising results. Two major targets have been recognized as the most promising in ovarian cancers: angiogenesis and homologous recombination deficiency. The humanized monoclonal antibody bevacizumab, directed against VEGF, has demonstrated clinical activity in 4 randomized clinical trials both in first line and in the recurrent setting, and it is now incorporated in the standard treatment of ovarian cancer in several countries. A recent randomized clinical trial has also demonstrated the efficacy of bevacizumab administered together with carboplatin/paclitaxel in prolonging non only progression free survival (PFS) but also overall survival (OS) in patients with advanced cervical cancer. Several tyrosine kinase inhibitors (TKI) that target VEGF receptors and also inhibit other proangiogenic molecules have been investigated in ovarian cancer together with chemotherapy and/or as maintenance at the end of chemotherapy. The AGO-OVA16 trial indicated an advantage in PFS for patients with advanced ovarian cancer receiving pazopanib as maintenance at the end of their first line treatment. The same is true for nintedanib (AGO-OVA12), which showed an improvement in PFS when given together with carboplatin and paclitaxel and then continued as maintenance in patients with newly diagnosed ovarian cancer. Very recently another TKI, cediranib, has shown a benefit in PFS and OS when given in association with chemotherapy and as maintenance in patients with platinum-sensitive recurrent ovarian cancer patients. Besides angiogenesis, another important target confined to high-grade serous tumors is homologous recombination deficiency. It has been demonstrated that at least 50% of high-grade serous tumors have defective homologous recombination repair pathways (including not only germ-line BRCA1 or BRCA2 mutations, but also somatic mutations, BRCA methylation or mutations of other involved genes). Some clinical trials have now demonstrated the efficacy of PARP inhibitors in prolonging PFS of patients with platinum-sensitive recurrent ovarian cancer and prospective randomized phase III clinical trials are now ongoing investigating the role of PARP inhibitors as maintenance after both first line and second line chemotherapy in patients with BRCA mutations. It is now recognized that the term ovarian cancer encompasses several different tumors with distinct clinical behaviour, prognosis and molecular make-up. While few actionable mutations have been recognized in high-grade serous tumors, activation of PI3K pathway through mutations of PIK3CA, AKT, or inactivating mutations of PTEN may be seen in up to 30% of clear cell and endometrioid ovarian carcinomas. However, no clinical data are so far available to confirm the validity of targeting this pathway. Few trials have investigated the use of mTOR inhibitors in endometrial cancers with some but not exciting signal of activity. BRAF and KRAS mutations were initially reported in up to 68% of cases with low grade serous tumors indicating that the activation of mitogen-activated protein kinase (MAPK) signalling pathway could be an important target in these tumors. A phase II study of the MEK1/2 inhibitor selumetinib in 52 patients with recurrent low grade serous tumor indicated a response rate of 15.4% and a disease stabilization in 65% of patients with no apparent correlation with mutational status. Phase II stud-
ies of other MEK inhibitors are now planned.

Finally, given the high expression of the folate receptor alpha in ovarian cancer and the preliminary promising results of a phase II study, an ongoing phase III trial is investigating the combination of Vintafolide (a conjugate of a vinblastine analogue to folic acid) with pegylated liposomal doxorubicin in patients with platinum resistant recurrent ovarian cancer.

Biosketch

Education:
1969–1974 Liceo Classico A. Manzoni Lecco
1974–1980 Faculty of Medicine and Surgery, Università degli Studi Milan
1980–1984 Specialization in Obstetrics and Gynecology Milan

Professional Experiences:
1985–1986 Clinical Research Associate, Division of Medical Oncology, New York, USA
1986–1993 Assistant and then Attending, Department of Obstetrics and Gynecology, University of Milan, San Gerardo Hospital, Monza
1994–2001 Deputy-Director, Division of Gynecology, European Institute of Oncology, Milan
2001–2013 Director, Division of Medical Gynecologic Oncology, European Institute of Oncology, Milan
Associate Professor of Obstetrics and Gynecology, University of Milan–Bicocca
The 3rd ASGO Evening Symposium [2]

Anti-angiogenesis therapy for ovarian cancer: Moving beyond VEGF

M.D. Anderson Cancer Center, USA
Anil K. Sood

Angiogenesis is the predominant method of blood vessel formation during embryogenesis and adulthood, and it represents a central hallmark of cancer. Strategies aimed at targeting the VEGF/VEGFR pathway are arguably the most mature with regard to clinical development and have resulted in clinical benefit for women with ovarian cancer. However, many questions remain with regard to the types of drugs (e.g., ligand vs. receptor targeted), timing of anti-VEGF therapy, and optimal combinations with cytotoxic agents. Moreover, the emergence of drug resistance has fueled the evaluation of alternative strategies, which aim at not only non-cross-resistant or parallel angiogenesis mechanisms, but also inducible resistance pathways leveraged in the presence of VEGF/VEGFR blockade. From this work, new targets such as focal adhesion kinase (FAK), the polycomb group protein enhancer of Zeste homologue 2 (EZH2), Dll4/notch and EphA2 have emerged, and will be discussed during the presentation. While early studies of angiogenesis focused on endothelial cells, the importance of other compartments of the microenvironment in vascular growth, such as cancer-associated fibroblasts and infiltrating leukocytes, is also evolving. Collectively, a number of opportunities for better therapies have been identified to overcome resistance to anti-VEGF drugs and also to discover predictive biomarkers for identifying patients most likely to benefit from such therapies.

Biosketch

Positions and Employment:
1998–2002 Assistant Professor, Gynecologic Oncology, University of Iowa, Iowa City, IA
2002–2006 Associate Professor, Gynecologic Oncology, Cancer Biology, MDACC, Houston, TX
2005–pres Director, Blanton–Davis Ovarian Cancer Research Program, Gynecologic Oncology, MDACC, Houston, TX
2006–pres Professor, Gynecologic Oncology, Cancer Biology, MDACC, Houston, TX
2007–pres Bettyann A. Murray Distinguished Professorship in Ovarian Cancer Research, MDACC, Houston, TX
2009–pres Co-Director, Center for RNAi and Non-Coding RNA, MDACC, Houston, TX
2010–pres Vice Chairman, Translational Research, Gynecologic Oncology, MDACC, Houston, TX
2012–pres Co-Director, Women’s Cancer Moonshot Program, MDACC, Houston, TX

Honors:
- J.G. Moore Research Award, 1996
- Best All-Around Clinical Poster, 58th Annual Meeting of Society of Gynecologic Oncologists (SGO), 1997
- Young Investigator Award, Fourth Joint Conference of AACR and the Japanese Cancer Association, 1998
- James F. Nolan Award for the best overall research presentation, WAGO and FRS, 2002, 2004
- Charles A. Hunter, Jr. Prize Thesis Award, 2003
- Outstanding Educator, MDACC, 2003
- Educator of the Month, MDACC, 2005, 2007
- Faculty Scholar Award, MDACC, 2006–2009
- Excellence in Ovarian Cancer Research Award, The Gynecologic Cancer Foundation/Margaret Greenfield/Carmel Cohen, MD, 2007
- Elected, Alpha Omega Alpha Honor Medical Society, 2008
- Elected Fellow, The American Gynecological and Obstetrical Society, 2008
- Elected, The American Society for Clinical Investigation, 2009
- Excellence in Teaching Award, Association of Professors of Gynecology and Obstetrics, MDACC, 2009
- Elected Fellow of the Academy of Behavioral Medicine, 2010
- America’s Top Doctors for Cancer, Ltd. (U.S. News & World Report rankings), 2011
- GCF/Claudia Cohen Research Foundation Prize for Outstanding Gynecologic Cancer Researcher, 2011
- Dallas/Fort Worth Living Legend Faculty Achievement Award in Basic Research, MDACC, 2011
- Elected Fellow, the American Association for the Advancement of Science (AAAS), 2012
Various types of genetic alterations have been clarified and a novel molecular targeted therapy is anticipated in endometrial carcinomas. Especially, PI3K (phosphatidylinositol-3-kinase)/mTOR (mammalian Target of Rapamycin) pathway is frequently activated by mutations in PTEN (50%), PIK3CA (30%), and K-Ras (20%). Coexistence of these mutations is also commonly observed. In addition, FGFR2 (Fibroblast Growth Factor Receptor 2) mutations are detected in 12%. These activating mutations suggest that mTOR (mTORC1) inhibitors, such as everolimus and temsirolimus, which are approved in renal cell carcinomas in Japan, can be good candidates for endometrial carcinomas. However, clinical trials using mTOR inhibitor alone were not satisfactory (Response Ratio is < 10%). One possible mechanism is that PI3K activates not only mTOR, but also other AKT downstream effectors. Indeed, we reported that a dual PI3K/mTOR inhibitor, NVP-BEZ235, more robustly suppressed cell growth of endometrial cancer cells than everolimus. Therefore, targeting upstream molecules of mTOR, such as PI3K and AKT, might be more promising. The limitation of a single molecular targeted agent should be also taken into account. Suppression of mTOR induces receptor tyrosine kinases by negative feedback, which could result in activation of AKT and/or MAPK pathway. Combination of a PI3K/mTOR inhibitor and a MAPK inhibitor (or a tyrosine kinase inhibitor) might be one strategy to overcome the resistance by single agent. Recently, pazopanib, a multiple tyrosine kinase inhibitor, was approved in soft tissue sarcomas, including uterine sarcomas. Further evaluation in each histological type of uterine sarcomas is warranted to confirm the usefulness of pazopanib.

Biosketch

1994—Graduated from Faculty of Medicine, the University of Tokyo
1994—Resident at the University of Tokyo Hospital
1997–2001 Graduate School of Medicine, the University of Tokyo
2001–2002 Saitama Cancer Center (Saitama, Japan)
2002—Department of Obstetrics and Gynecology, Faculty of Medicine, the University of Tokyo
2005–2007 Post-doctoral fellow at Cancer Research Institute, University of California San Francisco (CA, USA)
2007—Department of Obstetrics and Gynecology, Faculty of Medicine, the University of Tokyo
2013—Assistant Professor, Department of Obstetrics and Gynecology, Faculty of Medicine, the University of Tokyo
Sarcomas are relatively rare malignant tumors that are derived from mesenchymal tissues—nonepithelial tissues derived from the embryonic mesodermal layer. Sarcomas comprise less than 10% of all cancers. Among all sarcoma, uterine sarcomas are rare neoplasms, comprising only 5% of uterine malignancies. Uterine sarcomas encompass leiomyosarcoma (LMSs), carcinosarcoma, and endometrial stromal sarcoma (ESSs) according to traditional classification. There are distinctive imaging features of both the primary tumor and the metastatic pattern of the various uterine sarcomas. Uterine sarcomas are staged based on the FIGO 2009 system which differentiates the staging of LMS/endometrial stromal sarcomas (ESSs) and adenosarcomas. LMSs make up approximately 67% of all uterine sarcomas, ESSs 17–25% and undifferentiated sarcomas 8–17%.

Pazopanib (GW786034, Votrient, GSK), is a synthetic indazolopyrimidine inhibiting the function of VEGF and PDGF, as these factors are thought to play an important role in soft tissue. In a randomized phase III trial, pazopanib met its primary endpoint: the median progression–free survival was 4.6 months for pazopanib and 1.6 for placebo (hazard ratio 0.31, 95% CI: 0.24 –0.40; p<0.0001). For subtype analysis, progression–free survival improved in patients of all ages, for most histological subgroups (leiomyosarcoma, synovial sarcoma, and others).

Pharmacogenetic approaches will be needed to identify individual determinants of response and outcome in order to maximize the benefits of targeting specific molecular events and keep side–effects to a minimum. Research in stem–cell biology and nanotechnology holds promise for additional novel treatment options in the future.

**Biosketch**

**Education:**
09/1985–07/1992 M.D., National Yang–Ming University College of Medicine, Taiwan
07/2005–06/2009 M.P.H., Institute of Public Health, National Yang–Ming University, Taiwan
09/2009–06/2012 PhD., Institute of Public Health, National Yang–Ming University, Taiwan

**Current Affiliation:**
1. Chief, Section of Gynecologic Oncology Research, Taipei Veterans General Hospital
2. Associate professor (Full time Faculty), Department of Medicine, School of Medicine, National Yang Ming University
Selection of drugs against ovarian cancer
based on gene expression profile

Department of Gynecology and Obstetrics, Kyoto University Graduate School of Medicine, Japan
Norimori Matsumura, Ryusuke Murakami, Masafumi Koshiyama,
Tsukasa Baba, Junzo Hamanishi, Ken Yamaguchi, Kaoru Abiko,
Yumiko Yoshioka, Ikuo Konishi

The standard chemotherapy against ovarian cancer has been so far determined from randomized control trials. However, as biology and drug response of tumors differ from cancer to cancer, individualized treatment is urgently required. The aim of this study was to develop a scoring system to predict chemotherapeutic response by use of gene expression microarray and a bioinformatic tool: single sample gene set enrichment analysis (ssGSEA). We used a public microarray dataset GSE15622, which is a collection of laparoscopic biopsy specimens of serous ovarian cancers taken before either carboplatin (n = 14) or paclitaxel (n = 20) treatment, as a training set to determine carboplatin sensitivity score (C-score) and paclitaxel sensitivity score (T-score). The C-score predicted cisplatin response in a breast cancer dataset (GSE18864, p = 0.04). In an ovarian cancer dataset of 194 cases taxane was used and 47 cases not used (GSE9891), taxane containing regimens improved survival only in the cases T-scores were high (p = 0.006). We next found epirubicin response can be predicted in a breast cancer dataset (GSE16446, p = 0.04). Finally, we found response to chemotherapy regimens including bevacizumab can be predicted in a colorectal cancer dataset (GSE19862, p = 0.03). On the other hand, gene signatures developed from the COSMIC dataset of more than 300 cell lines did not predict drug response in clinical samples. These results indicate that the key drugs currently used against ovarian cancer can be predicted by a scoring system developed from clinical samples. This study would facilitate individualized drug selection against ovarian cancer by use of transcriptome data.

Biosketch

Apr 1990–Mar 1996  Department of Medicine, Kyoto University
May 1996–Apr 1998  Resident at Kyoto University Hospital
May 1998–Mar 2000  Medical Staff at Hyogo Prefectural Amagasaki Hospital
Apr 2000–Aug 2002  Medical Staff at Toyooka Public Hospital
Sep 2002–Mar 2003  Medical Staff at Kyoto University Hospital
Apr 2003–Mar 2007  Graduate School of Medicine, Kyoto University
Apr 2005–Mar 2007  Research fellow at Duke University, Division of Gynecologic Oncology
Apr 2007–Mar 2008  Clinical Assistant Professor at Kyoto University Hospital
Apr 2007–Jul 2013  Assistant Professor at Department of Gynecology and Obstetrics Kyoto University
Aug 2013–
Associate Professor at Department of Gynecology and Obstetrics Kyoto University
Development of novel therapy for gynecological cancer

Department of Obstetrics and Gynecology, Gangnam Severance Hospital, Yonsei University College of Medicine, Korea
Jae-Hoon Kim

The convergence of the biotechnology and the understanding of cancer biology have resulted in diverse cancer therapies. Hyperthermic therapy has recently received substantial attention from the oncology community. Previously study showed that high temperature more than 42°C enhanced apoptosis of mammalian cells in vitro. In addition, hyperthermia has theoretical benefits when it concurrently administered with chemo or radiotherapy through overcoming tumor resistance induced by hypoxia. This treatment approach offers the promise of improved targeting of tumors with the potential for an increase in the therapeutic ratio. This talk will focus on advances in rationale and proof of hyperthermic therapy, technology, and an assessment of current and future clinical applications.

Biosketch

Education:
1989: M.D., The Catholic University of Korea, College of Medicine, Seoul, Korea
1998: Ph.D., The Catholic University of Korea, Postgraduate School, Seoul, Korea

Postgraduate Training:

Positions Held & Faculty Appointment:
Mar. 1994-Feb. 1995: Oncology Fellow, Department of Obstetrics and Gynecology, Our Lady Mercy Hospital, Inchon, Korea
Mar. 1995-Feb. 1996: Oncology Fellow, Department of Obstetrics and Gynecology, St. Vincent’s Hospital, Suwon, Korea
Mar. 1996-Feb. 1997: Oncology Fellow, Department of Obstetrics and Gynecology, St. Mary’s Hospital, Seoul, Korea
Mar. 1997-Feb. 1999: Instructor (Full-time Lecturer), Department of Obstetrics and Gynecology, St. Vincent’s Hospital, Suwon, Korea
Mar. 1999-Feb. 2004: Assistant Professor, Department of Obstetrics and Gynecology, The Catholic University of Korea, Suwon, Korea
Jul. 2000-Feb. 2002: Gynecologic Oncology Research Fellow, Department of Obstetrics and Gynecology, Brigham and Women’s Hospital, Harvard Medical School
Mar. 2004-: Associate Professor, Department of Obstetrics and Gynecology, Yongdong Severance Hospital, Yonsei University College of Medicine
Mar. 2010-: Professor and Chair, Department of Obstetrics and Gynecology, Gangnam Severance Hospital
Mar. 2012-: President, Korea Gynecologic Cancer Bank
Mar. 2013-: Vice – Director, Yonsei Biomedical Research Institute
Concurrent chemoradiotherapy (CCRT) for locally advanced cervical cancer: What is next?

University of the Ryukyus, Japan
Takafumi Toita

Nearly 15 years have passed since concurrent chemoradiotherapy (CCRT) was established as the standard treatment for patients with locally advanced uterine cervical cancer. As well as various types of chemotherapy regimens concurrently delivered, the value of adjuvant/neoadjuvant sequential chemotherapy to CCRT has been investigated in international trials. Another important investigational is the efficacy of adjuvant CCRT after radical hysterectomy. One large international trial in patients with an intermediate-risk of recurrence is ongoing.

Guidelines in Western countries state no difference in prognosis and recommended treatment strategy according to histopathology. However, most Japanese clinicians consider that patients with adenocarcinoma/adenosquamous carcinoma (AC/ASC) to have a poorer prognosis than those with squamous cell carcinoma (SCC), and think that different treatment strategies are needed. One retrospective study from Taiwan showed that patients with AC/ASC treated primarily with RT had inferior outcomes compared with patients with SCC, and cisplatin-based CCRT (C-CCRT) provided no benefit. Another small Japanese retrospective study suggested that patients with AC/ASC treated with paclitaxel-based CCRT (TP-CCRT) had better outcomes than those given C-CCRT. Based on these findings, the Japanese Gynecologic Oncology Group (JGOG) is developing a multi-institutional phase III study to compare TP-CCRT and C-CCRT for patients with cervical AC/ASC.

Radiotherapy (RT) has a major role in CCRT. Conventional RT with 2-dimensional planning has rapidly shifted to novel, 3-dimensional high-tech RT, such as intensity modulated radiotherapy (IMRT) and image-guided brachytherapy (IGBT). Unfortunately, RT principles and methods for uterine cervical cancer in Japan differ in some aspects from those used globally. Therefore, Japanese radiation oncologists need to develop new international standards through mutual concession in the high-tech RT era.

Biosketch

1987-1988 Residency, Chiba University Hospital, Chiba, Japan
1988-1991 Residency, National (International) Medical Center Hospital, Tokyo, Japan
1991-1998 Clinical Instructor, University of the Ryukyus, Okinawa, Japan
1998-2002 Assistant Professor, University of the Ryukyus, Okinawa, Japan
2002-present Associate Professor, University of the Ryukyus, Okinawa, Japan
Chemotherapy for cervical cancer: Neoadjuvant and adjuvant setting

Department Gynecology, Cancer Institute Hospital, Japan
Nobuhiro Takeshima, Maki Matoda, Akiko Yamamoto, Akiko Abe,
Hidetaka Nomura, Sanshiro Okamoto, Yasutaka Kawamata, Kohei Omatsu,
Kazuyoshi Kato, Kenji Umayahara

Objective. Patients with stage IB2–IIB cervical cancer are usually treated with concurrent chmoradiation (CCRT) or radical hysterectomy followed by CCRT. In our institute, non-radiotherapy treatment has been performed in such bulky cervical cancer for the purpose of reducing treatment morbidity. The current study evaluates the possibility of this treatment for stage IB2–IIB cervical cancer.

Methods. Between 2005 and 2010, 83 patients with FIGO stage IB2–IIB cervical cancer were treated with the aim of non-radiotherapy treatment, i.e., neoadjuvant chemotherapy (NAC) followed by radical hysterectomy plus postoperative chemotherapy. Clinical records were reviewed in these patients to evaluate the effectiveness of this treatment.

Results. Overall response rates of NAC was 67% for squamous cell carcinoma (SCC), 75% for non-SCC, and 70% (58/83) in total cases. Complete responses (CRs) by imaging techniques were achieved in 8.4% of patients, and 4.8% showed pathological CR. In 24% of patients, surgical treatment was not performed after NAC because of poor response. In 48% of patients, CCRT was performed as postoperative adjuvant therapy. Among patients who underwent radical hysterectomy, those with more than 3 metastatic nodes generally showed poor prognosis. The 3-year disease-free survival and 3-year overall survival were 75.8% and 83%, respectively.

Conclusions. The current study suggests the possibility of non-radiotherapy treatment for stage IB2–IIB cervical cancer.

Biosketch

1983, March Graduated from Yamaguchi University, School of Medicine
1988, October Department of Obstetrics and Gynecology, Yamaguchi University, School of Medicine
1989–1990 Department of Pathology, Newcastle University (UK)
1992, February Department of Gynecology, Cancer Institute Hospital (Tokyo)
2006, November Vice–Director of Department of Gynecology, Cancer Institute Hospital
2012, May– Department Director of Gynecology, Cancer Institute Hospital
Clinical and molecular features of ovarian clear cell carcinoma

Dept of Ob and Gyn, Shimane University School of Medicine, Japan
Kentaro Nakayama

Ovarian clear cell carcinomas (OCCCs) account for about 40% of all epithelial ovarian carcinomas in Japanese populations. OCCCs show unique clinical features such as a high incidence of vascular thromboembolic complications, and hypercalcemia. Recent study has shown that a subset of OCCCs evolve from endometriosis. OCCCs are relatively resistant to conventional platinum and taxane based chemotherapy which is associated with its poor survival, and new therapeutic strategies are urgently required. This study will focus on how recent discoveries have enhanced our understanding of the molecular pathogenesis of OCCCs, leading to new therapeutic opportunities. These include mutations in ARID1A, which provides a link to endometriosis, upregulation of the phosphatidylinositol 3-kinase/AKT pathway, particularly through mutations of PIK3CA and inactivation of PTEN, and increased activity of pathways involved in angiogenesis. Targeting NAC1/FASN pathway offers additional opportunities for treating this enigmatic tumor subtype.

Biosketch

Education: Institution and Location

<table>
<thead>
<tr>
<th>Degree</th>
<th>Year(s)</th>
<th>Field of Study</th>
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<tbody>
<tr>
<td>Tokyo Medical University Tokyo, Japan</td>
<td>M.D.</td>
<td>1996</td>
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<tr>
<td>Shimane Medical University Izumo, Japan</td>
<td>Ph.D.</td>
<td>2002</td>
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Professional Experience:
1996–2001 Resident in Obstetrics and Gynecology, Shimane Medical University
2002–2004 Medical instructor in Obstetrics and Gynecology, Shimane Medical University
2004– Research fellow, Department of Pathology, Johns Hopkins Medical Institutions
2008– Associate Professor in Obstetrics and Gynecology, Shimane University

Selected Honors:
2005– HERA Ovarian Cancer Award
2011 Japan Society of Obstetrics and Gynecology Research Award
2011 Shimane University Research Award
2011 Medical Research Encouragement Prize of The Japan Medical Association
2012 Eminent Scientist of the year 2012 World Scientist Forum International Award
Molecular genetics of ovarian clear cell carcinoma

Department of Pathology, Laboratory Medicine and Obstetrics and Gynecology, The University of British Columbia, Canada

David G. Huntsman

Clear cell carcinoma is phenotypically and clinically distinct from other subtypes of ovarian carcinoma. It shares strong epidemiological links with endometrioid carcinoma in particular associations with endometriomas and Lynch syndrome. In some cases the relationship between these cancers is manifest in their occurrence from the same endometriotic cyst. Despite a shared origin, the clinical behavior and molecular genetics of clear cell and endometrioid carcinomas of the ovary are quite distinct. The known dominant genomic abnormalities in clear carcinoma of the ovary are ARID1A loss and PI3kinase pathway mutations where CTNNB1 mutations are commonly found in endometrioid carcinomas. So far none of these features are clinically usable as biomarkers and their role in directing treatment options needs to be developed. Other targetable abnormalities are reported at a lower incidence, such as MET amplification and in some cases ERBB2 copy number gain. Expression profiling of ovarian clear cell carcinomas suggest a strong IL6/VEGFR/HIF driven angiogenic phenotype, this is perhaps not surprising since these cancers share morphologic features with renal clear cell carcinoma. The morphology of ovarian clear cell carcinoma also suggests a common underlying metabolic phenotype, perhaps caused by HNF1 beta expression. Improvements in the management of clear cell carcinoma demand several advances including validated model systems and a better understanding of the functional consequences of ARID1A and other common genomic or metabolic features.

Biosketch

Dr. David Huntsman is a Professor in the Departments of Pathology and Laboratory Medicine and Obstetrics and Gynaecology at The University of British Columbia (UBC) and is the Dr. Chew Wei Memorial Professor of Gynaecologic Oncology. He is a Staff Pathologist at the BC Cancer Agency (BCCA), and a Consulting Pathologist at the Vancouver General Hospital (VGH).

Dr. Huntsman is currently the Director of the BC multidisciplinary ovarian cancer research team (OcCaRe), Medical Director of the Centre for Translational and Applied Genomics (CTAG) at the BCCA, and co-Director of the Genetic Pathology Evaluation Centre (GPEC) at the Jack Bell Research Centre, VGH.

Dr. Huntsman research has led to development of predictive and prognostic tissue based cancer biomarkers for ovarian cancer and a wide variety of other tumour types. His team created a blueprint for subtype specific ovarian cancer control and have been leaders in the application of novel genomics technologies to ovarian cancer. As collaboration is critical in his field, Dr. Huntsman happily leads and engages in a wide number of multidisciplinary research groups. Most recently he has been working on the creation of broad based personalized medicine initiative for British Columbia.

He is the leader of the TFRI sponsored program grant to study the genomes of rare cancers and to translate discoveries made into biomarkers and treatment opportunities. This team hopes to both improve the management of a cluster of rare cancers and develop strategies and ideas that will have broader clinical impact.
Role of laparoscopy in cervical cancer surgery

Kurashiki Medical Center, Japan
Hiroyuki Kanao

Total laparoscopic radical hysterectomies have been performed not only for early stage but also for advanced stage cervical carcinomas. Their technical feasibility is acknowledged. However, bladder dysfunction after radical hysterectomy procedures has been well documented.

Total laparoscopic nerve-sparing radical hysterectomy has been developed recently for early stage cervical carcinoma, with a technical procedure already established. The principal points of this operation can be summarized by describing it as a procedure in which the hypogastric nerves, instead of the pelvic nerve plexus and its vesical branches, are preserved at several steps during a classical radical hysterectomy. Consequently, the hypogastric nerves are regarded as the main anatomical landmark of the nerve-sparing radical hysterectomy because the hypogastric nerves are the upper limit of the pelvic nerve plexus and the vesical branches.

The origin and distribution of the pelvic nerve plexus have not been fully described especially in an open surgery, and the laparoscopic surgery has an advantage at the point of magnification and meticulous dissection compared with the open surgery.

If anatomical details of the pelvic nerve plexus and the vesical branches could be elucidated laparoscopically, various types of nerve-sparing laparoscopic radical hysterectomy would be achievable, with procedures adaptable to the level of cervical carcinoma risk.

In this presentation, we will introduce three types of nerve-sparing laparoscopic radical hysterectomy and ascertain the correlation between the preserved pelvic nerve networks and bladder function after laparoscopic nerve-sparing radical hysterectomy.

Biosketch

Working experience:
1997.3 Graduated Osaka University
1997.4–1998.3 Resident of Department of Gynecologic Oncology, Osaka University Faculty of Medicine
1998.4–2000.3 Department of Gynecologic Oncology, Osaka Rosai Hospital
2000.4–2002.3 Chief resident of Department of Gynecologic Oncology, Osaka University Faculty of Medicine
2002.4–2004.3 Assistant of Department of Gynecologic Oncology, Osaka University Faculty of Medicine
2004.4– Department of Gynecologic Oncology, Kurashiki Medical Center

Qualification:
Specialist of general obstetrics and gynecology in JSOG (Japan society of obstetrics and gynecology)
Specialist of gynecologic and obstetric endoscopy in JSGOE (Japan society of gynecologic and obstetric endoscopy)
Specialist of gynecologic oncology in JSGO (Japan society of gynecologic and oncology)
Faculty member of JSSES (Japan society for endoscopic surgery)
Faculty member of JSGOE (Japan society of gynecologic and obstetric endoscopy)
Faculty member of APAGE (The Asia-Pacific association for gynecologic endoscopy)
The manager of the meeting of Japan society of gynecologic and obstetric endoscopy
Laparoscopic surgery for endometrial cancer

Dept. of Obs. & Gyn., Mackay Memorial Hospital, Taiwan

Taiwanese Gynecologic Oncology Group (TGOG)

Kung-Liahng Wang

Today, laparoscopic surgery refers to a minimally invasive procedure of the abdomen that gains access to a very focal area without a large incision and renders a minimal formation of scar tissue. The intraoperative benefits of the laparoscopic technique include minimal blood loss, less adhesion formation and better visual perspective. It is clear that gynecologic oncologists can manage gynecologic cancers after more than twenty years of experience with laparoscopic procedures. Many patients with endometrial cancers may benefit from laparoscopic hysterectomy, laparoscopic staging, evaluation, or a combination of them. Laparoscopic tools do have their limitations, however, particularly in very obese women.

Ever since the approval of DaVinci robotic surgical system for gynecologic surgery by FDA in 2005, many institutions have published several series documenting its feasibility and benefits over laparoscopy in the management of endometrial cancer. The rapid adoption of robotic-assisted laparoscopic surgery in endometrial cancer treatment is attributed to the advantages of 3D vision, wristed instruments and improved ergonomics.

There is no question that the complication rate of robotic-assisted or laparoscopic surgery is extremely low in the hands of experienced gynecological oncologists. It has become a popular and widespread technique accepted by gynecologic oncologists as an appropriate alternative to conventional surgery in the management of patients with endometrial cancers.

Biosketch

Title and Affiliation:
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Director, Division of Gynecologic Oncology, Department of Obstetrics and Gynecology, Mackay Memorial Hospital, Taipei, Taiwan (2003–2011)
President, Taiwanese Gynecologic Oncology Group (2010–now)
Past-President, Taiwan Association of Gynecologic Oncologists (2008–2010)
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Associate professor, Department of Nursing, Mackay Medicine, Nursing and Management College, Taipei, Taiwan (2009–now)
Member of the Executive Council of Asian Society of Gynecologic Oncology (ASGO) (2009–now)
Member of the Executive Council of Asian Gynecologic Oncology Group (AGOG) (2007–now)
Member of International Gynecologic Cancer Society (IGCS) (1991–now)
Member of Society of Gynecologic Oncology (SGO) (2012–now)

Education:
1973-1980 M.D.
2000-2002 Department of Medicine, Kaohsiung Medical University, Kaohsiung, Taiwan
Institute of Hospital and Health Care Administration, School of Medicine, National Yang–Ming University, Taipei, Taiwan

Postdoctoral Training:
1. Internship 1979–1980 Kaohsiung Medical University Hospital, Kaohsiung, Taiwan
2. Military service 1980–1982 Medical officer, Taiwan Army
3. Residency 1982–1986 Department of Obstetrics and Gynecology, Mackay Memorial Hospital, Taipei, Taiwan
4. Fellowship 1986–1988 Division of Gynecologic Oncology, Department of Obstetrics and Gynecology, Mackay Memorial Hospital, Taipei, Taiwan
1990–1991 Department of Gynecologic Oncology, University of Texas, M.D. Anderson Cancer Center, Houston, Texas USA
Clinical manifestations of early stage hydatidiform mole

Department of Obstetrics and Gynecology, Faculty of Life Sciences, Kumamoto University, Japan. Department of Pathology, The Jikei University, School of Medicine, Japan

Takashi Ohba, Junya Miyoshi, Masaharu Fukunaga, Hidetaka Katabuchi

Early detection of pregnancy due to the widespread use of transvaginal ultrasonography and increased sensitivity in detecting human chorionic gonadotropin (hCG) has resulted in earlier diagnosis of hydatidiform mole. As a result, molar pregnancies do not necessarily present with classical symptoms and clinical findings. Early stage complete or partial hydatidiform moles do not appear as multivesicular structures in the first trimester ultrasound. Pre-evacuation hCG levels did not significantly differ between early molar and non-molar pregnancies. Clinicians may misdiagnose early hydatidiform mole as spontaneous abortion of a non-molar pregnancy if the aborted material is not routinely examined histopathologically.

The early stage hydatidiform moles appeared as thickened and echogenic intrauterine layers with an irregular surface without multicystic structures. Intrauterine anechoic fluid collection was commonly observed. However, it was not pathognomonic because a similar finding was also observed in non-molar abortion, and it was also difficult to distinguish complete and partial mole by ultrasonography. The histopathological features of early stage hydatidiform mole are also different from those of classical hydatidiform mole. In early stage molar pregnancy, villous edema is not fully developed, particularly in partial hydatidiform mole, and trophoblastic hyperplasia is usually focal and mild.

The evacuation of hydatidiform mole within early pregnancy did not decrease the incidence of following persistent trophoblastic disease (PTD) and the ultrasound examination of early hydatidiform mole could not predict impending PTD. Follow-up of hCG levels, similar to the management of classical mole, is also required to detect any subsequent development of PTD following early stage hydatidiform mole.

Biosketch

1992–1993 Assistant Professor, Kumamoto University School of Medicine
1993–1995 Post Doctoral fellow, University of Pennsylvania
1995–2002 Assistant Professor, Kumamoto University Hospital
2002–2007 Lecturer, Kumamoto University Hospital
2007–2009 Associate Professor, Kumamoto University Faculty of Medical and Pharmaceutical Sciences
2010–present Associate Professor, Kumamoto University Faculty of Life Sciences
Gestational trophoblastic neoplasia (GTN) comprises a group of diseases known to be highly responsive to chemotherapy. With the development of development of effective chemotherapeutic protocols and identification of prognostic factors allowing individualization of treatment, it is now considered a curable disease among malignancies. GTN patients are classified based on the International Federation of Gynecology and Obstetrics anatomic staging combined with the WHO Prognostic Scoring System. The first line treatment for high risk disease metastatic disease has been the EMA–CO regimen consisting of etoposide, high–dose methotrexate with folinic acid, actinomycin D, cyclophosphamide and vincristine. Recent reports on the primary use of the EMA–CO regimen show a high remission rate approaching 90%. Approximately 30% of women with high risk GTN will show resistance to initial treatment and will respond incompletely and relapse. In these cases, the primary salvage therapy or second line treatment is etoposide and a platinum agent with methotrexate and actinomycin D or the EMA–EP regimen Other platinum based regimen with etoposide used as third line treatment are in combination with Paclitaxel (TP/TE), Bleomycin (BEP), and Ifosfamide (VIP, ICE). Adjunctive surgery in the form of hysterectomy or surgical extirpation of isolated metastasis and radiation in patients with resistant trophoblastic tumors performed with chemotherapy have contributed with the management in these resistant cases. Newer drugs like Capecitabine, Irinotecan, Temzolomide, signal transducing agents and DNA–repair inhibitors are now being studied.

Biosketch

Chief, Section of Trophoblastic Diseases, Department of Obstetrics and Gynecology,
University of the Philippines–Philippine General Hospital
Clinical Associate Professor, Department of Obstetrics and Gynecology, University of the Philippines, College of Medicine
Vice President, Philippine Society for the Study of Trophoblastic Disease
Treasurer and Active Consultant, Department of Obstetrics and Gynecology, Asian Hospital and Medical Center
Pre Medical Degree: BS Zoology, University of the Philippines, Diliman, Quezon City, Oct. 1977
Medical Degree: University of the Philippines, College of Medicine, 1982
Internship, University of the Philippines–Philippine General Hospital, 1982–1983
Residency in Obstetrics and Gynecology, University of the Philippines–Philippine General Hospital, 1983–1987
Fellowship in Trophoblastic Disease, Section of Trophoblastic Diseases, Department of Obstetrics and Gynecology,
Training in Obstetrics and Gynecologic Ultrasound, Section of Ultrasound, Department of Obstetrics and Gynecology,
University of the Philippines–Philippine General Hospital, March–May, 2000.
Abstracts

Workshop
Objective: Most common hereditary ovarian carcinoma syndrome is hereditary breast and ovarian cancer (HBOC). BRCA1/2 is mismatch repair genes associated with this. There are barriers for confirmation testing economically and efficiently according to ethnicity and country. The objective of this study was to investigate the detection rate of HBOC among Korean ovarian carcinoma patients based on family history and immunohistochemistry.

Methods: This study examined 21 patients diagnosed with ovarian carcinomas between September 1, 2011 to February 28, 2013 by single surgeon and counselor. All patients were provided genetic counseling based on immunohistochemistry (IHC) of mismatch repair genes (BRCA1, BRCA2) and 1st, 2nd relatives’ family history of cancer. Additionally, direct full sequencing to verify germ line mutations was performed to all patients after consent.

Results: Median age was 54. Advanced staging (IIIIV) cases were 62 percent (13/21). There were 3 refusals after counseling. Patients with family cancer history were 3/21 (14%). The number of patients with negative IHC results for BRCA1/BRCA2 was 9 and 6. Both negative patients were 3/21 (14%). Both normal staining patients were 4/21 (19%).

There were 3/18 patients (17%) with germ line mutations (two BRCA1 and one BRCA2). One of three patients accepted family screening, 13 year-old daughter of one germ line mutation patient was having same mutation. Variation of unknown significance mutation patients were 4/18 (22%).

Conclusion: Our data indicate approximately 17% of patients have a germ line mutation in this study group. Active genetic counseling with IHC and family history can help detect HBOC among ovarian carcinoma patients and prevent effectively in the future.

WS1-02 Evaluation of Risk of Malignancy Index as a triage tool for ovarian cancer

Gregorius Tanamas, Jasmine Iskandar, Tofan Widya Utami, Tricia Dewi Anggraeni, Kartiwa Hadi Nuryanto

Faculty of Medicine University of Indonesia, Indonesia \[1, 2\], Gynecologic Oncology Division of Department of Obstetrics and Gynecology DR. Cipto Mangunkusumo Hospital \[3\]

Objective: To evaluate Risk of Malignancy Index (RMI) as a triage tool for ovarian cancer in DR. Cipto Mangunkusumo Hospital.

Method: This is a retrospective study conducted from January 2008 - December 2012 in patients diagnosed with ovarian mass. Patients admitted for surgery due to ovarian masses were included to this study. RMI 3 score was calculated based on ultrasonography examination in DR. Cipto Mangunkusumo hospital. CA 125 test and menopausal status. Patients without final pathological report and incomplete data were excluded from study.

Data were analysed using SPSS 20 to evaluate RMI result and final pathological report in benign and malignant case.

Result: From 882 patients identified with ovarian masses from cancer registry, only 99 patients aged 17-70 y.o were included in this study. Ultrasonography examination showed that most of patients had solid mass and ascites (19.2%). Meanwhile, CA 125 showed that patients with < 35 U/mL were 10.1% and ≥ 35 U/mL were 89.9%. Patients with RMI scores < 200 (benign cases) were 19 cases (19.2%) and ≥ 200 (malignant cases) were 80 cases (80.8%). Meanwhile, Patients with benign final pathological report were 23 cases (23.2%) and malignant cases were 76 cases (76.8%). There was no statistical difference in RMI between benign and malignant cases based on final pathological report.

Conclusion: Our study showed that RMI was not accurate as triage tool for ovarian cancer in our hospital. Further investigation and more patients are needed to confirm this study.

Keyword: risk of malignancy index (RMI), ovarian cancer, CA 125, ultrasonography, menopausal status.
WS1-03 Comparison of CA-125, ultrasound, menopausal status and Risk of Malignancy Index (RMI) in pre-operative diagnosis of ovarian tumors

Arun Muthuvel Veluswamy, DR. Jayavaragavan
Sri Ramachandra University, India

**Aim:** To evaluate the diagnostic performances of risk of malignancy index (RMI), Menopausal status, CA-125 and Ultrasound score in differentiating between benign and borderline or malignant ovarian tumors.

**Materials & Methods:** This is a prospective study. The clinical data were obtained from consecutive 467 women with pelvic masses scheduled for laparotomy/laparoscopy at SRMC Hospital between July 2011 & July 2013. The RMI was obtained from the ultrasound score, CA 125 & Menopausal status. The diagnostic values of each parameter and the RMI were determined and compared.

**Results:** In our study, 11.5% of ovarian tumors in pre-menopausal age group were malignant while 61% of ovarian tumors were malignant in post-menopausal age group. RMI with a cut-off 150 had sensitivity of 84% and specificity of 97% in detecting malignant ovarian tumors. CA-125 > 30 had a sensitivity of 84% and specificity of 83%. Ultrasound score more than 2 had a sensitivity of 96% and specificity of 81%.

**Conclusion:** Our study has demonstrated the RMI to be an easy, simple & applicable method in the primary evaluation of patients with pelvic masses. It can be used to refer suspected malignant patients to be operated by a gynaec oncologist.

WS1-04 The management of peritoneal surface malignancies at the American University of Beirut Medical Center: Initial experience

Muhieddine AF Seoud, Faek Jamali,
Ali Shameseddine, Mohammad Jawad Khalifeh
American University of Beirut Medical Center, Dept Ob-Gyn, Lebanon

**Background:** Peritoneal carcinomatosis (PC) has been traditionally considered a terminal disease with median survivals reported in the literature of 6 to 12 months. Cytoreductive surgery (CRS) and hyperthermic intraperitoneal chemotherapy (HIPEC) have gradually gained acceptance as the standard of care in the management of selected cases of PC.

**Methods:** Patients with peritoneal surface malignancies of gastrointestinal or gynecological origin at the American University of Beirut Medical Center were enrolled as of January 2010 and treated using multimodality therapy with combinations of systemic therapy, cytoreductive surgery (CRS), and HIPEC. We present the results of our initial experience using a retrospective review of a prospectively collected database.

**Results:** 23 patients were treated with CRS and HIPEC. There were 10 male and 13 female patients. Most common indication (35%) was PC of colorectal origin, followed closely by pseudomyxoma (30%), ovarian malignancies (22%), gastric cancer (8%) and mesothelioma (4%). The Mean duration of surgery was 480 minutes. Mean Peritoneal Cancer Index was 26. Twenty one (91%) patients had a complete cytoreduction. Mean morbidity and mortality rates were 35 and 4.3 per cent, respectively. Mean hospital stay was 16 days. At a mean follow up of 18 months, median survival has not been reached.

**Conclusions:** We report the successful establishment of an active peritoneal surface malignancy multidisciplinary treatment program with excellent early results that are comparable to those published by reputable centers in the literature. Careful patient selection, a multidisciplinary approach and proper surgical training and technique are essential for the success of such a program.
WS1-05  Disseminated endometroid adenocarcinoma of ovary in a 14 year old girl: A case report
Ilmali, P Ihalagama, Anupama Samarakoon, Chandana Jayasundara, Kanishka Karunarathne
National Cancer Institute, Sri Lanka, National Cancer Institute, Sri Lanka, National Cancer Institute, Sri Lanka

Endometroid adenocarcinoma is the second common malignant epithelial neoplasm of the ovary. It is extremely rare in teenage group. This report elaborates atypical presentation and poor outcome of such case.

We report a case of 14 year old girl who was diagnosed to have a primary ovarian tumour with metastatic deposits in large bowel omentum and paraaortic lymph nodes (Stage IIIIC).

She presented to a district general gynaecological unit with acute abdominal pain and vomiting. Pelvic ultrasound scan revealed 6 cm haemorrhagic cyst of right ovary with minimum free fluid in the peritoneal cavity. The diagnostic laparoscopic biopsy featured an endometroid adenocarcinoma (Grade 3) with focal mucinous differentiation.

She developed intestinal obstruction following laparoscopy and was transferred to National Cancer Institute. At the initial laparotomy, the ovarian tumour and the obstructing growth at splenic flexure of the colon were noted. A left hemicolectomy, right oophorectomy, omentectomy and lymphadenectomy were performed.

There was a debate regarding the site of origin due to the bowel involvement. Further immunohistochemical studies of the biopsy confirmed an ovarian primary. Following MDTM, total abdominal hysterectomy and left oophorectomy were performed prior to chemotherapy with carboplatin and plexatexal.

During third cycle of chemotherapy, she developed bowel obstruction and experienced burst abdomen which was conservatively managed as an open wound. She died 9 months of initial presentation.

WS1-06  Additional intraperitoneal cisplatin/etoposide to first-line chemotherapy in advanced epithelial ovarian cancer: Interim analysis of a randomized phase II study
Rong Jiang, Rongyu Zhang, Jinjin Yu, Zhiyuan Dai, Yuqin Zhang, Huaying Wang, Jie Tang, Xi Cheng, Shumo Cai
Fudan University Cancer Hospital, China, Wuxi Caner Hospital, Suzhou Municipal Hospital

The purpose of this study is to evaluate the feasibility and the role of an additional intraperitoneal chemotherapy with cisplatin and etoposide in bulky Stage IIIIC and IV ovarian cancer. The interim analysis is conducted when half of the patients enrolled.

Patients with stage IIIIC and IV Eplhelial Ovarian, Fallopian Tube, or Primary Peritoneal Cancer who underwent optimal primary cytoreduction (< = 1cm) were randomized to receive either intraperitoneal cisplatin 50 mg/m² and etoposide 100 mg/m² weekly for 4 weeks followed by intravenous paclitaxel 175 mg/m² plus carboplatin AUC 5 or docetaxel 75 mg/m² plus carboplatin AUC every 3 weeks for 6cycles, or the intravenous regimen as in the intraperitoneal group every 3 weeks for 6cycles.

103 patients enrolled. 83.0% (84/103) of the patients in the intraperitoneal therapy group completed 4 cycles of the assigned therapy. Grade 3 and 4 Leucopenia and anemia were more common in the intraperitoneal group (P = 0.026 and P = 0.030, respectively). However, there were no significant differences in other hematologic, gastrointestinal, metabolic, or neurologic toxic effects. The median follow-up was 19.0 months. The median PFS was 27.6 months and 18.5 months in intraperitoneal therapy group and intravenous therapy group (P = 0.117, HR = 0.637). None statistical difference was shown between the two therapy groups in cost analysis (P = 0.566).

As compared with intravenous chemotherapy alone, the toxicities of sequential intraperitoneal and intravenous chemotherapy are higher, but acceptable. A trend of prolonged PFS is observed in intraperitoneal group, but mature data will be available in the final analysis.
Pazopanib maintenance therapy in East Asian (EA) women with advanced epithelial ovarian cancer (AEOC): Results of two clinical trials

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Seoul National University, Korea1, University Hospital in Hamburg, Hamburg, Germany2, Cancer Hospital CAMS & PUMC, Beijing, China3, Iwate Medical University, Iwate, Japan4, Samsung Medical Center, Sungkyunkwan University, Seoul, Korea5, Zhejiang Cancer Hospital Hangzhou, China6, Tohoku University, Sendai, Japan7, National Cancer Center, Goyang Korea8, Qiu Hospital, Shandong University, Shandong, China9, Cancer Hospital of Jiangsu Province, Nanjing, China10, Mackay Memorial Hospital, Taipei, Taiwan11, The University of Hong Kong, Hong Kong, China12, Sun Yat-Sen University Cancer Center, Guangzhou, China13, Peking University People's Hospital, Beijing, China14, GlaxoSmithKline, Collegeville, USA15, GlaxoSmithKline, Shanghai, China16, Kliniken Essen Mitte, Essen, Germany17

Background and Aims: Pazopanib is an oral inhibitor of VEGFR, PDGFR, and c-KIT. Pazopanib maintenance therapy in patients with AEOC that had not progressed after first-line treatment significantly prolonged progression-free survival (PFS) in the global, randomized, double-blind study AGO-OVAR16/VEG110655 (HR = 0.77; 95% CI: 0.64–0.91; P = 0.0021). We analyzed PFS for the EA subgroup of OVAR16, and integrated data from OVAR16 and a phase II, EA-specific study of similar design (VEG114012).

Methods: Patients with histologically confirmed AEOC were randomized 1:1 to receive pazopanib 800 mg once daily or placebo for up to 24 months. Primary endpoint was investigator-determined PFS by RECIST.

Results: All randomized patients (N = 145) in VEG114012 and 209 of 940 randomized patients in OVAR16 were of Asian ethnicity; most (350/354) were enrolled in Asia. Integrated PFS analysis (n = 354) revealed HR = 1.11; 95% CI: 0.82–1.52. Similar PFS results were observed in VEG114012 (HR = 0.98; 95% CI: 0.59–1.62) and in an unplanned PFS analysis of the EA subgroup in OVAR16 (HR = 1.16; 95% CI: 0.78–1.73). EA patients had an unexpectedly prolonged PFS in the placebo arm (medians 23.9 and 21.5 months in OVAR 16 and integrated analysis, respectively). Thus far, differences in baseline factors and exposure cannot explain these results. No new safety signals emerged, but rates of neutropenia and hypertension were higher in EA patients.

Conclusions: For reasons that remain currently unknown, EA patients with AEOC who receive maintenance pazopanib appear to derive less PFS benefit than those in the overall intent-to-treat analysis. This is the first such report for anti-angiogenic tyrosine kinase inhibitors.
WS1-09 Comparison of survival outcome between clear cell and non-clear cell types of epithelial ovarian cancer in stage I A and IB

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Objectives: Ovarian clear cell carcinomas (CCCs) have long been recognized as the most lethal histologic subtype of ovarian cancer, and hence all CCCs are treated as a high-grade carcinoma. However, a noticeable disagreement regarding the prognosis of early-stage CCCs has been recently raised and we sought to evaluate the survival outcomes of early-stage CCCs compared with other types of epithelial ovarian cancer.

Methods: Data was collected from the patients who had FIGO stage IA or IB ovarian CCCs from 1993 to 2013 at a single institution. Patients' clinicopathologic characteristics including survival outcomes were compared with those of other types of epithelial ovarian cancer (non-CCCs).

Results: A total of 116 patients who met the inclusion criteria were identified; 23 (19.8%) with CCCs and 93 (80.2%) with non-CCCs. 87% of CCCs and 63.6% of non-CCCs patients underwent a lymphadenectomy (p = 0.046), and 91.3% of CCCs and 43% of non-CCCs patients underwent adjuvant chemotherapy (p < 0.001). During the mean follow-up period of 62 months, tumor recurrence occurred in two cases, which were non-CCCs that received adjuvant chemotherapy. On the other hand, none of CCCs showed the evidence of recurrence. Median disease-free survival was 216.0 months in both groups (p = 0.461).

Conclusions: Our findings demonstrate that early-stage CCCs show excellent prognosis in the clinical setting with high rate of adequate surgery and adjuvant chemotherapy. Although there was no recurrent CCC in this small series, further large study is needed to evaluate a survival outcome and to consider whether the routine administration of adjuvant chemotherapy is justified in CCCs.

WS1-10 Primary treatment and prognostic factors of carcinosarcoma of ovary, fallopian tube, and peritoneum: A Taiwanese Gynecologic Oncology Group study

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Objectives: To determine the clinical prognostic factors in carcinosarcoma of ovary, fallopian tube, and peritoneum.

Materials and Methods: This retrospective study was undertaken by the Taiwan Gynecologic Oncology Group (TGOG). The retrieved clinical data included demographic factors, medical disease, tumor status, extent of operation, and adjuvant chemotherapy.

Results: Totally, 63 cases diagnosed with carcinosarcoma of ovary, fallopian tube, and peritoneum were identified. Only 61 patients with complete data were enrolled for further data analysis. The mean follow-up period was 20 ± 2.5 years. The mean overall survival was 15.4 months. By log-rank test, age, menopausal status, parity, hypertension, diabetes, tumor size, para-aortic lymph metastasis, pretreatment CA 125, preceding diagnostic operation, hysterectomy, lymphadenectomy, other operations, and paclitaxel use were not predictive of overall survival. Without pelvic lymph metastasis, omentectomy, no gross residual implants, and platinum had a trend toward better survival. Stage I, unilateral ovarian tumor, metastatic tumors less than 2 cm, ifosfamide, and cisplatin/ifosfamide regimen were significantly predictive of survival.

Conclusions: Early diagnosis at stage I unilateral ovarian tumor, metastatic tumors less than 2 cm, and cisplatin/ifosfamide regimen were predictive of survival on log-rank tests. Omentectomy and complete debulking operation also showed a trend toward better survival. Thus, they should be part of treatment in carcinosarcoma of ovary, fallopian tube, and peritoneum.
WS2-01 Diagnostic value of the conventional and liquid-based endometrial cytology in endometrial cancer

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Objective: Currently, conventional endometrial cytology with direct endometrial sampling is the most common method of screening for endometrial cancer in Japan. The purpose of our study is as follows: (1) to compare the detection rate between endometrial cytology and biopsy for diagnosis of endometrial cancers, and (2) to estimate the diagnostic value of conventional and liquid-based preparations for endometrial cytology.

Materials and Methods: (1) We reviewed preoperative cytology and biopsy specimens of 1272 cases of endometrial cancer. The direct endometrial sampling method was applied for endometrial cytology. (2) For the comparison of the two preparation methods (conventional and liquid-based), we used samples of 37 patients who underwent hysterectomy.

Results: (1) The detection rates of endometrial cytology and biopsy of all the stages of endometrial cancers were 83.9% and 95.7% respectively. Conventional endometrial cytology, using the direct endometrial sampling method, showed the similar diagnostic value of endometrial biopsy. (2) The comparison between the conventional and liquid-based methods for the endometrial cytology, there were two unsatisfactory cases when we used the conventional method. Some differences when using the liquid-based method were observed in cytological findings; namely, frequent cell clumps, reduced cell size (due to the liquid), and increased numbers of observable nucleus.

Conclusion: Detection rates by endometrial cytology and biopsy were almost the same for the diagnosis of endometrial cancers. Even though there were some differences between conventional and liquid-based methods, our results indicated that both methods are useful for detecting endometrial cancers.

WS2-02 Significance of endometrial cells in cervical cytology

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Objective: To determine the clinical significance of endometrial cells in cervical cytology.

Material and Method: A retrospective study was performed from the cytologic database of Seoul National University Hospital. All cervical cytologic examinations from the women older than 40 years between January 1998 and December 2007 were identified. Medical records were reviewed to find any endometrial cells from cytology. Cytologic and histologic follow-up was performed to determine the presence of clinically significant lesions.

Results: Among 75673 cervical cytology cases in women over 40, 1076 cases were identified with any endometrial cells as follows 1,033 with normal endometrial cells (nEMCs), 23 with atypical EMCS (aEMCs), and 20 with endometrial cancer cells (EMCCs). Significant endometrial or cervical diseases were found in 0.4%, 33.3%, and 100% of cases during follow-up of the women with nEMCs, aEMCs, and EMCCs, respectively.

Conclusion: Unlike aEMCs and EMCCs, nEMCs on cervical cytology did not have a risk for clinically significant lesions including endometrial hyperplasia and endometrial cancer. There is no need to perform routine endometrial sampling in women showing nEMCs as the 2001 Bethesda System recommendations.
**WS2–03**

Usefulness of transcervical tumor resection in diagnosing myometrial invasion for young patients with endometrial cancer who received fertility-preserving progesterone therapy

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**Objective:**

It is often difficult to correctly diagnose myometrial invasion (MI) using MRI in young patients who received fertility-preserving high-dose medroxyprogesterone acetate (MPA) therapy for endometrial cancer and who present with equivocal findings suspicious of MI. We aimed to clarify retrospectively, the diagnostic accuracy of MI with transcervical resection (TCR).

**Patients and Methods:**

We reviewed 174 patients with atypical endometrial hyperplasia complex (65 cases), or endometrioid adenocarcinoma G1 (105 cases), or G2 (4 cases), who underwent treatment with MPA administration. Fifty-one cases eventually received hysterectomy due to insufficient treatment effects, MRI findings suspicious of MI, or intrauterine recurrence. Among 51 cases, 12 cases received TCR for tumor resection. The diagnosis of MI was evaluated by resection of tumor with basal myometrial tissues with depth of 3 mm. We calculated sensitivity, specificity, positive predictive value (PPV), negative predictive value (NPV) and accuracy of pathological diagnosis with TCR specimens compared to pathological diagnosis of hysterectomy specimens.

**Results:**

Three cases presented with MRI findings suspicious of MI, either thinning of junctional zone or irregularity of subendometrial enhancement, and were definitely diagnosed as positive MI by TCR due to pathological findings of myometrial invasion or lymphovascular space invasion. Two cases later became pregnant and delivered alive children after negative MI diagnosis by TCR. Sensitivity, specificity, PPV, NPV and accuracy were 43% (3/7), 100% (5/5), 100% (3/3), 56% (5/9) and 67% (8/12), respectively.

**Conclusions:**

Prior to initiation or discontinuation of fertility-preserving hormonal therapy, TCR is useful for diagnosing MI in patients with suspicious MI findings of MRI.

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**WS2–04**

Endometrial cancer risk of recurrence and postoperative histopathological findings

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**Objective:** To evaluate preoperative endometrial cancer risk of recurrence, based on dilatation and curettage (D&C) histopathological and ultrasonographic findings, to postoperative histopathological findings.

**Method:** This cross-sectional study involved 73 endometrial cancer patients of Dr. Cipto Mangunkusumo Hospital from January 2006 to December 2012 which obtained from medical record. The inclusion criteria were endometrial cancer patients with complete (D&C) histopathological, ultrasonographic and postoperative histopathological reports. Risk of recurrence was classified according to European Society for Medical Oncology (ESMO) 2009. Final diagnosis and stage was confirmed based on Federation of Gynecology and Obstetrics (FIGO).

**Result:** From 405 patients from hospital registry, only 73 of them had complete reports. Most of the patients were postmenopausal (51.8%), non-nulliparity (79.9%) and obese (49.5%). According to risk of recurrence stratification, low, intermediate and high risk were found in 12 patients (16.4%), 27 patients (36.9%) and 34 patients (46.7%). There was 60.2% early stage and 39.8% advanced stage. In high risk group, rates of advanced stage were prominent compared to other groups. There were 38.3% patients with postoperative positive lymph nodes metastasis.

**Conclusion:** Most patients were preoperatively diagnosed as high risk group. High risk of recurrence showed more positive lymph node compared to low or intermediate risk. Result of preoperative histopathological and myometrial invasion compared to postoperative results showed inconsistent. Patients with ≥1 myometrial invasion had more positive lymph nodes metastasis. Endometrial cancer risks compared to FIGO stage showed the higher the risk patient had, the more advanced the stage were.

**Keywords:** endometrial cancer, low risk, intermediate risk, high risk, FIGO stage, histological type, lymph node.
WS2-05  Feasibility and safety of laparoscopic surgery for obese Korean women with endometrial cancer: Long-term results at a single institution

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Objective: To evaluate the feasibility and survival outcome of laparoscopy in obese women with endometrial cancer.

Study Design: We conducted this retrospective study over a 13 year period and included all women with early-stage endometrial cancer who underwent laparoscopic surgery. Patients were divided into three groups, non-obese (body mass index [BMI] < 25.0), overweight (BMI 25-27.99), and obese (BMI ≥ 28.0) which is higher than the proposed International Obesity Task Force classifications (IOTF) for BMI in Asia. These groups were compared in terms of their clinical characteristics, treatment methods, surgical and survival outcomes, and complications.

Results: In total, 55 of the 278 eligible patients assessed were obese women. There were no differences between the three groups of women in terms of the proportion of patients who underwent lymphadenectomy, surgical stage, histologic type, and type of adjuvant treatment administered (P = 0.067, 0.435, 0.737, and 0.739, respectively). There were no differences found in terms of the intra-, post-operative, and long-term complications, operative time, total number of removed lymph nodes, blood loss, and duration of hospitalization (P = 0.458, 0.173, 0.076, 0.124, 0.770, 0.739, and 0.831, respectively). The disease-free survival times were 101.7 vs 103.0 vs 135.0 months (P = 0.1560) and the overall survival times were 109.8 vs 105.6 vs 139.5 months (P = 0.1603) for the non-obese, overweight, and obese groups, respectively.

Conclusions: Most obese women with endometrial cancer can be safely managed through laparoscopy with apparently the same surgical and survival outcomes and hospitalization as women with normal BMIs.

WS2-06  Analysis of prognostic parameter in endometrial cancer: Obesity as a prognostic indicator in endometrial cancer

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Endometrial cancer has been divided into two groups according to clinical and pathological characters. Type I endometrial cancer occurs in premenopausal and perimenopausal women and follow a favorable course. Type II endometrial cancer occurs in postmenopausal women and its behavior is aggressive. One hundred and sixty patients with endometrial cancer who underwent operation in our hospital during 2003 to 2012 were enrolled in this study. We investigated the involvement of age at onset, clinical stage, vessel involvement, deep myometrial invasion, histological grade, estrogen and progesterone receptor status, body mass index (BMI), complications with diabetes mellitus, hypertension, and hyperlipidemia in overall and progression free survival by using Cox-Hazard model. We experience 17 cases of death due to disease and 28 cases of recurrence. Our analysis revealed that advanced stage, nodal and distant metastasis, vessel involvement, deep invasion, negative estrogen and progesterone receptor status, normal weight (BMI < 22) are significant poor prognostic factor. Hazard ratios of overweight (22 < BMI < 25) and of obesity (BMI > 25) in overall survival are 0.654 (0.156, 2.742, 95% CI) and 0.742 (0.170, 3.234, 95% CI), respectively, as compared with normal weight. Distant metastasis and negative estrogen and progesterone receptor status are related to normal weight. Our data suggest the possibility that endometrial cancers of patients with normal weight might be classified as type II tumor, based on its relationship with hormone receptor status and metastasis. Our data showed that weight of patient is prognostic factor in endometrial cancer.
WS2-07  Pure uterine papillary serous cancer: Evaluation of survival and management: A Taiwanese Gynecologic Oncology Group (TGOG) study

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Objective: Uterine papillary serous carcinoma (UPSC) is a distinct subtype of endometrial cancer. The aim of this study was to identify clinical and pathologic characteristics of patients with UPSC and then to correlate these characteristics with progression-free survival (PFS) and overall survival (OS).

Methods: Clinicopathologic data of patients with UPSC stages I to IV UPSC treated between 1991 and 2010 were retrospectively reviewed. The Kaplan-Meier method was used to generate survival curves. Factors predictive of outcome were compared using the log-rank test and Cox regression analysis.

Results: There were total 127 patients with pure UPSC recruited. The median age at the time of diagnosis was 62 years (range, 33-88 years). Stages I, II, III, and IV were identified in 35.4%, 23%, 37.0%, and 25.3% of patients, respectively. The 5-year OS among all 127 patients was 51.9%. The 5-year OS for patients with stage I, II, III, and IV disease was 90.4%, 66.7%, 31.1%, and 17.3%, respectively. Tumor recurrence was observed in 40.9% of the patients. A multivariate analysis showed that tumor stage and optimal cytoreduction had independent influences on both PFS and OS in all UPSC patients. Subgroup analysis indicated that optimal cytoreduction and the combination of chemotherapy and radiation improved PFS and OS in advanced-stage UPSC patients (FIGO stage III/IV).

Conclusions: UPSC represents a histologically aggressive subtype of endometrial cancer with commonly extra-uterine disease. Comprehensive surgical staging with optimal cytoreduction is mandatory for all UPSC patients with survival benefits. Systemic chemotherapy combined with radiation should be considered for the management of advanced-stage UPSC patients.

WS2-08  Long term survival analysis of clear cell type endometrial cancer: A retrospective multi-center study by Taiwanese Gynecologic Oncology Group (TGOG)

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Background: Clear cell type endometrial carcinoma (CCEC) is much less frequent and has rarely been studied. CCEC is considered with an aggressive clinical behavior and has a worse prognosis. Since the rarity of this malignancy, most studies included a limited number of patients, and clinical management of CCEC is largely unknown.

Methods: A retrospective multi-institutional medical record review of patients with CCEC was conducted by TGOG. Totally 200 cases with CCEC diagnosed between January 1991 and December 2010 were collected. Staging and histological grading criteria were determined postoperatively based on the 2009 FIGO staging system.

Results: 177 cases received complete staging surgery were included for analysis. 96 cases (51.9%) were of stage I; 14 cases (8%) stage II; 56 cases (32%) stage III and 9 cases (5.1%) stage IV. There were 126 cases (71.2%) received adjuvant therapy. The 5-year cancer specific survival is 73.5%. The age and stage were the independent risk factors by multivariate analysis for cancer specific survival. There were 98 cases (59.1%) with pure clear cell tumor, 15 cases (9%) with clear cell component over 50% tumor, 32 cases (19.3%) with clear cell component between 10-50% tumor, and 31 cases (18.6%) with clear cell component between 5-10% tumor. The 5-year cancer specific survival for patients with pure clear cell, clear cell component over 50%, clear cell component over 10% were 78.5%, 79.0%, and 78.2%, respectively.

Conclusion: (1) The 5-year cancer specific survivals of patients with different clear cell component tumor were similar. Patients with more than 10 percent clear cell component may classify as clear cell carcinoma of endometrium. (2) The prognosis of patients with pure type or mixed CCEC is similar.
**WS2-09**

**Raloxifene hydrochloride improves health care problems of patients who underwent surgeries for endometrial cancer: A multicenter clinical trial**

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**Aims:**
The removal of ovaries is necessary at the surgery for endometrial cancer. However, since the loss of ovaries could cause several health problems in patients, the establishment of the prevention therapy would be required. We conducted a multicenter clinical trial and assessed the effect of raloxifene on bone mineral density (BMD), bone metabolism and lipid profile of the patients who underwent surgeries.

**Methods:**
59 patients who underwent surgery for endometrial cancer were recruited. After a written informed consent, patients were randomized into two groups: group I: 34 women on alfalcaldiol (1 mg/day) and group II: 25 women on the study drug, raloxifene hydrochloride, at a dose of 60 mg/day with alfalcaldiol.

Participants were evaluated by BMD, serum bone markers (NTx and BAP) and lipid profiles at the enrollment, 6, 12 and 24 months after the enrollment.

**Results:**
42 finished 24 month follow-up. The mean age of participants was 56.6 years and average lumbar BMD was 0.845 g/cm² (83.6% of young adult mean). After 24 months, lumbar BMD was significantly reduced in group II (−3.4%) compared with group I (−0.4%). The values of LDL-cholesterol were significantly reduced by 11.9% in group II, while no significant reduction was seen in group I.

**Conclusion:**
The study demonstrates that raloxifene treatment to patients of endometrial cancer leads to a significant increase in lumbar BMD, a decrease in bone markers as well as LDL-cholesterol values, suggesting that raloxifene could constitute a therapeutic option to improve the health care problems of the patients after surgery.

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**WS2-10**

**Efficacy of methotrexate chemoprophylaxis in preventing postmolar gestational trophoblastic disease among patients with high-risk hydatidiform mole: A randomized controlled trial**

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**Objective:**
To determine the efficacy of methotrexate chemoprophylaxis in preventing postmolar gestational trophoblastic disease (PMGTD) among patients with high-risk complete hydatidiform mole (CHM).

**Methods:**
Between September 2007 to 2013, 99 hydatidiform mole patients after suction curettage were randomly allocated to treatment and placebo groups. The treatment group received methotrexate given at a dose of 0.4 mg/kg body weight given intramuscularly once a day for 5 days. The control group received a placebo administered intramuscularly once a day for 5 days.

Serum βhCG levels and occurrence of toxicities were monitored. The progression to development of PMGTD or achievement of remission was determined. Descriptive statistics were used to analyze patient demographics and relative risk ratio was computed to determine significant outcomes. All tests of significance were carried out at a 0.05 alpha level of significance, 95% CI.

**Results:**
Both groups had similar baseline characteristics in terms of age, gravidity, baseline βhCG, and corpus size. The overall incidence of PMGTD was 27.9%. For the per protocol analysis, the total incidence of PMGTD was 16.67% for the treatment group and 38.71% for the control group. The computed risk ratio was 0.43 (95% CI: 0.17-1.07, p value = 0.07). The association of PMGTD with the use of methotrexate showed a borderline p value, indicating a trend favoring the use of methotrexate in preventing PMGTD.

**Conclusion:**
Methotrexate chemoprophylaxis lowers the incidence of PMGTD with a borderline statistical significance. Its clinical significance however is much evident compared to our preliminary findings.
WS3–01 Key Note: Laparoscopic surgery for gynecological cancer: Overview

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Widespread utility of laparoscopy in the field of benign gynecologic surgery has been developed in these decades. Although there were controversies over the use of laparoscopy on gynecologic oncology surgery, nowadays, a rising trend in laparoscopic application for gynecologic oncology has been set.

In our data, a retrospective 139 patient with early-stage cervical cancer was reviewed from June 1994 to December 2005. 60 patients were in FIGO stage I A, 76 in IB, and 3 in IIA. Mean operation time was 231.1 +/- 61 minutes. Median number of pelvic lymph node retrieval was 16. Major intraoperative complications included 1 great vessel injury, 1 ureteral injury, 1 colon injury, and 6 cystotomy injuries. In a median follow-up of 92.1 months, the mean cumulative disease-free and overall survival rates were 91.01% and 92.78%, respectively. We concluded that laparoscopic treatment of early stage cervical cancer by experienced surgeons is an ideal alternative.

In 2009, Gynecologic Oncology Group published a prospective multicenter study about the comparison between Laparoscopy Laparotomy for Comprehensive Surgical Staging of Uterine Cancer. Patients with clinical stage I to IIA endometrial cancer who were randomly assigned to laparoscopy (n = 1696) or open laparotomy (n = 920) were analyzed. Laparoscopy had fewer moderate to severe postoperative adverse events than laparotomy (14% vs 21%, respectively; P<0.0001) but similar rates of intraoperative complications. The study concluded laparoscopic surgical staging for uterine cancer is feasible and safe in terms of short-term outcomes and results in fewer complications and shorter hospital stay. In our study, we also confirmed the better outcome from laparoscopic group.

For the ovarian cancer, most studies showed that laparoscopy did not compromise the survival and recurrence prognosis in comparison with open abdominal approach of staging surgery. As the trend shows that laparoscopy has been playing an prominent role in treating early ovarian cancer, we could expect laparoscopy to become an attractive surgical option in the future for ovarian cancers.

Laparoscopic treatment for gynecologic oncology has been current fashion and established gradually. In addition, a well-trained laparoscopist is most important to maintain and surpass the present prognosis. The training goal should be “To train a gynecologist be an endoscopic oncologist not just as for training an oncologist practicing endoscopy.”

WS3–02 Laparoscopic surgery for early–stage uterine endometrial cancer

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Objectives: The usefulness of the operation under laparoscopic surgery for early-stage uterine endometrial cancer is investigated

Methods: Laparoscopic surgery (n = 12) was compared with the laparotomy (n = 32), and operation time, the amount of bleeding, and the number of extraction lymph nodes and duration of hospitalization were examined.

Result: 12 patients were treated by laparoscopy for 2 years and 6 months from January, 2011. The myometrial invasion of All 12 patients were less than 1/2, and the pathology of 11 were well differentiated endometrioid adenocarcinoma. In postoperative evaluation, 11 patients have stage Ia. But only one has stage IIIc stage (pT1aN1M0) by lymph nodes metastasis. All patients have no recurrence. Although operation time (P = 0.0057) of Laparoscopy was significantly long compared with Laparotomy, complications did not occur. And the significant difference did not accept to the number of extraction lymph nodes (P = 0.8370) and the amount of bleeding (P = 0.9907). And short duration’s of hospital stay (P = 0.001) in Laparoscopy as compared with Laparotomy.

Conclusion: I think that the laparoscopic surgery for early–stage uterine endometrial cancer cancer is safety and useful.
**WS3–03** Laparoscopic sentinel lymph node (SLN) biopsy in endometrial cancer

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**Objectives:**
To evaluate the feasibility of laparoscopic sentinel lymph node biopsy in endometrial cancer.

**Materials and Methods:**
Between 2010 and 2013, 17 patients with endometrial cancer in clinical stage I-II were enrolled. 99mTc-tin colloid or phytic acid was injected to myometrium under guidance of transvaginal ultrasonography and in pericervical areas, on the day before operation. Patent blue was injected in same site intraoperatively. Total laparoscopic hysterectomy, bilateral adnexectomy and retroperitoneal lymphadenectomy were performed laparoscopically in all patients. Retroperitoneal lymphadenectomy was performed with trans peritoneal approach.

**Results:**
Total number of SLN were 33 nodes in 9 patients. Detection rate, sensitivity, and negative predictive value were 67%, 100%, 86%, respectively.

We detected all SLN which were lymphscintigraphically, blue-stained lymph node were radioactive in 46%.

Median number of lymph nodes yielded were 43 (range 1-28 in pelvic nodes), median operative time was 382 minutes, median blood loss was 159 ml.

**Conclusion:**
Detection rate of SLNs was lower than that of other reports, especially in blue-dye method. Method of RI injection and injection sites should be improved.

Laparoscopic technique could be performed without severe complications. It is suggested that laparoscopic SLN biopsy is clinically feasible in endometrial cancer.

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**WS3–04** Lymphatic mapping and sentinel node biopsy in early stage cervical cancer

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**Objective:** To describe the experience and usefulness of lymphatic mapping and laparoscopic sentinel lymph node (SLN) biopsy in early stage cervical cancer.

**Materials and Methods:** SLN detection was performed by the combined method (Tc-99m radioactive tracer and blue dye) undergoing laparoscopic surgery for cervical cancer. From August 2010 to August 2012, all of these cases underwent bilateral pelvic lymph node dissection to research positive and negative predictive value of frozen section analysis of SLN. After August 2012, we omitted pelvic lymph node dissection when the metastases are negative on SLN frozen section analysis. We used LAP DISC Mini (abdominal wall sealing device) to insert a Geiger counter and collect lymph nodes.

**Results:** Thirteen patients were included until August 2012. All of them were stage IB1. Laparoscopically, we could detect and biopsy even small lymph node less than 1 cm. The SLN detection rate was 78%. The number of median SLN was 3 (range 1-9). The median diameter of SLN was 14mm (range 5-32mm). The negative predicting value of the diagnosis of frozen section was 100%. The LAP DISC Mini was useful to insert a Geiger counter and collect large lymph nodes.

**Conclusion:** Laparoscopic biopsy of SLN in early stage cervical cancer is a feasible and safe procedure. We would like to show how to use LAP DISC Mini by showing the video. We would like to mention that what we should pay attention to when we omit pelvic lymph node dissection.
**WS3-05** Surgical intervention for extreme obese patient of early stage endometrial cancer
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Introduction: Surgical intervention is the gold standard for treating endometrial cancer. Obesity is one of the important risk factors of endometrial cancer. During laparotomy, it is difficult to keep good operational field in extreme obese patients. Two ways of approach, panniculectomy combined laparotomy and laparoscopic surgery, were compared for the solution of this problem.

Material and Method: 5 cases of endometrial cancer, whose BMI was more than 40kg/m² and surgical intervention was done between January 2010 and May 2013 were included in this study. Laparotomy with panniculectomy was done in first 3 cases. Laparoscopic surgery was done in last 2 cases. Operation outcomes and adverse events were analyzed retrospectively.

Result: Average operation time of laparotomy and laparoscopic group were 225 minutes vs. 208 minutes, average blood loss were 148ml vs. 30ml, post operational hospital stay were 20 days vs. 4 days respectively. Major complication was SSI in laparotomy group that needed additional hospitalization, and at the last 2 cases, operation outcomes and adverse events were analyzed retrospectively.

Discussion: Radiation therapy alone is not a good solution. Laparotomy combined with panniculectomy is one solution, but long term placement of subcutaneous drainage due to excessive exudate from wide resection, long hospitalization and SSI include subcutaneous abscess formation are the problems.

**WS3-06** Feasibility and safety of laparoscopic surgery for elderly women with endometrial cancer: Long-term results from a single institution
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Objective: To investigate the safety and feasibility of laparoscopic management in elderly women with endometrial cancer.

Methods: A retrospective study was performed on a elderly women (≥65 years) with endometrial cancer who underwent either open (n = 50) or laparoscopic surgery (n = 71).

Results: The mean ages of patients were 68.5 and 69.6 years in the laparoscopy and laparotomy group, respectively (P = 0.765). There was no significant difference between these two groups in terms of the proportion of women who underwent a lymphadenectomy, surgical stage, histologic type, previous laparotomy, and type of adjuvant treatment (P = 0.265, P = 0.141, P = 0.084, P = 0.020 and P = 0.369, respectively). There were also no differences in the incidence of short term complication, operative times, and total number of removed lymph nodes (P = 0.216, P = 0.821, P = 0.484, P = 0.049, respectively). The laparoscopy group showed a shorter hospital stay (8.0 vs. 14.8 days, P = 0.001), a lower estimated blood loss (187.0 mL vs. 480.0 mL, P < 0.05), fewer intra-operative blood transfusions (4.2% vs. 22.0%, P = 0.004), and a lower recurrence rate (14.1% vs. 32.0%, P = 0.024). The disease-free survival rates were 85.9% vs. 68.0% (P = 0.016) and overall survival rates were 90.1% vs. 90.0% (P = 0.969) for the laparoscopy and laparotomy group, respectively.

Conclusions: Most elderly women with endometrial cancer can be safely managed by laparoscopy with better surgical and disease-free survival outcomes compared with laparotomy.
WS3-07  Single port access surgical staging for endometrial cancer: Initial experience

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**Objective:** Single port access (SPA) surgery could be utilized in staging for gynecologic oncology. We are to report outcomes of endometrial cancer patients with SPA surgical staging.

**Methods:** From Nov 2011 to Dec 2012, 16 cases of endometrial cancer with SPA surgical staging were reviewed retrospectively. All the operative procedures of hysterectomy +/- pelvic or peri-aortic lymphadenectomy (including 3 sentinel lymph node biopsy) were done by conventional laparoscopic instruments with Octoport platform.

**Results:** Fifteen stage I and 1 stage IVB endometrial cancer were included in this study. There was no case of conversion to laparotomy or multi-port surgery. Mean age of the objects was 55 years old. Nine patients received pelvic lymphadenectomy and 8 had peri-aortic lymphadenectomy. Three had sentinel lymph node biopsy and 4 omitted lymphadenectomy. Two premenopausal patients preserved the ovaries. Mean operative time was 182 minutes (SD, 77) and mean 24 pelvic lymph nodes and 14 peri-aortic lymph nodes were retrieved. One patient who had bone metastasis showed positive peri-aortic lymph node metastasis. One showed post-operative ileus subside with conservative treatment and post-operative hospital stage was 3 days (range, 1-15). All the patients including 1 occult stage IV patient were free of disease after follow up.

**Conclusion:** SPA surgery can be applicable to surgical staging for endometrial cancer with safety and efficacy. Operative outcomes and complication are comparable to conventional laparoscopic staging.

WS3-08  The methodology of vault drainage after complicated single-port access laparoscopic assisted vaginal hysterectomy

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**Objective:** To assess the feasibility and methodology of vault drainage, and to estimate whether vault drainage reduces postoperative morbidity associated with complicated single-port access laparoscopic assisted vaginal hysterectomy (SPA-LAVH).

**Design:** Retrospective cohort study

**Setting:** University teaching hospital

**Population:** 236 women underwent SPA-LAVH between April 2010 to January 2013

**Methods:** A vault drain was inserted when we were concerned about postoperative oozing, vault hematoma or pelvic infection after complicated SPA-LAVH. 84 women underwent ‘vault drain’ and the remaining 152 underwent ‘no drain’.

**Main outcome measures:** The primary outcome was reduction in postoperative morbidity after complicated SPA-LAVH. Secondary outcomes were the availability and safety of vault drainage.

**Results:** There were no differences in demographics except for uterine size (12.0 for ‘drain’ group vs 9.7 cm for ‘no drain’ group; p<.001), Uterine weight (291 vs 211 gm; p<.001), operation time (87 vs 74 min; p<.001), blood loss (200 vs 120 ml; p<.001) and hemoglobin decline (1.8 vs 1.3 g/dL; p=.001) were larger in ‘drain’ than in ‘no drain’ group. However, there were no differences in the rate of transfusion, complications, and febrile morbidity (9.5 vs. 11.2%; p=.826) between the groups, except for hospital stay (3 vs 2 days; p<.001)

**Conclusion:** Although prophylactic drainage may not be necessary in uncomplicated SPA-LAVH, vault drainage may be a feasible method for preventing postoperative morbidity in selected women after complicated SPA-LAVH.
WS3-09  Is laparo-endoscopic single-site surgery feasible compared to conventional laparoscopic surgery for adnexal tumor? A comparison of clinical and surgical outcomes

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Objective:
The aim of this study was to compare clinical and surgical outcomes between laparo-endoscopic single-site (LESS) surgery and conventional laparoscopic surgery for adnexal tumor.

Method:
Clinical medical record review was done for patients who had operations for benign adnexal tumor either by LESS surgery using Glove port® (Nelis, Seoul, Korea) between May 2010 and April or by conventional laparoscopic surgery between January 2008 and December 2009. These operations had been performed by single surgeon in single institution. Clinical and surgical outcomes were measured from both surgery groups.

Results:
129 patient cases with LESS surgery using Glove port® and 100 patient cases with conventional laparoscopic surgery were reviewed. There were no significant differences on baseline characteristics of two groups. Median operation time was shorter in LESS group using Glove port® than conventional group, which revealed statistically significant difference [44 min (range: 19 min ~ 126 min) vs 49 min (range 20 min ~ 196 min), p = 0.0007]. There were no significant differences between LESS using Glove port® group and conventional group in post-operative hospital stay, hemoglobin level change, pain score, and complication.

Conclusion:
LESS surgery showed comparable clinical and surgical outcomes to conventional laparoscopic surgery, and even took shorter operation time. Future prospective trials are warranted to define the benefit of LESS surgery for adnexal tumor treatment.

WS3-10  Application of seprafilm post da-Vinci robotic staging of endometrial cancer

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According to the literature, Robotics, laparoscopy and vaginal/laparoscopy techniques are preferable to laparotomy for suitable patients with endometrial cancer due to a shorter hospital stay and Robotics has lower conversion rate than laparoscopy. Pelvic and Para-aortic Lymph node dissection are important procedures of endometrial cancer staging. For decreasing the incidence of lymphocele formation, the opened retroperitoneum was seldom re-peritonized, we try to use the anti-adhesion barrier sepraftilm to cover the post lymph node dissection rude area with robotic arms to prevent future adhesion formation.

Material and method: 3 patients with proved endometrial cancer by D&C. The MRI revealed myometrium involvement less than 1/2 Da Vinci robotic Si surgical system with 4 arms and one 10 mm accessory port was used to operate. After major procedures of hysterectomy, bilateral salpingo-oophorectomy and bilateral pelvic and para-aortic Lymph node dissection. The commercialized available seprafilm was cut into small pieces about 3×3 cm sheet in size and rolled with 4×4 cm plastic envelope. The seprafilm roll was delivered through the 10 mm accessory port by bed-side assistant and was applied to the target rude area by console surgeon with robotic arm.

Result: The whole procedure of sepraftilm application was videotaped. All the post-operative rude pelvic area could be covered with overlapping pieces sheet of seprafilm in less than 20 minutes.

Conclusion: It is feasible to apply the sepraftilm post post Da Vinci Robotic staging of endometrial cancer. Further study will be warrant to prove its efficacy.
WS4–01 Distribution of gynecologic oncology patients underwent surgery at Dr. Cipto Mangunkusumo Hospital (2012) based on Indonesian Society of Gynecologic Oncology cancer registry


Faculty of Medicine University of Indonesia/Dr. Cipto Mangunkusumo Hospital Indonesia

Objective: To obtain the distribution of patients’ demographic characteristics, clinicopathological characteristics, surgical techniques, length of stay after surgery, and surgery’s complications.

Method: This was cross-sectional study based on INASGO cancer registry, involving all patients underwent gynecologic oncology surgery in Dr. Cipto Mangunkusumo Hospital during January–December 2012. Some data were excluded because the post-surgery topography was not cancer or the database was incomplete. The other data which were not mentioned in cancer registry were completed by reviewing medical records.

Result: From 106 patients underwent surgery, ovarian cancer cases were 55.66%, cervical cancer cases 28.30% and endometrial cancer 16.04%. Based on histopathological examinations, cervical cancer patients commonly had squamous cell carcinoma type (60%), endometrial cancer’s type were endometrioid adenocarcinoma (58.82%), and ovarian cancer were epithelial (62.71%). In general, the surgeries were performed with abdominal hysterectomy technique. Ovarian cancer had the highest mean of blood (999.49 cc) and urine loss (391.53 cc) during surgery. The median length of stay after cervical cancer surgery was 6 days, ovarian cancer 4 days, and endometrial cancer 4 days. The most complication after surgery was site of surgery’s pain.

Conclusion: In one year, we performed more than 100 gynecologic oncology surgery. The commonest cancer underwent gynecologic oncology surgery in our hospital was ovarian cancer with epithelial type. The surgeries generally had be done by abdominal hysterectomy technique. The complication after surgery was minimal so the length of stay was not too long.

Keywords: Characteristics distribution, cervical cancer, endometrial cancer, ovarian cancer, gynecological surgery, INASGO cancer registry

WS4–02 Cost-effectiveness of para-aortic lymphadenectomy before chemoradiotherapy in locally advanced cervical cancer

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Objective: To evaluate the cost-effectiveness of nodal staging surgery before chemoradiotherapy (CRT) for locally advanced cervical cancer (LACC) in the era of PET/CT.

Methods: A modified Markov model was constructed to evaluate cost-effectiveness of para-aortic staging surgery before definite chemoradiation when no uptake is recorded in para-aortic lymph nodes (PALN) on PET-CT. Survival and rates of complications were estimated based on the published literatures. Cost data was obtained from Korean National Health Insurance database. Strategies were compared using an incremental cost-effectiveness ratio (ICER). Sensitivity analyses were performed including an estimate for performance of PET/CT, postoperative complication rate, and varying survival rates according to radiation field.

Results: We compared two strategies 1) pelvic CRT for all patients or 2) nodal staging surgery, then extended-field CRT when PALN metastasis is found; otherwise pelvic CRT. Strategy 2 increases 0.07 quality-adjusted life-year (QALY) and save $738 compared to strategy 1. This model was robust unless the survival differences between patients who underwent only pelvic RT despite PALN metastasis and those who underwent nodal staging surgery followed by EFRT are less than 7.9%.

Conclusions: Nodal staging surgery before definite chemoradiation is potentially cost-effective in Korea when PET/CT shows no evidence of para-aortic lymph node metastasis. Prospective trials are warranted to transfer these results into guidelines.
WS4-03 Lymphadenectomy in endometrial carcinoma: Are the renal veins too far?
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Background: Endometrial carcinoma is the most common gynaecological malignancy in western world and its incidence is increasing in developing countries. Despite numerous studies, including RCTs, there continues to be debate regarding the optimal management of early stage endometrial cancer, including the extent of surgery and the role of adjuvant treatment.

Aim: To investigate whether complete surgical staging in women with endometrial cancer provide potential benefits that outweigh unique intra/postoperative risks associated with lymphadenectomy in Asian women.

Materials & methods: In this prospective observational study from September 2011 to August 2013, all women attending Gynaec oncology clinic at Tata Medical Center Kolkata with endometrial carcinoma were subjected to complete staging surgery. The lymph node yield, correlation to histopathology and also the complications arising from surgery are being statistically analysed using multivariate analysis.

Results: Total 55 women with were enrolled in the study. Of these 37 underwent primary staging laparotomy, 14 completion surgery and four interval debulking surgery. Majority (64%) had endometrioid adenocarcinoma. The average pelvic lymph node yield was 17 and paraaortic 12. 11 women (20%) had positive pelvic nodes and 5 (9%) had positive paraaortics. Three of the five women with positive paraaortic nodes had negative pelvic nodes. Major postoperative morbidity was encountered in 11 (20%) women of whom eight has two or more preexisting comorbidities that could have possible influence. Adjuvant therapy was differently tailored in 11 (20%) patients due to positive lymphnode status.

Conclusion: Preliminary data analysis from our study suggests that there is a definite role of complete surgical staging for patients with endometrial carcinoma even in presumed early stages.

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WS4-04 The role of omentectomy and routine peritoneal biopsy as part of a comprehensive surgical staging in apparent early-stage ovarian cancer
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Objective: The aims of this study were to evaluate the significance of routine omentectomy and random peritoneal biopsies for normal-appearing tissues as part of a comprehensive surgical staging in apparent early-stage ovarian cancer.

Methods: A retrospective study of patients with apparent early-stage epithelial ovarian cancer between 1991 and 2010 was performed. The demographics, surgical findings and pathologic variables were extracted.

Results: A total of 324 patients with stage I to IIIA were included. Among 127 patients who underwent random peritoneal biopsies, 6 patients (4.7%) were upstaged to IIb or IIIC solely based on normal-appearing pelvic peritoneal biopsies and 4 patients (3.1%) were upstaged to IIIA based on normal-appearing abdominal peritoneal biopsies. Among 256 patients who underwent omentectomy, only 7 patients (2.7%) were upstaged to IIIA based on microscopic metastasis in normal-appearing omentum. Following routine omentectomy and random peritoneal biopsy, 12 patients (3.7%) in our cohort had a change in adjuvant treatment recommendations.

Conclusions: Although the rate of upstaging solely based on routine omentectomy and random peritoneal biopsy is low, there is a small but present possibility of upstaging and altered adjuvant treatment. Considering long morbidity of these procedures, routine omentectomy and random peritoneal biopsies should be considered as a part of comprehensive surgical staging.
Extensive upper abdominal surgery for bulky stage IIIIC and IV ovarian cancer: Is it just a "belief"?

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The aim of the study is to evaluate the survival benefit of extensive upper abdominal surgery (EUAS) for stage IIIIC and IV ovarian cancer with bulky upper abdominal disease (UAD).

A single institute, observational study was conducted between 2009 and 2011 based on different surgical teams. Team A is the "believers" of EUAS, Team B not believing EUAS. The EUAS was performed in 58% (29/50), 74% (9/122) of the patients by team A, B, respectively. All patients underwent primary cytoreductive surgery with the goal of optimal outcome, neither interval cytoreduction nor palliative surgery being included. The optimal cytoreduction (≤1 cm) achieved in the pelvis, middle abdomen, and upper abdomen was 87.8%, 89.5%, and 622%, respectively. The residual disease was reviewed by in the pelvis, middle abdomen, and upper abdomen, respectively. Progression-free survival (PFS) was evaluated using Kaplan-Meier method, a difference comparison using Cox regression model.

The median follow-up was 29.6 months. The median PFS was 17.8 mos. and 12.4 mos. in EUAS group and non-EUAS group (P = 0.075, HR = 0.701, 95% CI 0.474 - 1.038), with a 2-yr survival was 87% and 67%, respectively. Residual disease in the pelvis, residual disease in the upper abdomen, and FIGO stage were the predictors of PFS by Cox regression analysis.

Extensive upper abdominal surgery lengthens the progression-free survival of ovarian cancer patients with bulky upper abdominal disease. But a well-designed randomized trial is needed to confirm the results.

Prognostic impact of diaphragmatic surgery in stage IIIB-IV epithelial ovarian cancer with peritoneal seeding

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Objective: To evaluate prognostic impact of diaphragmatic surgery (DS) in patients with advanced stage ovarian cancer

Methods: A total of consecutive 175 women who underwent primary staging operation followed by adjuvant taxane plus platinum chemotherapy for stage IIIB-IV ovarian cancer with peritoneal seeding were included. Survival and complications were compared according to DS in relation to optimal debulking status.

Results: Median age was 55 years (range, 25 to 84 years). Median follow-up period was 35 months (range, 1 to 152 months). Stage IIIB, IIIIC and IV were 9 (5.1%), 142 (81.1%) and 24 (13.7%), respectively. Optimal debulking rate (residual tumor ≤ 1 cm) was 34.9%. DS was performed in 59 (33.7%); optimally in 33 (18.9%) and completely with no residual tumor in 21 (12.0%). Optimal DS (p = 0.023), but not complete DS (p = 0.096), was associated with improved overall survival (OS) on univariate analysis. However, optimal debulking was the only independent prognostic factor for OS (HR = 0.3, 95% CI 0.1 to 0.6; p = 0.002). Optimal DS had significant association with OS neither in patients who underwent optimal debulking (p = 0.387) nor in patients who did not (p = 0.635). Despite the significant associations of postoperative complications with bowel surgery (p = 0.002), optimal (p = 0.018) and complete DS (p = 0.006), bowel surgery was the only independent risk factor of postoperative complications (HR, 2.8; 95% CI, 1.2 to 6.6; p = 0.016).

Conclusion: Optimal DS appeared to neither improve OS nor increase postoperative complications in patients who underwent primary staging operation for the treatment of stage IIIB-IV ovarian cancer with peritoneal seeding.
WS4-07 Conservative treatment for chylous ascites after operations in gynecologic malignancies

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To evaluate the incidence of postoperative chylous ascites in patients with gynecologic malignancies and the effectiveness of the conservative treatments.

From March 2011 to February 2013, we retrospectively reviewed the cases of 215 patients who underwent pelvic and/or para-aortic lymph node dissection for gynecologic malignancies in Ulsan University Hospital.

These 215 cases consisted of 85 cervical cancers, 50 endometrial cancers, 65 ovarian cancers, 15 other cancers. Among 215 gynecologic malignancies, 125 patients underwent PLND and PALND and 90 patients underwent PLND without PALND. 13 (6.01%) patients had chylous ascites postoperatively and all thirteen patients underwent PLND and PALND.

The average age of these patients was 48.5 years. The mean time interval between operation and the appearance of chylous ascites was 6.5 days (range: 4-8 days). The incidence of chylous ascites after PALND was approximately 10.4% (13/125), whereas the rate after PLND alone was 0%. The mean time to resolution was 7.17 days (range: 5-14 days).

Conservative therapeutic strategy for chylous ascites in our department might be a proper treatment option in patients with chylous ascites in gynecologic malignancies.

WS4-08 Lymph vessel sparing lymph node dissection: Technique and clinical significance

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Background:
Lymphedema after pelvic lymphadenectomy has been one of difficult problems which reduce Patient’s QOL. Many trails were taken including restriction of indication for lymphadenectomy or selection of target lymph node, but operation procedure of lymph node dissection is not fully examined. On the other hand, re-anastomosis of lymph vessels are being proven to beneficial to reduce postoperative lymphedema.

Objectives:
To reduce postoperative complication, especially lymphedema, we developed Lymph vessel (LV) sparing pelvic lymph node (LN) dissection technique and determined clinical significance

Methods:
Since 2008, we performed a newly developed LV sparing (mainly for external iliac, common iliac and inguinal lymph nodes) LN dissection for 161 cases of gynecologic malignancies (45 cervical cancers, 56 corpus cancers, 46 ovarian cancers, 14 others), which cases were without gross LNs metastasis by prooperative and intraoperative assessment. We examined dissected LN numbers, postoperative lymphedema and prognosis. Cases which underwent postoperative radiotherapy were excluded

Results:
Mean total numbers of dissected pelvic LNs were 23.5. 74 cases consulted our lymphedema clinic and 2 cases were estimated objective lymphedema (ISL stage 1 and 2). 3 cases had postoperative LN recurrence from stage N0 cases and 2 cases from N1 cases by this lymphadenectomy. These cases has other risk factors (including peritoneal disseminations and neoadjuvant chemotherapy) of LN recurrence

Conclusion:
LV sparing pelvic LN dissection may be useful for selected cases to reduce postoperative lymphedema.
**WS4–09** Fertility-sparing surgery for pediatric/adolescent patients with botryoid rhabdomyosarcoma involving the uterine cervix

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**Introduction:** Botryoid rhabdomyosarcoma of the uterine cervix, which is most often seen arising in the adolescents, is extremely rare. In the past, this tumor was best treated with pelvic exenteration and chemoradiation.

**Objective:** To report our experience on fertility-sparing treatment of pediatric botryoid rhabdomyosarcoma of the uterine cervix. To discuss proper selective criteria and type of surgery for fertility-sparing treatment with this disease.

**Methods:** We conducted a retrospective review of a prospectively maintained database of patients undergoing fertility-sparing surgery for cervical botryoid rhabdomyosarcoma at our institution from 08/2006 to 09/2012.

**Results:** We presented here ten pediatric (adolescent) patients with botryoid rhabdomyosarcoma involving the uterine cervix. Median age was 15.9 years (range, 11–25). The first patient was offered cervical conization while other nine patients underwent radical abdominal trachelectomy and pelvic lymph node biopsy. They all accepted adjuvant chemotherapy and presented with favorable outcomes at a median follow-up of 37.3 months (range, 12–86 months).

**Conclusion:** In properly selected cases of cervical botryoid rhabdomyosarcoma, conservative surgeries should attempt to preserve reproductive function without compromising in survival. Radical abdominal trachelectomy and pelvic lymph node biopsy have appeared to secure local disease control. Radical abdominal trachelectomy with skills preserving uterine arteries may allow sufficient blood supply to maintain uterine viability and achieve future fertility, and thus benefit the adolescent patients.

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**WS4–10** Abdominal radical trachelectomy (ART) for cervical malignancies: Surgical, oncological and fertility outcomes in 156 patients

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**Objective:** As abdominal radical tracheectomy is becoming a favored fertility-sparing procedure, the relative contraindication of size $\geq 2$ cm has been questioned. We report our ART experience in patients with cervical malignancies describing the surgical, oncological and fertility outcomes.

**Methods:** We conducted a retrospective review of a prospectively maintained database of patients undergoing fertility-sparing ART for cervical malignancies at our institution from 04/2004 to 04/2013.

**Results:** From 04/2004 to 04/2013, a total of 156 patients with cervical malignancies underwent laparotomy for planned ART. Eight patients needed immediate completion of radical hysterectomy due to unfavorable intraoperative findings (6 cases were IB1 stage, tumor $\geq 2$ cm). Median age was 29.4 years (range, 11–44). Histology included 18 (4) with adenocarcinoma, 122 with squamous carcinoma, 7 with adenosquamous carcinoma and 9 with cervical sarcoma. Median number of nodes evaluated was 25 (range, 12–53); Fifty patients with pathologic risk factors received adjuvant therapy. Sixty-six of 99 IB1 cases had tumor size $\geq 2$ cm and 58 (87.9%) of them preserved fertility potential. One recurrence was observed at a median follow-up of 40.4 months (range, 4.5–112 months). For various reasons, only 25 patients attempted to conceive and 6 of them succeeded. Four of them delivered by cesarean section at 37–39 weeks, one miscarriaged and one is still expecting.

**Conclusions:** Although with higher rates of conversion to hysterectomy, ART provides secured oncological outcomes for selected patients whose tumors size $\geq 2$ cm. Influenced by social, familial and physical factors, only a small fraction of patients attempt to conceive after ART. This could be the most important reason our series had unfavorable obstetric outcome.
**WS5–01** Soluble folate receptor alpha as a biomarker for epithelial ovarian cancer

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**Background and aims:** Folate receptor alpha (FRA) is a GPI anchored glycoprotein. Elevated expression of FRA has been observed in ovarian cancer. The aim of this study is to assess the soluble FRA as a biomarker for ovarian cancer.

**Methods:** We collected the serum and the tumor specimens from 230 patients who were diagnosed as pelvic masses. We investigated the soluble FRA in the serum by ELISA using FRA specific antibodies which were Morphotec Inc. developed, and the FRA expression on tumor specimens by IHC staining.

**Results:** The serum FRA in ovarian cancer was higher than that of borderline and benign tumors, and metastatic tumors. High soluble FRA is observed in advanced stage and serious tumors. We analyzed if the serum FRA would be a diagnostic marker for ovarian cancer in the patients with pelvic masses. The soluble FRA sensitivity, specificity, and PPV were 64%, 99% and 98%, respectively. We investigated the relationship between serum FRA and FRA expression. High serum FRA was observed in tumors with high FRA expression.

**Conclusion:** The soluble FRA might be a diagnostic marker for ovarian cancer. Moreover, we might also use it as a biomarker to select the patients for the FRA targeted therapies.

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**WS5–02** The role of copper transporter for platinum-resistant mechanism in ovarian cancer

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**Background:** Epithelial ovarian carcinoma is the fifth leading cause of tumor death in the female population. Platinum drugs resistance is a major cause of treatment failure. Multiple mechanisms are involved in platinum drugs resistance and the cellular entry transporter of platinum drugs, especially human copper transporter1 (hCTR1), has been focused as one of the important mechanisms. We had reported the inhibition of hCTR1 decreases the intercellular platinum concentration and the cell killing capacity by cisplatin in cisplatin-sensitive cell. The aim of this study is to clear the role of hCTR1 for cisplatin resistant cell in vitro and in vivo.

**Method:** In vitro the intercellular platinum concentration and cell killing capacity were compared between cisplatin resistant cell (2780CP) and cisplatin sensitive cell (A2780). In vivo the expression of hCTR1 in 16 ovarian carcinomas, which were initially operated at our hospital from 2006 to 2008, was evaluated using immunohistochemistry.

**Result:** 2780CP with the inhibition of hCTR1 had significantly smaller effect in the intercellular platinum concentration and the cell killing capacity than A2780 with it. The expression of hCTR1 in clear cell carcinomas and mucinous adenocarcinomas was significantly lower than serous adenocarcinomas. In serous adenocarcinoma, the expression of hCTR1 had no association with disease-free survival and no difference between before and after treatment.

**Conclusion:** This study suggested the possibility that in vitro cisplatin-resistant cell had lower expression of hCTR1 than cisplatin-sensitive cell and in vivo the reason that the response for platinum-based chemotherapy was different by histology was associated with the expression of hCTR1.
Spheroid formation is one property of stem cells—such as embryo-derived or neural stem cells—that has been used for the enrichment of cancer stem-like cells (CSCs). However, it is unclear whether CSC-derived spheroids are heterogeneous or homogeneous or whether they share common embryonic stemness properties. Understanding these features might lead to novel therapeutic approaches. We identified two types of spheroids (SR1 and SR2) from ovarian cancer cell lines and patients' specimens according to their morphology. Both types expressed stemness markers and could self-renew and initiate tumors when a low number of cells were used. Only SR1 could differentiate into multiple-lineage cell types under specific induction conditions. SR1 spheroids could differentiate to SR2 spheroids through epithelial-mesenchymal transition. Alkaline phosphatase (ALP) was highly expressed in SR1 spheroids, decreased in SR2 spheroids, and was absent in differentiated progenies in accordance with the loss of stemness properties. Patients with greater ALP expression were related to advanced clinical stages and have a higher risk of recurrence and lower survival rate. The ALP inhibitor, levamisole, disrupted the self-renewal of ovarian CSCs in vitro and tumor growth in vivo. Our results show that ovarian CSCs are heterogeneous, share different stemness properties, and can be suppressed by levamisole.

**Conclusion:** These observations suggest that CSCs derived from ovarian cancer stem cells have significant potential for therapeutic intervention.
**WS5-05** A novel IKK\(\beta\) inhibitor, IMD-0354, suppresses ovarian cancer dissemination by inhibiting VEGF production: A potential for an anti-angiogenic therapy

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The prolongation of disease-free survival in patients with advanced ovarian cancer by an anti-angiogenic therapy has been shown in several large clinical trials. However, an anti-VEGF antibody (bevacizumab) is the only option currently available, although the effect of this antibody is still limited and it is not cost-effective to use against every patient. Therefore, the development of a novel anti-angiogenic drug, especially composed of small molecule compounds, could be a powerful armament for ovarian cancer treatment. Since it is known that NF-\(\kappa\)B signaling promotes VEGF expression, we determined to identify the potential of a novel IKK\(\beta\) inhibitor, IMD-0354 (IMMDE Inc., Tokyo, Japan), as an anti-angiogenic drug.

First, we constructed tissue microarrays from 91 ovarian cancer tissues and immunostained with anti-phosphorylated IKK\(\alpha/\beta\) antibody and showed the phosphorylation of IKK\(\alpha/\beta\) is an independent prognostic factor (median overall survival 27 months, positive stainings vs 54 months, negative stainings). In \(\textit{in vitro}\) analyses, IMD-0354 robustly inhibited adhesive and invasive activities of ovarian cancer cells without impairing cell viabilities. IMD-0354 significantly suppressed VEGF production from cancer cells, which led to the inhibition of angiogenesis. In an ovarian cancer xenograft model, the treatment of IMD-0354 significantly inhibited peritoneal dissemination with a marked reduction of intratumoral blood vessel formation followed by the inhibition of VEG\(\alpha\) expression from cancer cells. IMD-0354 is a stable small molecule drug and has already administered safely to humans in other clinical trials. An anti-angiogenic therapy using this drug has the potential to be a future option to cure of ovarian cancer patients.

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**WS5-06** Fatty acid synthase expression associated with NAC1 is a potential therapeutic target in ovarian clear cell carcinomas

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**Background:** This study examined the clinical significance of NAC1 and the expression level of its potential downstream target fatty acid synthase (FASN) in ovarian clear cell carcinomas (OCCCs), and evaluated NAC1/FASN pathway as a potential therapeutic target.

**Methods:** NAC1 and FASN expression and NAC1 gene amplification were assessed in ovarian cancers by immunohistochemistry, fluorescence in situ hybridisation, and clinical data collected by a retrospective chart review. C75, a FASN inhibitor, was used to assess whether this pathway represented a therapeutic target in OCCC.

**Results:** High NAC1 expression was most frequent in clear cell tumours (40%; 24/60). NAC1 gene amplification was identified in none of the 58 OCCCs. The frequency of NAC1 gene amplification was significantly higher in the high-grade serous histology than in the clear cell histology (P<0.001). NAC1 expression was significantly correlated with FASN expression in both OCCC samples and OCCC cell lines. Either high NAC1 expression or high FASN expression significantly correlated with shorter progression-free and overall survival (P=0.002 and 0.0048). NAC1 overexpression stimulated FASN expression, and NAC1 silencing using siRNA decreased FASN expression in OCCC cell lines. Profound growth inhibition was observed in C75-treated carcinoma cells with FASN overexpression when compared with the response in carcinoma cells without FASN expression.

**Conclusion:** These findings indicate that NAC1/FASN overexpression is critical to the growth and survival of a subset of OCCC. The FASN silencing by C75-induced phenotypes depends on the expression status of the targeted cell line. Therefore, NAC1/FASN pathway-targeted therapy may benefit selected OCCC patients.
Clinical and biological analysis of PIK3CA mutation in ovarian clear cell carcinoma

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In this study, the frequency of PIK3CA mutations and the relationship of PIK3CA mutations with clinical and biological variables were investigated in ovarian clear cell carcinomas from Japanese patients. Mutational analysis of PIK3CA was performed in 56 primary ovarian clear cell carcinomas from Japanese women. The relationship of these mutations with various clinical and biological variables (phosphorylated AKT and phosphorylated mTOR expression by immunohistochemistry) was determined. To clarify the roles of PI3K/AKT activation in ovarian clear cell carcinomas harboring PIK3CA mutations, we inactivated the PI3K/AKT/mTOR pathway in ovarian carcinoma cells with LY290042, temsirolimus and NVP-BEZ235. Missense mutations of PIK3CA were found in 16 (28.6%) of 56 ovarian clear cell carcinomas, but no mutation was found in 15 ovarian high-grade serous carcinomas. PIK3CA mutations were significantly associated with a favorable overall survival of patients with ovarian clear cell carcinoma (P<.05). There was no significant association between PIK3CA mutations and phosphorylated AKT or phosphorylated mTOR immunohistochemistry. No relationship was found between PIK3CA mutation status and sensitivity to PI3K/AKT/mTOR inhibitors in ovarian clear cell carcinoma cells. No association of PIK3CA mutations was found between positive phosphorylated AKT and positive phosphorylated mTOR, which suggests that the PI3K/AKT/mTOR pathway may be activated by other molecular mechanisms. Although PIK3CA mutations were associated with a more favorable prognosis, they did not predict the sensitivity of ovarian clear cell carcinoma cells to PI3K/AKT/mTOR inhibitors.

Expression of CK-7, CA-125 and HE4 in tissue-derived cancer cells from patients with epithelial ovarian carcinoma

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Objective:
The objective of this study was to refine the technique for isolation and primary culture of tissue-derived cancer cells from patients with epithelial ovarian carcinoma (EOC) by combining the mechanical isolation and enzymatic detection protocol.

Methods:
Sixteen patients diagnosed with papillary serous adenocarcinoma of ovary were selected in ASAN Medical Center. Isolation of tumor EOC cells involves the mechanical disruption of the tumor tissue and placed directly into culture with very little manipulation. Isolated EOC cells were in culture for 14 days and cytokinin (CK) 7, CA-125 and HE-4 were detected by fluorescence microscopy. Nuclei were stained with DAPI.

Results:
We confirmed the morphological changes and growth patterns of tissue-derived EOC cells. Immunofluorescent detection of CK-7 expression in EOC cells demonstrates the epithelial origin, however their expression was not constant. CA-125 and HE-4 were expressed by all tissue-derived EOC cells. The expression pattern of CA-125 and HE-4 was different in each patient, especially some patients showed the low CA-125 and high HE4.

Conclusions:
The isolation and characterization of tissue-derived cancer cells from patients with EOC using the expression of CK-7, CA-125 and HE4 were reasonable methods. This result could contribute to further research to investigate the pathophysiology of EOC using primary cell culture.
Embryonic carcinoma (EC) is a tumor consisting of immature cells which are phenotypically similar to germ cells. It is reported that EC is usually found in testis, ovary or brain and the site of origin is ovary in the majority of cases. The average age of incidence is 15 years old and is rarely observed in adults.

There are three possibilities that are considered to be the origin of EC. 1) An embryo resulting from parthenogenesis in ovary. 2) Spermatogonial stem cells which acquired pluripotency in testis. 3) Persistent of primordial germ cells. However, it is unclear that the reasons for high crisis rate in young age and the detailed mechanisms of disease onset.

Recent progress in induced pluripotent stem cell (iPSC) technology allows us to generate pluripotent stem cells from terminally differentiated somatic cells in vitro. Recently, we have developed a “reprogrammable mouse and rat systems” carrying a single doxycycline-inducible cassette with the three reprogramming genes (Oct4, Sox2 and Klf4) in all tissues. By this system, we have reported that reprogramming efficiency of somatic cells was declined as aging.

In this study, we have developed an animal model of in vivo carcinogenesis of ovarian embryonal carcinoma by in vivo reprogramming of terminally differentiated tissue from reprogrammable animals. We found that the trends of the site of origin and the age of incidence in this animal model are similar to human ECs so that this model likely will prove useful for study of in vivo carcinogenesis of ovarian ECs.
WS6–01 Indonesian Society of Gynecologic Oncology cancer registration information system: Implementation, challenge, and future

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Objective:
This research aims to observe and report the current situation of INASGO cancer registry. The strength, weakness, opportunity, and threat of this cancer registry will be studied as an evaluation for INASGO cancer registry development.

Method:
This is a quality assurance research that used non-experimental design and did not perform data manipulation. There are three components of quality that will be evaluated: comparability, completeness, and accuracy of data in cancer registry. Information of data quality was obtained by cancer registry files, observation on the field, and interviewing cancer registry supervisor in DR. Cipto Mangunkusumo Hospital, Jakarta.

Result:
Data of this cancer registry is coded according to international standards, World Health Organization International Classification of Disease 10 for Oncology (ICD-10). Furthermore, this cancer registry supports other classification, The International Federation of Gynecology and Obstetrics (FIGO) staging system 2009. This cancer registry is lacked of validity and completeness of data, due to poor of coordination and financial support.

Conclusion:
INASGO cancer registry has good prospect to provide data information of gynecological cancer cases in policy matter or research matter. This cancer registry has strength and weak point of its implementation. However, poor coordination and limited financial support have to be anticipated for the sake of this cancer registry existence.

Keywords: cancer registry, Indonesia, gynecological cancer, INASGO

WS6–02 Evaluation of abnormal cervical histopathology in tertiary hospital

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Background and aims: Cervical cancer is the third most important cause of cancer deaths in women worldwide with over 80% of the cases occurring in developing countries. The aim is to study the abnormal cervical histopathology cases at Paropakar Maternity and Women's Hospital, Kathmandu, Nepal.

Methods: This is a retrospective observational study undertaken in Paropakar Maternity and Women's Hospital on 122 precancerous and cervical cancer cases from April 18, 2011 to August 17, 2013 where frequency table has been used for analysis.

Results: Out of 61,565 gynecological outpatient department cases, 122 (0.19%) had abnormal cervical histopathology reports. Cervical carcinoma was detected in 75 (64.47%) and precancerous cervical lesions in 47 (38.52%) cases. Majority of cervical cancers occurred in 60-69 years (20/75) followed by 40-49 years (19/75) and 50-59 years (17/75) whereas precancerous cervical lesions occurred in 40-49 years (17/47) and 50-59 years (10/47) of age groups.

On Papaincoalu smear, when low grade squamous intraepithelial lesion (3) and chronic cervicitis (13) were detected, all were precancerous lesions in histopathology report and among high grade squamous intraepithelial lesion (9), 6/9 had precancerous lesions and 3/9 had carcinoma.

When clinically carcinoma cervix (84) was suspected, the majority were carcinoma (64/84) and 20/84 were precancerous. When cancer had spread and clinical staging was done, stageIa (1) confirmed moderately differentiated squamous cell carcinoma, stageIb (4), moderately differentiated squamous cell carcinoma (3/4) and adenocarcinoma (1/4) and stageIIa (1) confirmed moderately differentiated squamous cell carcinoma.

Conclusions: Early detection and treatment of the precancerous cervical lesions by regular cervical screening should be undertaken in developing countries to prevent cervical cancer.

Keywords: cervical cancer, prevention, screening.
The distribution of high-risk human papillomavirus genotype in high-grade cervical intraepithelial neoplasia of Korean women

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Objectives: The aim of this study was to assess the distribution of HPV genotypes in high-grade cervical intraepithelial neoplasia (CIN) in Korea.

Methods: This prospective study included consecutive 1009 patients who referred for cervical biopsy due to abnormal cytology. HPV genotyping was performed on the cervical smear using PCR-based DNA chip test for 21 high-risk HPV types.

Results: Histologic diagnosis was chronic cervicitis (CC), CIN1, CIN2, CIN3, and invasive carcinoma (IC) in 332 (32.9%), 143 (14.1%), 104 (10.3%), 351 (34.7%), and 79 (7.8%) patients, respectively. High-risk HPV DNA was detected in 591 (58.7%) patients and multiple HPV types were identified in 181 (17.9%) patients. High-risk HPV DNA was detected in 415.5%, 50.3%, 63.4%, 72.3%, and 77.2% of patients with CC, CIN1, CIN2, CIN3, and IC, respectively. The leading HPV types were HPV 16 (31.0%), HPV 58 (12.9%), HPV 18 (8.9%), HPV 52 (7.4%), HPV 31 (5.6%), and HPV 33 (5.2%) for patients with high-grade lesions (CIN2/3 and IC). The overall positivity rate of HPV 16 (odds ratio [OR], 6.83; 95% confidence interval [CI], 4.54-10.29; P < 0.001), HPV 18 (OR, 2.04; 95% CI, 1.20-3.45; P = 0.008), HPV 31 (OR, 5.09; 95% CI, 2.22-11.71; P = 0.001), HPV 33 (OR, 3.19; 95% CI, 1.53-6.64; P = 0.002), HPV 52 (OR, 2.56; 95% CI, 1.46-4.50; P = 0.001), and HPV 58 (OR, 2.16; 95% CI, 1.65-4.13; P < 0.001) was significantly higher in high-grade lesions than in low-grade lesions. HPV 30, 35, and 45 were overrepresented in high-grade lesions than in low-grade lesions, but the differences were not statistically significant.

Conclusions: HPV 16, 58, 18, 52, 31, and 33 were the most common genotypes which are represented in high-grade CIN and these were significantly associated with development of high-grade CIN. The development of vaccines against these HPV types is required in Korea.

Genotype distribution of human papillomavirus among Thai females in Bangkhayaeng Sub-district, Pathum Thani province, Thailand

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Background: Despite the high incidence of cervical cancer reported in Thailand, there are limited number of large scale community-based studies on HPV prevalence and genotype distribution. Thus, the development of Thailand's population-based HPV infection baseline data can be beneficial.

Objective: To determine the prevalence and genotype distribution of HPV among Thai females living in Bangkhayaeng sub-district, Pathum Thani province, Thailand.

Materials and methods: Using permanent and current living criteria, Thai women aged 20-70 years were recruited from a single sub-district in sub-urban area of Thailand during February 4-August 3, 2013. A total of 1,777 age-eligible women were recruited into the cervical cancer screening program at Bangkhayaeng Health Promoting Hospital. HPV genotyping (Linear array, Roche, USA) and liquid-based cytology (Surepath, Becton and Beckinson, USA) were used as screening tools. 249 women were excluded, most of whom lived outside the area.

Results: Of the 1,528 eligible women, 14.1% were positive for any HPV DNA. The overall prevalence of high, probable high and low risk HPV was 6.0%, 3.6%, and 7.1% respectively. The most common high-risk HPV types detected were HPV-16 (1.4%), HPV-51 (1.3%), HPV-52 (1.2%), HPV-58 (0.7%) and HPV-18 (0.5%), respectively. The most common low-risk HPV types detected included HPV-72 (1.6%), and HPV-62 (1.4%). For the HPV associated with vaccine, HPV-6 was detected in 0.1% and no HPV-11 was found in the participants.

Conclusions: The prevalence of high-risk HPV infection in this study is quite lower than in others. Our results suggest HPV-51, 52 are predominantly observed following HPV-16, with relatively low prevalence of HPV vaccine types.
The high prevalence of high-risk HPV among negative visual inspection of acetic acid (VIA) of Indonesian women

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Objective: Persistent of High Risk HPV is known to be the major cause of cervical cancer. It is important to differentiate the genotype of HPV infection, whether it is high, intermediate or low risk. The aim of this study was to assess the prevalence of high risk HPV types among negative VIA in Indonesian women.

Methods: We processed the cervical swab from 1214 patients with negative VIA. By using mini Lipa HPV DNA test, we detected the HPV DNA and its genotype.

Results: From 1214 women with negative VIA, 48 (3.95%) samples were confirmed positive HPV DNA by using PCR and electrophoresis. However, HPV genotypes were not detected in 9 out of 48 samples by using hybridization test. These 9 samples were tested again with PCR and electrophoresis and resulted in negative HPV DNA. Among the remaining 39 samples (3.21%), we detected 19 types of HPV, consist of 13 types of High Risk HPV, 5 types of Low Risk HPV, and 1 type of unknown HPV (type X).

Conclusion: Among the negative VIA, there was 3.21% positive HPV DNA. From this percentage, the prevalence of High Risk HPV is higher than the low risk and unknown HPV. Based on this result, we can not ignore all negative VIA, because there is a slight possibility that it actually contains HPV, especially the high risk ones which are prominent to be persistent, as the major cause of cervical cancer. We support other studies that stated HPV DNA test as cervical cancer screening method.

Keywords: Negative VIA, High Risk HPV, Cervical cancer

The promise of visual inspection of acetic acid (VIA) as the standard of cervical cancer screening method in Indonesia

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Objective: Cervical cancer still become huge burden in Indonesia. The lack of effective programs for screening pre-cancerous lesion, thus we can treat adequately before becoming invasive, is one of the contributing factor. Visual inspection of the cervix after acetic acid application (VIA) is an effective method in cervical cancer screening, particularly in low resource settings. The test is very simple, cheap and can be performed by general practitioners, midwives even nurse widely. Here, we sought to evaluate the "false negative" of VIA in our study population according to DNA HPV test as the reference test or gold standard.

Methods: We processed the cervical swab from 1279 patients with negative VIA. By using PCR and electrophoresis test by mini Lipa, we detected the HPV DNA.

Results: From 1279 women with negative VIA, 65 samples were excluded because of lack of database and double in whale. And of the 1214 women with negative VIA, 39 samples were confirmed positive DNA HPV by both PCR and hybridization, which means "false negative" of VIA is 3.21%.

Conclusion: According to our study, we support VIA as a very effective method in screening phase. With minimal cost, VIA gives an excellent finding, so that it is very suitable to be used in developing countries like Indonesia to eventually decrease incidence of cervical cancer.

Keywords: VIA, negative VIA, HPV DNA, Cervical cancer, Screening
Effect of margin status on recurrence following conization in women with carcinoma in situ of cervix

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**Objectives:** Conization is being widely used for diagnosis and treatment of cervical intraepithelial neoplasia (CIN) and there is controversy as to the clinical significance of positive cone margin. We conducted this study to evaluate the clinical significance of a positive cone margin in patients with carcinoma in situ (CIS) of cervix.

**Methods:** We retrospectively analyzed the medical records of 228 patients with CIS of cervix treated by conization in 2011. We compared the pathologic and cytologic results according to the resection margin status of conization.

**Results:** Of 228 patients who were diagnosed as CIS of cervix at conization, 136 (59.6%) and 151 (66.2%) patients were diagnosed as CIS at PAP smear and punch biopsy before conization, respectively. Cold knife conization was conducted in 78.9% of patients, and the others underwent LEEP. Ninety-six patients (42.1%) had margin involvement and the others were margin free at the conization specimens. PAP smear following conization showed that CINs were significantly more in the patients with positive cone margins (p = 0.006), and 24.0% of them showed abnormal cytology. Of 28 patients who had positive cone margin and underwent following resection or hysterectomy, 20 (71.4%) showed no residual CIN lesions.

**Conclusions:** Margin status of conization did not mean the presence or absence of CIN, but rather the higher frequency of residual CIN in specimens of abnormal subsequent cytology. In view of this fact, it is suggested that the margin status of conization can be a valuable marker for clinical management of CIS of cervix.

Distribution of age, stage, and histopathology of cervical cancer: A retrospective study at Dr. Cipto Mangunkusumo Hospital, Jakarta, Indonesia, 2006–2010

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**Objective:** To review the distribution of age, stage at presentation, and histology of cervical cancer in Dr. Cipto Mangunkusumo Hospital

**Materials and Methods:** This cross sectional study involved 2297 subjects with cervical cancer who have been registered at the Cancer Registration Information System during 5 years period from January 2006 to December 2010 in Dr. Cipto Mangunkusumo Hospital. Histotype was confirmed by histopathology examination. The International Federation of Gynecology and Obstetrics (FIGO) classification was used to stage the disease.

**Result:** The mean age of cervical cancer patients was 51.42 years old (SD 9.694, range 21–85). The highest incidence was in 35–64 years (87.3%), with the peak incidence in 40–59 years (71.3%). There were 0.4% patients identified at stage I a1, 0.1% at stage I a2, 7.3% at stage IB1, 4.9% at stage IB2, 10.5% at stage IIA, 17.3% at IIB, 1.7% at stage IIA, 50.2% at stage IIB, 43% at stage IVA, 32% at stage IVB. Of the 2297 patients, 70.2% had epidermoid carcinoma, 15.1% had adenocarcinoma, 10.2% had adenosquamous, 0.6% had clear cell, 3.9% had other types.

**Conclusion:** A large proportion of cervical cancer (76.7%) presented in advanced stage (≥ stage IIb). The highest incidence (57.8%) was in the age range 45–59 years. Squamous cell carcinoma is the most frequent histopathology type (70.2%), followed by adenocarcinoma (15.1%) and adenosquamous (10.2%). A lack of effective screening programs aimed at detecting and treating precancerous conditions is a key reason for the high incidence of cervical cancer at advanced stage.

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Objectives: To investigate the mortality rate and incidence rate of cervical cancer among Japanese female.

Methods: These analyses were made based on the newly diagnosed cervical cancer cases reported to the Cancer Registry of Kanagawa Prefecture, a population of about 9,06 million for 26 years (1985–2011). Patients were divided into the three groups based on age groups: 20–29, 30–49, and 50 and over. We compared the chronological changes in the age-specific crude mortality rate and incidence rate among the age groups.

Conclusions: A total of 15,248 patients with invasive cervical cancer (10,699 cases) and carcinoma in situ (4,549 cases) were diagnosed in that period. The age-specific crude mortality rates among 30–49 age group did not indicate significant changes, from 2.3 (1990) to 2.8 (2011) per 100,000, whereas among 50 and over age group the mortality rate decreased from 1.02 to 0.7 (p < 0.05). Although the death cases among 20–29 age group were too small to analyze the crude mortality rate in each year, they showed the increasing trend during 26 years (p < 0.05). The age-specific incidence rates of cervical cancer (including invasive cancer and carcinoma in situ) increased from 2.8 (1990) to 11.2 (2009) among 20–29 age group (p < 0.05), and from 20.3 to 26.8 among 30–49 age group respectively (p < 0.05), whereas among 50 and over age group it decreased from 10.2 to 6.1 (p < 0.05).

WS6–10 Estimation of the potential impact of HPV vaccination on cervical cancer cases and deaths in Japan irrespective of HPV type

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Background: Human papillomavirus (HPV) vaccination offers the potential for primary prevention of HPV-related pre-cancers and cancers as demonstrated in clinical trials. Most recent clinical trial results have not been applied to the Japanese situation to date.

Methods: Potential decline in CC cases and deaths when vaccinating young girls naïve to HPV with the AS04-adjuvanted HPV-16/18 vaccine, was estimated at steady-state (vaccine coverage: 0–100%) based on clinical trial and Japan-specific incidence data. Data on vaccine efficacy were taken from the end of study PATRICIA trial of the AS04-adjuvanted HPV-16/18 vaccine. The numbers of cases and deaths due to HPV-16/18 were estimated and compared with those due to any HPV type to estimate the additional cases prevented. Cost-offsets due to reductions in CC treatment were estimated using recently published Japanese unit cost data. CC cases (9,794) and deaths (2,486) were retrieved from the Japanese Statistical Office (data 2008) and HPV-16/18 distribution in CC (59.5%) reported by Matsumoto 2013 (J.Obstet.Gynaecol.Res. 39 (1)) was applied.

Results: At 70% vaccination coverage HPV vaccination could prevent 1,618 CC deaths irrespective of HPV type vs. 1,035 CC deaths related to HPV-16/18 only, and 6,376 CC cases vs. 4,079 and save associated CC treatment cost of ¥10,867,088,624 vs. ¥6,952,141,546 (values 2011), respectively, an improvement of 56%.

Conclusion: HPV vaccination could strongly reduce the CC burden in Japan, 56% of this disease burden reduction may be related to protection against non HPV-16/18 related types.
WS7-01 Recurrence-free survival stage IB1-IIA2 intermediate risk group (based on Kartu Delgado) cervical carcinoma after radical surgery and adjuvant radiotherapy

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**Background:** Traditionally, the risk groups are divided into high risk and intermediate risk groups. Intermediate risk group use single prognostic factor such as bulky tumor, lymphovascular space invasion (LVI), adenocarcinoma histotype, and poor differentiation as an indication to give adjuvant radiotherapy (ART). If there are no prognostic factors mention above, patients are observed. This is our first experience to determine if the outcome will be affected when the indication for RT base on Kartu Delgado (simple form of Gynecologic Oncology Group (GOG) scoring system).

**Aim:** To evaluate the benefits of ART based on Kartu Delgado aimed at women with early stage cervical cancer after surgery.

**Method:** Fifty patients were eligible for this study. Twenty one patients from 2011-2012 were given RT following surgery based on their score as follows: score < 120, observation; score > 120, pelvic RT. Their score and recurrence were compared with 29 patients who were treated at 2009-2010 (base on single prognostic factor).

**Results:** Eighteen recurrences occur during this study. Thirteen patients came from 2009-2010 and five patients from 2011-2012. Most recurrences (50%) occurred from patients in 2009-2010 with score > 120 but did not prescribed for ART. 2 years RFS for score < 120 with observation was 76.23% while for score > 120 with ART was 64.29%.

**Conclusion:** Adjuvant radiotherapy given based on Kartu Delgado reduced the number of recurrences in women with stage IA II cervical cancer after treated by surgery.

**Key word:** Cervical carcinoma, intermediate risk, Kartu Delgado

WS7-02 Concurrent chemoradiotherapy for locally advanced uterine cervical cancer using Nedaplatin (KGROG 0501): Final results

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**Purpose:** We conducted phase II trial of concurrent chemoradiotherapy for locally advanced uterine cervical cancer using nedaplatin. Three year follow up has finished in the last patients. We report the final results.

**Patients and Methods:** Registered uterine cervical cancer patients met following criteria. 1 or 2, in addition to 3-5: 1) having pelvic LN swelling or primary tumor of the maximum diameter > 40mm in stage Ib and II patients, 2) Stage III or IVa, 3) not having PALN swelling (accessed by the short axis diameter > 10mm on CT). 4) PS 0-2.5) 20-75 years old. Radiation therapy started within 2 weeks after the registration EBRT (whole pelvis): 1.8-2.0Gy/fr, 5fr/W, total dose 50-52Gy (central shielding after 30-32 Gy) + HDR-ICBT: Point A: 5-6Gy, once a week, 5-6Gy, total Point A dose: 24Gy·30Gy/4-6 times after EBRT totaling 19.8-32Gy. Chemotherapy started within 2 weeks after the registration: nedaplatin 30mg/m²/week x 5 times.

**Results:** Between June, 2005 and May, 2010, 45 patients had been registered. Median age was 62 years (range 31-75 years). As for histopathology, 36 patients had squamous cell carcinoma, 9 had adenocarcinoma. Median follow-up time was 39 months (range: 2-87 months). 3 year overall survival rate was 72.3% (95%CI: 56.18-84.18), 3 year disease control rate was 75.8% (95%CI: 58.60-86.64). 3 year progression free survival rate was 68.9% (95%CI: 51.18-80.89). According to RTOG/EORTC, G3 or greater late toxicity was recognized in 3.

**Conclusions:** Concurrent chemoradiotherapy for locally advanced uterine cervical cancer using nedaplatin is safe and promising.
WS7-03  In room CT-guided adaptive brachytherapy for cervical cancer at Gunma University

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Results:
There were 25 patients with histologically proven cervical cancer who received RT alone or CCRT at Gunma University. The median age was 61 years old. Weekly cisplatin (40 mg/m²) was given concomitantly with RT for locally advanced disease. The brachytherapy, in room CT was taken in every session and individualized 3D treatment planning was implemented. The D90 dose of high risk CTV was aimed at 60 GyEQD2, and D2cc of the rectum was limited below 75 GyEQD2.

Conclusions:
By using in room CT-guided adaptive brachytherapy, excellent cervical tumor control was obtained regardless of the tumor size without severe late complications. Further evaluation will be necessary in multi-institutional setting.

WS7-04  Radical hysterectomy versus concurrent chemoradiotherapy (CCRT) for stage IIIB squamous cell carcinoma of the uterine cervix

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Shikoku Cancer Center, Japan

Purpose: For stage IIIB cervical cancer, concurrent chemoradiotherapy (CCRT) is a standard of management in many countries. Even in Japan where the standard procedure of radical hysterectomy (RH) was established based on Okabayashi's RH which enabled complete removal of tumors with parametral invasion, currently up to half of patients with stage IIIB disease undergo radiotherapy. In developing countries, however, patients' access for radiotherapy is very limited. The aim of this study was to clarify an advantage of RH for stage IIIB squamous cell carcinomas compared with CCRT.

Patients: Cases of stage IIIB squamous cell carcinoma of the uterine cervix initially treated at Shikoku Cancer Center from 2004-2010, were retrieved from the tumor registry. Twenty patients underwent RH, while sixteen patients CCRT. The primary outcome was evaluated by 2-year locoregional control (LRC) and 3-year overall survival (OS) rates.

Results: The median age of the patients treated with RH and CCRT were 53.5 years and 53.5 months, respectively. The median tumor volume of RH and CCRT group was 42.5 and 48.5 mm (P = 0.62), and the lymph node enlargement was observed in 40% (8/20) and 56.3% (9/16) (P = 0.53), respectively. 2-year LRC rates of patients treated by RH and RT were 90.0% and 87.5% (P = 0.50), and 3-year OS 95.0% and 93.8% (P = 0.50), respectively.

Conclusions: Okabayashi's RH is comparative to CCRT in cases of stage IIIB squamous cell carcinoma. Considering an individual case and available medical resources, gynecologists may choose surgery instead of radiotherapy, and therefore an acquisition of the Okabayashi's method is recommended.
**WS7-06** Prognosis of adenosquamous carcinoma compared to adenocarcinoma in uterine cervical cancer: A systematic review and meta-analysis of observational studies

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**Objective:**
The aim of this study was to compare the survival outcomes of adenosquamous carcinoma and adenocarcinoma of the cervix.

**Methods:**
We searched PubMed and Embase for observational studies that compared the outcomes of two histological subtypes. Hazard ratios (HRs) with 95% confidence intervals (CIs) were calculated with a fixed-effects model.

**Results:**
A total of 17 studies were included in the analyses. Patients with adenosquamous carcinoma were associated significantly with poorer overall survival (death HR, 1.27; 95% CI, 1.12-1.43; P = 0%) and recurrence-free survival (recurrence HR, 1.43; 95% CI, 1.05-1.95; P = 19.4%) than those with adenocarcinoma. For clinical stages I and II in particular, adenosquamous carcinoma predicted significantly poorer outcomes compared to adenocarcinoma (death HR, 1.41; 95% CI, 1.17-1.70; P = 0%).

**Conclusions:**
This meta-analysis suggests that adenosquamous carcinoma may have poorer outcomes compared to adenocarcinoma of the cervix.
**WS7-07**

A comparison of survival outcome of adenosquamous carcinoma and adenocarcinoma in cervical cancer after surgery in stage I, II

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**Objectives:** The aim of this study was to evaluate the difference in survival between adenosquamous carcinoma and adenosquamous carcinoma in cervical cancer (FIGO stage IA1-IB) after surgery with or without adjuvant therapy.

**Methods:** This was a retrospective matched cohort study. Eligible patients for this study with adenosquamous carcinoma and adenosquamous carcinoma between 1989 and 2012 at Asan Medical Center were identified and investigated.

**Results:** In total, 307 patients were identified. Among them, 230 were adenocarcinoma and 68 were adenosquamous carcinoma. There were no significant differences between the two groups in terms of patient's age, FIGO stage, proportion of type of hysterectomy, and type of adjuvant treatment (P = 0.242, 0.536, 0.484, and 0.210, respectively). Also, there were no differences in terms of lymph node metastasis, tumor size, parametrial and vaginal invasion, depth of cervical invasion, and lymphovascular space invasion between both groups (P = 0.157, 0.758, 1.000, 0.620, 0.498, and 0.077, respectively).

There were no differences between both groups in terms of recurrence rate, death, DFS, and OS (16.2% vs. 21.1%, 11.9% vs. 18.3%, 83.8% vs. 78.8%, and 88.1% vs. 81.6%; P = 0.371, 0.167, 0.565, and 0.397, respectively).

**Conclusions:** Adenocarcinoma and adenosquamous carcinoma in early stage cervical cancer showed similar survival outcomes.

**WS7-08**

Clinical evaluation of early (stage I-II) cervical adenocarcinoma and adenosquamous cell carcinoma treated by radical surgery

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**Background:** In 2000, Peters et al. reported that the addition of concurrent cisplatin-based chemotherapy to radiation therapy significantly improves the progression-free survival (PFS) and overall survival (OS) of high-risk patients with early carcinoma of the cervix after radical hysterectomy and pelvic lymphadenectomy.

**Aims:** Our aim was to evaluate adjuvant therapy for SCC and non-SCC after radical surgery.

**Methods:** Between January 1976 and December 2011, 362 patients (SCC: 251, non-SCC: 111) in stage I-II underwent radical hysterectomy and pelvic lymphadenectomy for stage I-II at Tokai University. We analyzed prognostic factors based on the histological type and adjuvant therapy.

**Results:** The following prognostic factors were identified: lymph node metastasis (P = 0.001), tumor size >30 mm (P = 0.001), operation technique (before March 2006: radical hysterectomy with pelvic lymph node dissection, after April 2006: para-aortic lymph node dissection if radical hysterectomy with pelvic lymph node metastasis positive) (P = 0.021), and surgical stage (P = 0.029). We further analyzed patients with stage II or tumor size >30 mm or lymph node metastasis. The following prognostic factors were identified by this analysis lymph node metastasis (P = 0.014), operation technique (P = 0.024), tumor size >30 mm (P = 0.027), and surgical stage (P = 0.033). In non-SCC patients with stage II or tumor size >30 mm or lymph node metastasis, operation and operation plus chemotherapy were associated with OS (P = 0.011).

**Conclusions:** We suggest that the combination of adjuvant chemotherapy and radical hysterectomy with pelvic and para-aortic lymph node dissection is very useful for operable patients with early non-SCC.
Primary surgery for early-stage small cell carcinoma of the uterine cervix? A Taiwanese Gynecologic Oncology Group study

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Objective: Small cell carcinoma of the uterine cervix (SCCC) is a rare malignancy with poor prognosis. Stage I-II SCCC is usually treated with primary surgery rather than primary radiotherapy. We aimed to assess the impact of these treatment modalities on clinical outcomes through a large-scale retrospective study.

Methods: We reviewed the clinico-pathological data of 144 patients with FIGO stage I-II SCCC treated at 11 main hospitals during 1987-2009. Most patients received chemotherapy as part of the primary treatment.

Results: The patients who had primary surgery showed a higher rate of loco-regional failure than those who received primary radiotherapy (23% v 3%; P = 0.09). In stage IB2-II, the 5-year failure-free survival of the patients receiving primary surgery was 28% compared to 54% of the patients undergoing primary radiotherapy (P = 0.04). The 5-year overall survival (OS) of 13 surgically treated patients with a primary tumor size ≤2 cm and absence of lymphovascular space invasion (LVSIs) was 89%; however, two of the four patients who did not have adjuvant chemotherapy recurred. Among the other 131 patients, fourteen who received primary radiotherapy with at least 5 cycles of platinum-based chemotherapy (RT-P5+) had a better 5-year OS than the remaining 117 (78% v 45%; P = 0.08).

Conclusion: For most patients with stage I-II SCCC, primary RT-P5+ resulted in a significantly better survival. Primary surgery should be reserved for patients with a primary tumor size ≤2 cm and absence of LVSIs.

Quality of life in patients with advanced cervical cancer in northern Nigeria

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Background: Cancer of the cervix is the commonest female genital tract malignancy in Nigeria. Presentation is in advanced stages due to lack of National cancer screening programme, ignorance, poverty and poor utilization of the few available services. At a tertiary referral centre, death of resources, with high cancer burden results in many not only succumbing to their disease but also dying in pain and indignity.

Aim: To determine the Quality of life among patients presenting with advanced cancer of the cervix.

Methodology: Design: Cross sectional descriptive study

Subjects: Consecutive consenting patients presenting with histologically confirmed advanced cervical cancer, defined as FIGO stages IIIB IIIA, IIIB, IVA, IVB were recruited. The EORTC QLQ-C30 questionnaire was used to assess their quality of life. Data was analyzed using statistical package for social sciences (SPSS).

Results: All domains of quality of life were severely affected in patients with advanced cervical cancer. Physical functions were affected in 69.9%, role functions in 57.7%, cognitive in up to 36.5%, emotional in 60.8%, social in 46.6% and financial aspects by 76.2%. Sexual domain was affected 75% of patients. Severe reduction in various economic facets was reported by up to 70.9% of the patients, with 68.7% reporting a reduction in income. In social domain, less than 40% of family members or friends were reported to have offered financial support. There was no support from any Governmental or Non-Governmental Organization.

Conclusion: Severe disruptions in quality of life domains occur in patients with advanced cancer of the cervix.
**WS8–01** Combined DNA methylation analysis in HPV-infected cervical cells

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**Objective:** DNA methylation of tumor suppressor genes can serve as a mechanism of carcinogenesis. We assessed the methylation patterns of 4 genes in a full spectrum of cervical lesion.

**Methods:** A retrospective study was conducted on 206 patients including NIL (n = 27), ASCUS (n = 39), LSIL (n = 44), HSIL (n = 48), and cervical cancer (n = 48) in liquid-based Pap tests and all patients were HPV-positive. DNA was extracted from cervical scrapings. Methylation levels of genes, such as adenylate cyclase activating polypeptide 1 (ADCYAP1), paired box gene 1 (PAX1), cell adhesion molecule 1 (CADM1) and T lymphocyte maturation associated protein (MAL) were measured by using pyrosequencing. Cutoff values of the percentage of methylation reference (PMR) for different cervical lesions were determined to test the sensitivity and specificity and to generate receiver operating characteristic (ROC) curves.

**Results:** HPV 16 and 18 had higher incidence in the category of HSIL and carcinoma than less severe cytology category. ADCYAP1 and PAX genes were significantly increased in HSIL and cancer compared to NILM, ASC-US and LSIL and MAX & CADM1 genes were significantly increased in cancer compared to other cytology. ASC-US showed variable level. According to ROC curve analysis, the sensitivity and specificity for detecting cervical cancer were 89.6% and 92.3% for ADCYAP1, 77.1% and 100% for PAX1, 58.3% and 96.2% for CADM1, and 70.8% and 96.2% for MAL.

**Conclusions:** This study suggests that DNA methylation could be related with cervical cancer development and useful marker for early detection of cervical cancer.

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**WS8–02** Identification of KLF17 as a novel epithelial to mesenchymal transition inducer via direct activation of TWIST1 in endometrioid endometrial cancer

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Krüppel-like factor 17 (KLF17), a member of the KLF transcription factor family, has been shown to inhibit the epithelial-mesenchymal transition (EMT) and tumor growth. However, the expression, cellular function and mechanism of KLF17 in endometrioid endometrial cancer (EEC; a dominant type of endometrial cancer) remains elusive. Here, we report that among the KLF family members, KLF17 was consistently upregulated in EEC cell lines compared with immortalized endometrial epithelial cells. Overexpression of KLF17 in EEC cell lines induced EMT and promoted cell invasion and drug resistance, resulting in increased expression of TWIST1. In contrast, KLF17 suppression reversed EMT, diminished cell invasion, restored drug sensitivity and suppressed TWIST1 expression. Luciferase assays, site-directed mutagenesis and transcription factor DNA binding analysis demonstrated that KLF17 transactivates TWIST1 expression by directly binding to the TWIST1 promoter. Knockdown of TWIST1 prevented KLF17-induced EMT. Consistent with these results, both KLF17 and TWIST1 levels were found to be elevated in EECs compared to normal tissues. KLF17 expression positively correlated with tumor grade, but inversely correlated with estrogen and progesterone receptor expression. Thus, KLF17 may have an oncogenic role during EEC progression via initiating EMT through the regulation of TWIST1.
**WS8–03 Sirtuin1 (SIRT1) inhibitor suppresses tumor growth of endometrial carcinoma cell in nude mice**

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**Background:** SIRT1, known as a longevity gene, is induced by caloric restriction or stresses, and suppresses the functions of several proteins by deacetylation. We previously reported SIRT1 was overexpressed in endometrial carcinoma (EMC) and might contribute to cell survival under cisplatin exposure via deacetylation of p53. In this study, we examined the functions of SIRT1 and the anti-cancer effects of SIRT1 inhibitor (EX527), using EMC xenografted mice.

**Methods:** Two EMC cell lines, HHUA (low SIRT1 expression) and HEC1B (high SIRT1 expression) were used. HHUA-S and HHUA-C were established by transfection of SIRT1-expressing vector and empty vector, respectively. The cell viability was examined using a WST-1 assay. HHUA-S, HHUA-C or HEC1B were xenografted in nude mice, followed by the administration of cisplatin or EX527 for 4 weeks. The immunohistochemical expression of p53 and cleaved-caspase3 in the xenografted tumors were examined.

**Results:** In HHUA-S, SIRT1 expression increased proliferation (p<0.05) and decreased cisplatin sensitivity (p<0.05). These effects of HHUA-S were cancelled by EX527. In nude mice, HHUA-S formed larger (p=0.018) and more cisplatin-resistant tumors than HHUA-C. The number of apoptotic cells in HHUA-S tumor was less than that of HHUA-C. In HEC1B cell, EX527 significantly suppressed tumor growth (30% reduced, p<0.05) and increased the expression of p53 and cleaved-caspase3. No adverse effect of EX527 was observed in mice.

**Conclusions:** These findings suggest SIRT1 enhances tumor growth and cisplatin resistance, and these effects might be cancelled by SIRT1 inhibitor. The SIRT1 inhibitor might be a novel potential anti-cancer agent for EMC.

**WS8–04 Lipocalin2 accelerates tumor growth and functions as a novel oncogene in endometrial carcinoma cell**

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**Background:** We found lipocalin2 (LCN2) as an up-regulated gene in endometrial carcinoma (EMC) using laser-captured microdissection and microarray analysis. LCN2 is a multifunctional protein involved in iron-transport. We previously reported that the overexpression of LCN2 and its receptor, SLC22A17, in EMC was associated with poor outcome, and LCN2 enhanced the migration, invasion and survival of EMC cells. In this study, we focused on the oncogenic functions of LCN2.

**Methods:** HHUA is the EMC cell line overexpressing both LCN2 and SLC22A17. The LCN2 silenced HHUA cell (HHUASH) was established using a shRNA method, and used in the following assays. The effect of LCN2 on anchorage-independent growth was analyzed using a soft agar colony formation assay with recombinant LCN2 (rLCN2) treatment. The effect of LCN2 on tumor growth was evaluated using the EMC xenograft in nude mice. The effect of LCN2 on transforming ability of NIH3T3 was examined by the transfection of lentiviral vector overexpressing LCN2.

**Results:** The number of anchorage-independent colonies was significantly reduced in HHUASH compared with control HHUA (66% reduced, p<0.05). However, the number of HHUASH colonies was increased by the addition of rLCN2 (32% increased, p<0.05). The growth of xenografted tumor was significantly suppressed in HHUASH compared with control HHUA (84% reduced, p<0.05). The transforming ability of NIH3T3 was enhanced by the transfection of LCN2 gene.

**Conclusions:** These results suggest that LCN2 has important roles on tumorigenesis and growth of EMC. LCN2 may function as a novel oncogene in EMC.
WS8-05 Epithelial-mesenchymal-transition (EMT) in endometrial cancer

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Objectives: Epithelial-mesenchymal transition (EMT) is recently identified as an important step in the invasion and metastasis of cancer. However, no study has so far clarified the effect of EMT in endometrial cancer. Therefore, we investigated the clinical relevance of the EMT status. Moreover, we focused on the relationship between EMT status and CD24 which has been considered as a prognostic marker.

Methods: We performed immunohistochemical analysis using tissue microarray samples of 354 primary tumors of endometrial carcinomas, and investigated the relationship among EMT related protein (E-cadherin, Vimentin, Snail, Slug, TWIST) expression, clinicopathologic features and outcomes. Using cell lines of endometrial cancer, we performed FACS to analyze a population of CD24. Then we separated into two groups (CD24+/CD24-) with MACS method, and compared the increasing time and drug resistance, the expression of mRNA associated with EMT status and stemness.

Results: In immunohistochemical analysis, EMT status is significantly associated with clinicopathologic features and patient survival (P<0.01). Moreover, CD24 expression is strongly associated with EMT status. CD24 expression is mainly observed in Type 2 cell lines. CD24 positive cells have lower increasing speed and resistance to CDDP compared with CD24 negative cells. Snail, Slug, Vimentin and stemness gene expression are higher, and E-cadherin, cyclin D expression are lower in CD24 positive cells than those of CD24 negative cells.

Conclusions: These data indicate that EMT status has a prognostic impact in endometrial cancer, and CD24 expression is closely associated with malignant potential and EMT status.

WS8-06 Tumor-derived G-CSF plays a central role in progression of cervical cancer displaying tumor related leukocytosis

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Objectives: The aim of this study is to investigate the prognostic significance of and the mechanism responsible for the tumor related leukocytosis (TRL) in cervical cancer.

Methods: 1) The clinical data from 536 patients treated for uterine cervical cancer at Osaka University hospital were reviewed. Cox proportional hazards regression model was used to examine the prognostic significance of TRL (WBC ≥ 10,000/μl) as well as the G-CSF expression in tumor. 2) The effect of the inoculation of G-CSF-producing cervical cancer cells on WBC counts and Myeloid Derived Suppressor Cells (MDSC, CD11b+Gr1+ cells) population in mice were examined by flow cytometry. 3) With a purpose to develop novel treatments, the effect of splenectomy or the depletion of MDSC by anti-Gr1 neutralizing antibody were examined in mice bearing G-CSF-producing cervical cancer.

Results: 1) TRL and strong G-CSF expression in tumor were associated with significantly shorter survival (P<0.001). Tumors from patients with TRL showed significantly stronger immunoreactivity for G-CSF than those from patients without TRL. 2) Mice bearing G-CSF-producing cervical cancer showed marked leukocytosis and increased MDSC in their tumors, spleen, blood, and bone marrow. G-CSF-producing cervical cancer grew significantly faster than non-G-CSF-producing cervical cancer, which resulted in significantly shorter survival. 3) Removal of spleen or treatment with anti-Gr1 neutralizing antibody decreased MDSCs in mice, and inhibited tumor progression of G-CSF-producing cervical cancer.

Conclusion: TRL and tumor G-CSF expression are independent prognostic factors in cervical cancer patients. Tumor-derived G-CSF-induced MDSC plays a central role in the progression of cervical cancer displaying TRL.
WS8-07  Triage of ASC-H and AGC using DNA methylation biomarkers: A Taiwanese Gynecologic Oncology Group (TGOG) study

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Background and Aims: Cervical conization was recommended when encountering major cervical cytopathologic abnormality with unsatisfactory colposcopy, which were related to cervical incompetence, with resultant preterm delivery. Our aims is to validate methylation biomarker of SOX1, PAX1, ZNF582 and PTTPRR in triage of atypical squamous cell cannot exclude high grade squamous intraepithelial lesions (ASC-H) and atypical glandular cells (AGC) of Pap smear.

Methods: We conducted a multicenter study in 11 medical centers in Taiwan from November 2011 to June 2013. Total 108 samples with 53 ASC-H and 55 AGC were included. Multiplex quantitative methylation-specific polymerase chain reaction (MSPCR) was performed. Sensitivity, specificity and accuracy were calculated for detecting CIN3 lesions.

Results: In 53 ASC-H patients, combined methylated (++) SOX1*, PAX1*, ZNF582* and PTTPRR*, the sensitivity and specificity for detecting CIN3 lesions were 90, 39.5 respectively. In 55 AGC patients, the sensitivity for methylated (++) SOX1*, PAX1*, ZNF582* and PTTPRR* for detecting CIN3* lesions were 100, 833, 667, 667, and specificity were 65.3, 77.6, 89.8 and 75.5, respectively.

Conclusions: Methylated (++) SOX1* is an ideal adjunct biomarker for detection of CIN3 lesions in AGC. If after a comprehensive examination, women with AGC and positive SOX1* have no identifiable disease, a cervical conization may be considered.

Key Words: DNA Methylation, ASC-H, AGC, Multiplex quantitative MSPCR.

WS8-08  Methylation of ZNF582 gene: A marker for triage of LSIL. Pap smear: A Taiwanese Gynecologic Oncology Group study


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Background: Our previous work revealed the host genes ZNF582, PTTPRR, PAX1, and SOX1 to be highly methylated in cervical intraepithelial neoplasias grade 3 or worse (CIN 3*). In this study we attempted to use a standardized testing assay to evaluate the clinical efficacy of these biomarkers in triage of cytopathological diagnoses of low-grade squamous intraepithelial lesion (LSIL) and compare its performance with human papillomavirus (HPV) testing.

Material and methods: This 2-year multicenter prospective study examined a population of 230 women from 11 medical centers diagnosed with LSIL on cervical cytology. Cervical scrapings were obtained prior to colposcopy-directed biopsy for quantitative methylation analysis of ZNF582, PTTPRR, PAX1, and SOX1 by MethyLight and HPV testing by HC2 (Digene). Using logistic regression and receiver operating characteristic curves analyses, the ability of methylated genes or HPV to predict CIN3+ were assessed.

Results: Fifteen (6.5%) of 230 with cytological diagnosis of LSIL were confirmed to have CIN3+ after colposcopy-directed biopsy. Among the 4 methylated genes, ZNF582 was found to be the best biomarker for detecting CIN3+. The sensitivities for methylated ZNF582 and HPV testing were 73% and 80%, specificities were 71% and 28%, respectively. The odds ratio for predicting CIN3+ of using methylated ZNF582 in cervical swabs was 6.8 (95% CI 21–221). The results were much better than of using HPV testing (OR = 1.6, 95% CI = 0.4–5.8).

Conclusion: We show the first time that ZNF582 methylation analysis in cervical swabs may be a promising choice in the positive triage of cytopathological diagnoses of LSIL.
Potential role of LMP2 as negative regulator defines new targets for uterine leiomyosarcoma therapy

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Background: Although the majority of smooth muscle neoplasms found in the uterus are benign, uterine leiomyosarcoma (LMS) is extremely malignant, with high rates of recurrence and metastasis. We earlier reported that mice with a homozygous deficiency for LMP2/β1i, an interferon (IFN)-γ inducible factor, spontaneously develop uterine LMS. The IFN-γ pathway is important for control of tumor growth and invasion and has been implicated in several malignant tumors.

Aim: It is necessary to analyze risk factors associated with human uterine LMS in order to establish a diagnostic biomarker and a clinical treatment method.

Methods and Results: In this study, experiments with mouse uterine tissues and human clinical materials revealed a defective LMP2/β1i expression in human uterine LMS that was traced to the IFN-γ pathway and the specific effect of JAK-1 somatic mutations on the LMP2/β1i transcriptional activation. Furthermore, analysis of a human uterine LMS cell line and human clinical materials clarified the biological significance of LMP2/β1i in malignant myometrium transformation and tumor senescence, thus implicating LMP2/β1i as an anti-tumorigenic candidate.

Conclusion: LMP2/β1i differential expression may be a potential diagnostic biomarker for human uterine mesenchymal tumors, especially uterine LMS. This role of LMP2/β1i as a tumor suppressor may lead to new therapeutic targets in human uterine LMS.

The comparison of expression of cyclin D1 and retinoblastoma mutant protein in hydatidiform mole and in normal placenta

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Objective: To analyze the expression of cyclin D1 and mutant retinoblastoma in hydatidiform mole, thus understanding the pathogenesis of hydatidiform mole pregnancy.

Method: Research specimens were taken from hydatidiform mole trophoblastic tissue in Dr. Hasan Sadikin Hospital and satellite hospital. Specimen prepared as paraffin block and were stained with immunohistochemistry. Significance of the result was tested through the Mann-Whitney test, Fisher exact, and McNemar square test.

Result: Significant difference was found in the expression of cyclin D1 on hydatidiform mole tissue compare with normal placental tissue (p<0.001). There was significant difference in the expression of mutant retinoblastoma in the two groups (p<0.05). There were significant differences between the domination of cyclin D1 and mutant retinoblastoma in hydatidiform mole.

Conclusion: The expression of retinoblastoma was different from normal histopathologically and it was suspected as mutant retinoblastoma. The expression of cyclin D1 as well as mutant retinoblastoma in hydatidiform mole trophoblast tissue was increased, with mutant retinoblastoma being more dominant.
Abstracts

Poster
Carcinoma of vulva: Local experience in last 2-years in Northern India Hospital
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Vulvar cancer constitutes 1-2% of all female cancers and 4% of all Gynaecologic cancers. Most common is squamous cell seen in 90%.

Labia majora is the commonest site (50%). CT/MRI may be done prior to surgery for staging. Early stage disease has good prognosis with 5 yr survival rates of 60-70%.

Surgery remains the mainstay of treatment. Three-incision approach and now selective procedures of hemivulvectomy and local wide excision are sufficient for management of local disease on an individualized basis.

The authors present experience of 11 patients of Carcinoma vulva in 2yrs from July 2010 to June 2012. Age group varied from 55-80yrs. The site of lesion was labia majora in 4 cases, labia minora 2, clitoris in 5. In all patients histopathology was Squamous cell Carcinoma. 5 patients underwent Radical vulvectomy. In 2 patients Radical vulvectomy with distal uretherectomy was done. 3 patients underwent hemivulvectomy and one had local wide excision. Bilateral inguinalfemoral lymphadenectomy was done in 10 patients. In one patient unilateral lymphadenectomy was done.

3 patients received adjuvant radiotherapy. In follow up which ranges from 6 months-21/2yrs. Overall survival 81.45% (9 patients. Disease free survival is 72.4% (8 patients). One patient had local recurrence. 2 patients died of metastasis. In early stage disease, results of surgery are gratifying. In selected cases, limited surgery can be considered.

Primary malignant melanoma of the cervix: A case report
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Malignant melanoma usually occurs in the skin and the mucous membranes. The disease appears to have racial predilection such than Asians and Blacks have lower rates of incidence compared to Whites. For Filipinos, the incidence rate of melanoma is 0.8 in men and 0.6 in women (per 100,000). Primary malignant melanoma of the genital tract is a rare neoplasm comprising less than 2% of all malignant melanoma. And only about 3-9% of these genital malignant melanomas occur primarily in the cervix. Worldwide, there are about 78 cases of primary malignant melanoma of the cervix reported in literature. This paper describes a case report of a patient initially diagnosed with squamous cell carcinoma of the cervix who underwent radical hysterectomy with bilateral salpingoophorectomy and bilateral pelvic lymph node dissection. Final histopathologic report and immunohistochemistry staining revealed malignant melanoma. The patient then underwent adjuvant chemotherapy with Dacarzine. Because of the rarity of cases, ideal management of this condition is not yet defined. Treatment is primarily surgical. The role of adjuvant treatment is still controversial.
Malignant melanoma of the vulva

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Malignant melanoma of the vulva is the second most common type of vulvar cancer, representing 10% of all vulvar neoplasms. The vulva covers approximately 1-2% of the total body surface area, but 3-5% of all malignant melanomas in females occur in the vulva. Affected women are more frequently Caucasian and in the fifth to seventh decade of life. We report as case of a 55 year-old, para 4, postmenopause presented to gynaecology clinic in March 2013 complaining of vulva swelling since a year ago. It was not associated with pain, vaginal itchiness neither abnormal per vaginal bleeding or discharge. Physical examination were unremarkable except for a dark mass on the upper part of left labia majora and minora measuring 2x1 cm. Punch biopsy revealed malignant melanoma and CT scan showed no distant metastasis with bilateral inguinal lymph nodes enlargement.

Surgery performed on 8th July 2013 where by blue dye was utilized to identify sentinel nodes in the inguinal lymphatic beds. Wide excision of bilateral labia majora, labia minora, clitoris was performed with preservation of urethra. Left sentinel node was positive and bilateral superficial and deep inguinal lymph dissection performed. Suprapubic catheter inserted pre-operatively and kept for two weeks. Patient developed mons pubis cellulitis which responded with antibiotic. Histopathology result confirmed malignant melanoma with free margin, all lymph node as well as left sentinel node were negative for metastatic disease. As to date, patient recovered well with no evidence of local recurrence.

The clinicopathological features and treatment of the primary extramammary Paget's disease of the vulva

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Aims:
To characterize the clinicopathological features and evaluate the treatment outcomes for cases of primary Paget's disease of the vulva (EMPDV).

Methods:
A total of 14 cases of EMPDV, which were treated at Cancer Institute Hospital from 1992 to 2012. The medical records and pathology slides were reviewed and analyzed for the patients with primary EMPDV.

Results:
The mean age of the patients was 64.4 years old (range, 47-83). Intraepithelial EMPDV, invasive EMPDV were observed in 11 (78.6%), 3 (21.4%) cases, respectively. In all cases, surgical procedures were initially performed. An obvious positive incision margin was observed in 8 cases (57.1%). Two patients received postoperative radiotherapy due to a positive margin after surgical excision. Six patients were observed without adjuvant therapy. During a follow-up period of 32-221 months (median, 69.5), recurrence was observed in 3 (21.4%) patients. All those 3 patients had positive margin and underwent repeated surgery for local recurrence. Two patients were invasive EMPDV, and 1 patient was intraepithelial EMPDV. Only one patient with invasive EMPDV died of disease 101 months after first diagnosis. Other 2 patients are alive with no evidence of disease. The 3-year survival rates were 100% in both intraepithelial cases and invasive cases.

Conclusions:
Primary EMPVD had a good prognosis especially in intraepithelial EMPDV. Recurrence rate was higher in invasive EMPDV. When recurrence was observed, repeated excision was often necessary.
**P-005 Deep aggressive angiomyxoma**

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Deep aggressive angiomyxoma is classified as soft tissue tumors: uncertain differentiation. The term aggressive was introduced to emphasise the locally aggressive behaviour and the high potential for local recurrence. The tumor is usually slow growing and locally infiltrative, extending insidiously into adjacent soft tissues. Most reported cases are in women and involve the vulva, vagina, and pelvis. Less commonly, the buttocks, inguinal region and retroperitoneum may be implicated. We report a case of aggressive angiomyxoma in a 38 year-old woman who complained rapid growth of vulva-gluteal mass in 5 months. The tumour was lobulated with large veins on the surface and measuring 40 x 25 x 10 cm. It pushed the uterus up and cause compression to the vagina and rectum. The differential diagnosis was gluteal liposarcoma. CT scan showed a huge well-defined heterogeneously enhancing mass occupying the perineum filling up the vagina, left ischiorectal fossa, left vulva and subcutaneous space of left glutreal region. It consist of cystic and solid component. No evidence of distant metastasis seen. She underwent laparotomy, TAIHLSO, wide excision of pelvis, left vagina, left vulva and left glutreal mass. The tumour weighed 25 kg and positive to SMA, desmin and negative to CD34, SI00, CK and EMA. No further treatment was given and up to date, 10 months follow up no evidence of recurrence detected. This is one of the largest angiomyxoma that involve female pelvis, vulva/vagina and glutreal been reported in the literature.

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**P-006 A case of primary neuroendocrine small cell cancer of the vagina**

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**Introduction:** Neuroendocrine tumors arise in a wide range of organ systems but 95% of them are found in the lung. In female genital system, often from the cervix, but rarely generated from the vagina. Neuroendocrine small cell cancers have a poor prognosis because of rapid proliferations, early metastases and non-existence of confirmed regimens of chemotherapy. We report a case of primary neuroendocrine small cell cancer of the vagina which was sensitive to CDDP therapy.

**Case presentation:** We present a case of 63 year-old Japanese woman with a 12cm sized neuroendocrine small cell cancer of the vagina which invaded to the bladder and multiple lymph nodes. She had been diagnosed as multiple sclerosis at age of 37. The cancer was detected posterior of the bladder when she visited our hospital with fever and hematuria, and the vaginal wall biopsy revealed the histological diagnosis. She underwent CDDP therapy instead of CPT-1 therapy because her general condition was poor at that time. After 4 course of the therapies, the size of main tumor and metastases were decreased, and general condition was improved.

**Conclusion:** We experienced a case of advanced primary neuroendocrine small cell cancer of the vagina with poor general status because of coexisting disease and complications. CDDP therapy may be one of the therapeutic options in advanced neuroendocrine cancers of the vagina.
P-007 Lotus petal flap for plastic reconstruction after surgery for vulvar malignancy

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Objective: To evaluate the efficacy of lotus petal flap in terms of anatomical and cosmetic results in patients who underwent vulvo-perineal reconstruction for Vulvar malignancy.

Methods: Between May 2 and April 2013, 15 women underwent Vulvo-perineal reconstruction using lotus petal flap for primary or residual disease at A H regional Cancer centre, Cuttack, Odisha. lotus flaps were bilateral in 9 cases and unilateral in 6 cases.

Results: The median age was 62 years (range, 43-77 years). The mean operating time was 90 minutes in bilateral cases. The mean length of follow up was 20 months (range, 6-48 months). Postoperative complications occurred in 5 patients including 3 cases of partial flap necrosis and 2 cases of donor site breakdown.

Conclusions: Lotus petal flap is safe, easy and fast to perform, has a low rate of complications with good functional and cosmetic results. This technique represents an optimal solution for plastic reconstruction in case of vulvar malignancy.

Keywords: lotus petal flap, vulvo-perineal reconstruction, Vulvar malignancy.

11. Abstract topic: Gynecological Cancer Surgery (Video presentation)

P-008 HPV genotypes and its prevalence in normal population: A cross sectional study in Jakarta, Indonesia

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Objective: Over 200 types of HPV have been recognized on the basis of DNA sequence data showing genomic differences. Multiple infection is more prone to be persistent than single infection. The purpose of this study is to assess the variation of HPV types and their prevalence among negative VIA as normal population in Indonesian women.

Methods: We processed the cervical swab from 1214 patient with negative VIA. HPV DNA and its genotypes were detected by using PCR based inno Lipa HPV DNA test. We also classified whether each infection is single or mixed.

Results: From 1214 women with negative VIA, 39 (3.21%) samples were positive. Among them, we detected 19 types of HPV, consist of 13 types of High Risk-HPV, 5 types of Low Risk-HPV, and 1 type of unknown HPV (type X). The most prevalence HPV type was HPV 52, 39, X, and HPV (16, 18,74) which is the prevalence was 18.31 %, 9.86%, and 8.45% respectively. Of total 39 positive samples, 17 (43.6%) were mixed infections and 22 (56.4%) were single infections. The single infection prevalence include mostly High Risk-HPV as the leading prevalence. The remaining were type 6, 44, 18, 51 and 66, with each prevalence in single infections is 4.54%, while mixed infection consist of variable types.

Conclusion: Our study shows that single HPV infections among the negative VIA are mostly dominated by High Risk-type (HPV 52, 39, 16, and 18). Single infection was more often than multiple infection.

Keywords: HPV genotypes, HPV DNA, Negative VIA, Single infection, Mixed infection.
Objective: To characterize the prevalence and distribution of human papillomavirus (HPV) types among healthy women in South Korea, and to explore risk factors associated with HPV infection.

Methods: This was a cross-sectional study at a health promotion center of the Korea University Guro Hospital for January-June 2013. Each participant had a gynecological examination that included a clinical pap test and a cervical sample for HPV detection and typing performed using the Anyplex™ II HPV 28 Detection (Seegene, Seoul, Korea). Anyplex™ II HPV28 Detection simultaneously detects 19 high-risk HPV types (16, 18, 26, 31, 33, 35, 39, 45, 51, 52, 53, 56, 58, 59, 66, 68, 69, 73, 82) and 9 low-risk HPVs (6, 11, 40, 42, 43, 44, 51, 61, 70). Women with ASC-US and/or positive HPV test were referred to colposcopy.

Results: Of the 968 women, mean age was 48.8 years. Overall high-risk HPV prevalence was 33.7% on the assay. Single infection was found in 225 women (23.2%) and co-infections were found in 101 women (10.4%). The most frequently occurring high-risk HPV types were 51 (6.5%); 52 (6.1%); 46 (4.8%); 16 (4.5%); 68 (4.2%); 35 (3.5%); 39 and 56 (2.5%); 31 and 66 (2.1%); 18 (1.8%). Prevalence of HPV 16 (16.4%) was most common in women with CIN1+. HPV 16 was most strongly associated with a diagnosis of CIN2+ (odds ratio = 18.46; 95% CI: 3.60-94.9, P<0.0001). High-risk HPV prevalence was associated with low parity (p=0.034), young age at first delivery (p=0.001).

Conclusion: Our study indicates that 51, 52, 46, 16 and 68 are common high-risk HPV type in healthy women of South Korea. HPV 16 is the most common in the high grade CIN lesions, as in most studies worldwide. The information for regional HPV prevalence can be useful to establish a strategy for cervical cancer prevention in South Korea.
Clinical benefits of HPV-16 and HPV-18 genotyping for women with ASC-US and LSIL cytology

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Background: Women with Human papillomavirus (HPV) genotypes 16 and 18 are at the greatest risk of developing high-grade cervical lesions. We evaluated the clinical benefits of distinguishing the individual HPV 16 and 18 genotyping and high-risk HPV (HR-HPV) testing in women undergoing cervical cytology with HPV testing.

Methods: From June 2010 to July 2011, 130 patients aged 20 to 50 years enrolled with Atypical Squamous Cells of Undetermined Significance (ASC-US) or Low-grade Squamous Intraepithelial Lesion (LSIL). We underwent conventional PAP smear, Liquid based cytology (LBC), colposcopy and punch biopsy for them. We used cervix brush for cytology, and cobas 4800 HPV Test for HR-HPV testing and individual HPV-16/HPV-18 genotyping. Colposcopy and punch biopsy was performed by the gynecological oncologist.

Results: There were 83 patients showing HPV positive, including 35 with HPV-16/HPV-18 genotyping, 48 with HR-HPV positive. 19 patients with Cervical Intraepithelial Neoplasia (CIN) 2 or more severe lesions were HPV-positive. Among 19 patients with CIN2 or worse, 11 patients were HPV-16/HPV-18 positive, 8 patients were HR-HPV positive. The absolute risk for CIN2 or worse with HPV-16/HPV-18 genotyping was 7 times higher than the risk for them without HPV and 1.9 times higher for them with HR-HPV group.

Conclusions: Co-testing with HPV testing and PAP cytology increases the sensitivity for detection of CIN2 or worse. HPV-16 and HPV-18 genotyping reduces the unnecessary interventions.

Factors related to the need to have a Pap test in unmarried university students in Korea

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Purpose: This study was conducted to evaluate the factors related to the awareness of Pap test among unmarried university students in Korea.

Methods: A survey design was utilized to collect cross-sectional and retrospective data. Data were collected from 303 unmarried female students attending university and using a self-administered questionnaire including knowledge of HPV, 4 items of need to have a Pap test, and socio-demographic characteristics. Descriptive statistics and the ANOVA were calculated by IBM SPSS (2010).

Results: The mean age of the students was 22.4 (SD 2.0) years. Level of knowledge of cervix cancer was low (2.54/7). In asking of “Getting a Pap test makes me feel better”, 69.0% answered as agree. 71.6% students agreed to have a Pap test without symptom. Significant factors associated with need to have a Pap test were sexual experience (t = 5.40, p = 0.021), heard of Pap test (t = 15.32, p < 0.001), had of Pap test (t = 5.06, p = 0.025), and heard of HPV (t = 9.91, p = 0.002). Correlation of knowledge of HPV and need to have a Pap test was significant as r = -0.14 (p = 0.013).

Conclusion: To prevent cervix cancer at the university setting, general awareness of HPV and its relationship of cervix cancer should be enhanced. More specific education about the Pap screening will be provided for young unmarried women.

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P-013 Can VIA be the alternative method of Pap smear in screening of cervical cancer in low resource settings?

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**Background:** Cervical cancer is the leading malignancy in the world leading to death. It is fully curable if it is diagnosed at precancerous state. Screening of cervical cancer plays a major role in reducing the incidence of cervical cancer.

**Aim:** To evaluate visual inspection with acetic acid (VIA) as an adjunct to Papnicolaou smear (Pap smear) for screening of cervical cancer in low resource settings.

**Methods:** A Prospective study was carried out in one hundred fifty women of reproductive age group attending gynecology OPD of Shree Birendra Hospital, Kathmandu, Nepal. Pap smear was taken and VIA with acetic acid was done. All women who tested positive on screening underwent cervical biopsy. Data was obtained and statistically analyzed.

**Results:** Out of 150 patients, VIA was positive in 17 (11.3%) where as Pap smear identified 15 (10%) positive women. Out of 17 patients who tested positive in either of the screening tests underwent cervical biopsy, one had CIN 3, four had CIN 2, ten had CIN 1, one had carcinoma in situ CIS and 2 reported normal. In our study, 27 patients were picked up as positive by combination of these tests, of which 16 (56.2%) had CIN on biopsy.

**Conclusion:** Our study showed that VIA had sensitivity comparable to Pap smear. It can be a suitable alternative to Pap smear for screening of cervical cancer in a resource poor settings.

**Keywords:** Cervical cancer, Pap smear, VIA.

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P-014 Percentage of women screened before “See and Treat Program” in Jakarta

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**Background:** Pap smear test as a screening method for cervical cancer has been found to be inconvenient and uncomfortable for Indonesian women. To solve this problem, “See & Treat” program was established in collaboration with health division of local government. This program used both VIA (Visual Inspection of Acetic Acid) test to screen, and cryotherapy to treat positive VIA. VIA test was non-invasive, simple, low cost, and could be done even in limited facilities and resources. Therefore, this study was done to obtain the scope of cervical cancer screening using Pap Smear and VIA test in Jakarta before “See and Treat” program.

**Aim:** To evaluate percentage of women screened before “See and Treat” program in Jakarta

**Method:** Information that the women had been screened by Pap smear or VIA test were collected from anamnesis during the See and Treat program in Jakarta from October 2007 to December 2012. Percentage was defined as the number of women who have been screened either with both test compared to all the women who were screened on “See and Treat” program at the same period.

**Result:** Among 22989 women screened by the program, there were 3793/22989 (16.5%) who had at least one Pap Smear/VIA test in their lifetime.

**Conclusions:** Percentage rates were 16.5% in this study. Due to the large number of participants, there is possibility this program could be adopted as national

**Keywords:** Cervical cancer screening percentage, VIA, Pap smear, “See and Treat” program
P-015 Detection of premalignant condition of ca cervix at Central Women's Hospital by VIA

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The aim of this study was to compare the usefulness of VIA (Visual Inspection with Acetic Acid) and cervical cytology in detecting premalignant conditions of the cervix at Central Women's Hospital, Yangon.

This was a prospective clinical study. A total of 200 sexually active women between age 20 to 60 years, came to CWI OPD, Yangon were enrolled in this study. For each patient history taking according to proforma, cytological examination with Ayre spatula, visual inspection of cervix after application of 5% acetic acid under good light, colposcopy and colposcopic directed cervical punch biopsy were performed.

Univariate analysis were carried out for all questionnaires for the continuous variables, the statistical significance of differences between groups were analysed with two independent samples T test. For categorical data, the differences in proportions were analysed with x² test or Fisher's exact test where appropriate. The level of significance was set at 0.05 (95% confidence interval).

The results of VIA were comparable to that of cytology, and the difference between VIA and cytology, was statistically significant. VIA is a good screening test for premalignant condition of cervix with high sensitivity but low specificity.

P-016 Visual inspection with acetic acid in detection of high grade squamous intraepithelial lesion and cancer of cervix in community setting

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Introduction: Cervical cancer, an important public health issue, is the most common cancer among the women in developing countries.

Aim: To determine the role of visual inspection with acetic acid (VIA) in detection of high grade squamous intraepithelial lesion (HSIL) and cancer of cervix in community setting.

Methods: A cross sectional community based study was conducted in a total of 1012 ever married women (25-64 years) in South Okkalapa Township. Both Pap smear and VIA were done. Biopsy was taken from all VIA positive patients and colposcopy was done in abnormal Pap smear patients to use histology as a gold standard.

Results: Out of total 1012 study population, 51 women (5.14%) were VIA positive and 53 women (5.2%) had abnormal Pap results. The positive predictive value (PPV) of VIA and Pap smear were 38.89% and 50.94% respectively. Among the participants with abnormal histology results, VIA enabled the researcher to detect 8 out of the 9 women (89%) for HSIL and two out of the 2 women (100%) with cancer cervix. The estimated prevalence of squamous intraepithelial lesion (SIL) was 2.67%, of which HSIL and cancer cervix represented 0.89% and 0.20% in this study. Regarding agreement between VIA and Pap smear, K value (kappa agreement) was 0.4. Therefore, the results of VIA were comparable to that of Pap smear.

Conclusion: In resource poor setting, where cytopathological service is limited, VIA warrants consideration as an alternative to Pap smear in the detection of HSIL and invasive cervical carcinoma.
A "screen-and-vaccinate" combined strategy can improve participation in cervical cancer screening in India

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Objective: Assess participation of women in cervical cancer screening whose daughters participated in a human papillomavirus (HPV) vaccination program.

Methods: In a prospective cluster randomised study, 1000 girls aged 10–18 years were randomized to receive 2 or 3 doses of a quadrivalent HPV vaccine. Healthy, non pregnant women aged 30–59 years, with intact uterus, were motivated for screening using the message that cervical cancer is caused by persistent high-risk HPV infection and prevention and detection of HPV infection are methods of primary and secondary prevention, respectively. Women from a neighbouring community where HPV vaccination had not been offered were recruited as controls using standard screening messages. Cervical samples were taken for cytology and HPV DNA, followed by visual inspection with acetic acid (VIA) and Lugol's iodine (VILI). Colposcopy and biopsy were done in test-positive women.

Results: Participation rates in screening were: 506/723 (70%) mothers whose daughters were vaccinated; 226/1542 (14.6%) mothers whose daughters were not vaccinated because of limited vaccine supply; 459/1357 (33.8%) in the control group. The difference amongst the three groups was statistically significant (p < 0.0001). CIN detection rates were similar in the three groups, i.e., 3%, 2.6% and 2.6% respectively. Only 6.8% of mothers got screened on the day of vaccination and another 10.6% in the following week. There was no difference in participation rates in the 2 vs 3 dose groups.

Conclusion: HPV vaccination helps create awareness on the cause of cervical cancer and reinforces the message of screening to detect HPV infection as a rational approach to cancer prevention.

Spontaneous regression rate of cervical intraepithelial neoplasia I according to age and human papillomavirus infection

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Objective: To evaluate the spontaneous regression rate (SRR) of cervical intraepithelial neoplasia I (CIN I).

Methods: This was a retrospective study of 161 women with CIN I on punch biopsy of uterine cervix and followed up without excision at least for 6 months. SRRs according to the presence of high-risk (HR) HPV infection and type of HPV were compared.

Results: Mean age was 41 years (range, 17 to 72). Median follow-up period was 22 months (range, 6 to 112 months). Eighty had the result of initial HPV test, and 62 (77.5%) were positive for HR HPV infection. SRRs at 6-month, 1-year, and 2-year follow-up were 82.4%, 85.7%, and 87.6%, respectively. There were 10 who showed spontaneous regression at 6 months and recurrent abnormal Pap results at 1 year, all of whom had negative results in follow-up Pap or biopsy. Older age was associated with higher SRR at 6 months and lower infection rate of HR HPV than younger counterpart (p = 0.009). Nevertheless, neither HR HPV infection (p = 0.014) nor HPV type 16 or 18 infection (p = 0.172) was significantly associated with abnormal Pap result at 6 months.

Conclusion: The higher SRRs of older patients with CIN I might be associated with lower infection rate of HR HPV in these patients than younger counterpart. Primary CIN I in older patients could be safely followed up without immediate ablative treatment.
P-019 Detection of CIN with self-obtained HPV test in women without Pap smear for 5 years and analysis of attributing factors

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Aim:
To detect cervical dysplasia with postage-mailed self-obtained HPV test in women not undergoing Pap smear for more than 5 years and to analyze its attributing factors

M&M
This IRB-approved prospective population-based study was conducted to investigate if a self-obtained vaginal swab for HPV test and associated educational intervention could make a significant impact on this issue in Taiwan. Eligible women obtained from Health Promotion Administration were invited through a postage mail.

Results:
Between Mar 2010 and Sep 2012, a total of 10,693 women who had not attend the national Pap smear program for 5 years were invited to this study. Of them, 383 responded and 381 submitted questionnaire but only 305 (2.85%) with informed consent and HPV test samples returned. The median age of women was 47.2 years (range 27.1-79.7). A total of 52 women (17.0%) had a positive HPV testing, and nine accepted further investigations. Two cases with CIN2 were found. Reasons of not attending screening included lack of time (54.9%), embarrassment (36%), feeling of low risk (22.8%), fear of positive result (12.6) and perceived potential pain (10.8%). Around 90% of responders did not feel pain from the self-obtained HPV test.

Discussion:
Self-obtained HPV test is an acceptable sampling method. Although studies from the western countries suggest that self-sampling could increase participation among non-responders, the results of this study indicate a different approach must be explored to improve the coverage rate of Pap smear of the culture characteristics like Taiwan.

P-020 Low selenium serum concentration and glutathione activity in cervical cancer patients

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Introduction: It is widely accepted that specific human papillomavirus (HPV) types are the main etiologic agent of cervical carcinogenesis. Other environmental and host factors also play important roles in persistent HPV infection and further malignant transformation of cervical epithelium. Low serum selenium concentration and glutathione (GPx) activity has been associated with increased risk of many types of cancer. However, the role of selenium and GPx in carcinogenesis of the cervix is still unclear. Therefore, this study was designed to analyze the role of selenium and GPx in cervical cancer

Method: Selenium serum concentration and GPx activity of 20 women with cervical cancer along with its healthy counterpart (control group) were obtained using inductive couple plasma mass spectrometry (ICP-MS). GPx activity was measured spectrophotometrically based on the quantity of NADPH used in the reduction of glutathione.

Results: The mean selenium serum concentration in cervical cancer group was significantly lower than that in the control group, 67.24 ± 15 ng/mL and 77.05 ± 12 ng/mL (p = 0.02), respectively. The mean GPx activity in the cervical cancer group was also significantly lower than that in the control group, 128.18 ± 38 amol NADPH/min and 148.9 ± 23 amol NADPH/min (p = 0.04), respectively.

Conclusion: Selenium serum concentration and GPx activity were significantly lower in the cervical cancer patients. Our results demonstrate, selenium and GPx activity may have an important role in the carcinogenesis of cervical cancer.
**P-021** Effects of chronic boron exposure on cervical cytology and HPV prevalence

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**Objective:** To determine the effect of boron on cervical cytology and HPV prevalence on humans who are living in boron mining areas.

**Material and Methods:** 768 cases between the ages of 30–60 were included in this study. Of these cases, 350 subjects reside in boron mining areas (study group) and 238 donors live elsewhere (control group). Boron levels in urine were investigated on 30 random women from both groups. Boron determination in urine was performed using ICP-OES. Cervical cytological samples were collected by Thin-Prep method and high-risk HPV DNA tests were done on all cases.

**Results:** The mean age of cases is 45.1 ± 8.7. Daily boron exposure for women living in boron mining areas is 4.67 ± 2.34 mg/day and for control group this value is 1.62 ± 0.93 mg/day. Abnormal cytology rates of study and control group were 4% and 5%, respectively. No significant differences were found regarding abnormal cervical cytology between the two groups. High-risk HPV prevalence of study and control groups was 1.5% and 0.8%, respectively. hrHPV DNA rates of cases who live in boron mining area were higher than control groups.

**Discussion:** According to the preliminary findings of this study, there was no difference in abnormal cytology rates between women who live in boron mining areas and those who are not; however, hrHPV prevalence was different for these groups. HPV prevalence is higher in women who do not live in boron mining areas.

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**P-022** Is the correlation between Papanicolaou smears and histopathology results affected by time to colposcopy?

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**Background:** Low grade cervical intraepithelial neoplasia (CIN) can spontaneously regress while high grade CIN may progress to more aggressive state. The appropriate time from Pap smear collection to colposcopy was unknown.

**Objective:** Time to colposcopy (TC) after abnormal Pap smears were evaluated for cytohistologic correlation (CIC).

**Methods:** This retrospective study assessed the correlation between TC and CIC of women who had abnormal Pap smears. Colposcopic chart review included participants from 2010 to 2013 who attended colposcopic clinic, Thammasat University Hospital, Thailand.

**Results:** Four hundred and sixty cases who had abnormal Pap smears were recruited. Pap reports were atypical smear and low grade squamous intraepithelial lesion (SIL), high grade SIL and cancer at 339, 114 and 7 cases, respectively. One hundred and twenty four patients underwent loop electrosurgical excision procedure (LEEP). A quarter and a half of cases were colposcopic examined within 1–2 months after abnormal Pap collection. CIC was 88 percent and not affected at all by TC. Subjects who attended cervical cancer screening from affiliated health providers had shorter TC less than those screened by our tertiary hospital.

**Conclusion:** Time to colposcopy in abnormal Pap smear done at Thammasat University Hospital had the highest frequency of 42 days. Length of TC does not affect the correlation between Pap and histopathologic reports. The longer waiting period for colposcopy did not alter the progression or regression of the disease. Waiting time for colposcopy in this study was in line with other literatures.

**Keyword:** Time, Colposcopy, LEEP, Pap, Histology
P-023  Atypical squamous cells cannot exclude high grade squamous intraepithelial lesion and histologic evaluation for clinical significance

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Objective: Under the 2001 Bethesda system, atypical squamous cells are categorized into two groups: atypical squamous cells of undetermined significance (ASC-US) and atypical squamous cells cannot exclude high grade squamous intra-epithelial lesion (ASC-H). Only small number of patient are diagnosed as ASC-H and it has been difficult to evaluate clinical significance of ASC-H. We wanted to compare cytologic findings with follow-up tissue biopsies and measure the prevalence of pre-invasive high-grade dysplasia (cervical intraepithelial neoplasia, CIN II/III) with ASC-H cytology.

Study design: Cross-sectional study with retrospective data collection, at University of Ulsan College of Medicine, Asan Medical Center, Seoul, Korea. Between January 2008 and December 2009, 154 patients with ASC-H were identified and histology follow-up was available.

Results: Of the 154 cases diagnosed as ASC-H on cytology, 64 (41.6%) were diagnosed as high grade dysplasia (CIN II/III) and 33 (21.4%) diagnosed low grade dysplasia (CIN I). The prevalence of CIN II/CIN III was 64.9% for women aged ≥40 years and 35.1% for women aged <40. Of the 154 cases 103 cases had HPV DNA testing results. HPV DNA was positive in 54 of the dysplastic cases (CIN I = 18 cases and CIN II/III = 29) and negative in 7 of the dysplastic cases (CIN I = 2 and CIN II/III = 5).

Conclusions: ASC-H are associated with high-grade dysplasia (CIN II/III). If patient had ASC-H, Tissue biopsy must be consulted as American Society for Colposcopy and Cervical Pathology guideline. Furthermore, ASC-H have clinical importance because of high positive predictive value for high-grade dysplasia.

P-024  Diagnostic utility of cervical cytology for adenocarcinoma in situ of the uterine cervix

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Objective: Adenocarcinoma in situ of the uterine cervix (AIS) is generally asymptomatic and undetectable by gross examination; therefore, early diagnosis is difficult. Here, we retrospectively evaluated the diagnostic utility of cervical cytology, colposcopy, and cervical biopsy for AIS.

Methods: Cases of 5 patients diagnosed with AIS or adenocarcinoma in situ and surgically treated in our hospital between January 2003 and December 2013 were retrospectively analyzed.

Results: Upon initial presentation, 2 patients were diagnosed with AIS, 1 with adenocarcinoma in situ, 1 with AIS with squamous cell carcinoma in situ, and 1 with AIS with invasive squamous cell carcinoma. On cervical cytology, atypical glandular cells were detected in only 1 case; however, our retrospective analysis showed the presence of atypical glandular cells in all cases. On colposcopy, no abnormal findings were detected in 1 case of pure AIS and the extent of the lesion site was underestimated in 2 cases, except for AIS with invasive squamous cell carcinoma. Colposcopy-assisted cervical biopsy revealed AIS in only 1 of 3 cases tested.

Conclusion: AIS is typically located high and deep in the cervical canal, making its accurate preoperative diagnosis difficult. As AIS was retrospectively identified on cervical cytology in all 5 cases, cervical cytology may be an available diagnostic method for the detection of glandular cytologic abnormalities indicative of AIS. However, attention should be paid to the possibility of underdiagnosis of glandular cytologic abnormalities on cervical cytology.
P-025 Cost of cervical cancer diagnosis and treatment in the Philippines: Implications for providing universal health care coverage to low-income women

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Background:
To date, no study has reported on the cost of diagnosing and treating cervical cancer in the Philippines. This information is essential for assessing cost effectiveness of screening interventions and the funding required for the Universal Health Care coverage proposed by the National Healthcare System.

Methods:
Administrative data from the University of the Philippines, the national referral center for cervical cancer cases were used to analyze total costs in the diagnosis and treatment of cervical cancer. Members of the Society of Gynecologic Oncologists were also surveyed as to fees and costs of treatment in their practice. Actuarial costs were collected and analyzed for each diagnostic and treatment intervention per stage of the disease in the government and private hospitals.

Findings:
Total costs for pretreatment evaluation alone costs from USD 630.76 to USD1,042.64. Surgery in the form of radical hysterectomy costs from USD 2,874.28 to USD 10,510.83. Concurrent chemotherapy with complete radiotherapy costs from USD 3,793.14 to USD 8,495.41. The minimum wage is USD 10.86 per day.

Conclusion:
Full coverage is required for the diagnosis and treatment of cervical cancer to ensure the provision of comprehensive care, especially for late-stage cancers. Given the great disparity in the cost of treatment of cervical cancer and the average wage of a low-income woman, providing full coverage will impact on cervical cancer mortality rates in the Philippines. Interventions to increase screening among low-income women are likely to be cost effective.

P-026 The comparison of clinical and surgical staging of cervical cancer: A retrospective study on patients at Cipto Mangunkusumo General Hospital

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Objective: To evaluate the accuracy of clinical examination in determining stage of operable cervical cancer and the extent of the disease.

Materials and Methods: The retrospective study involved 58 subjects of Oncology Gynecology patient in Dr. Cipto Mangunkusumo Hospital, from January 2008-December 2010 with a diagnosis of cervical cancer. Patients who were diagnosed up to stage IA were included and patients lost to follow-up, receiving preoperative neoadjuvant chemotherapy, and died before treatment were excluded. The outcomes evaluated were postoperative clinical staging, enlarged lymph nodes, parametrial involvement, and tumor size. Lymph nodes, parametrial, and the tumor size were assessed from the surgery and histopathological results.

Result: The age distribution of 58 subjects ranged from 25-70 years (mean 48.39 years). Squamous cell carcinoma was the most frequent type (44.9%), followed by adenocarcinoma (24.1%). Errors in preoperative clinical staging compared with postoperative was 40% in stage IA, 95.2% in stage IB1, 17.65% in stage IB2, and 7.14% in stage IIA. Sensitivity, specificity, positive predictive value, and negative predictive value for preoperative clinical examination of lymph nodes were 11.1%, 100%, 100%, and 85.96%. Whereas for preoperative clinical examination of parametrial involvement were 37.5%, 100%, 100%, and 90.90%. Sensitivity, specificity, positive predictive value, and negative predictive value for preoperative clinical examination of the tumor size were 91.84%, 88.89%, 97.83% and 66.67%.

Conclusion: Clinical examination has limitations, especially in determining lymph nodes and parametrial involvement. Other diagnostic modalities in determining the extent of the disease is necessary. Enforcement of the right diagnosis in patients with cervical cancer is needed to determine the appropriate treatment.

Keywords: staging, cervical cancer, preoperative, postoperative
P-027 A discussion of peritoneal cytology in patients with uterine cervical carcinoma

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Objective: It has been reported that peritoneal cytology is of prognostic significance in endometrial cancer although this is not universally accepted. On the other hand, in cervical cancer very few reports have addressed the problem of positive washes found in the peritoneal cavity. The aim of this study was to determine the clinicopathological study of the peritoneal cytology in patients with uterine cervical carcinoma.

Methods: We investigate the peritoneal cytology status of the uterine cervical carcinoma in 414 cases with FIGO stage Ia-IIb cases between 2008 and 2013 treated at the Cancer Institute Hospital-Tokyo, Japan. 64 patients had FIGO stage Ia, 191 patients Ib1, 80 patients Ib2, 54 patients IIA, 21 patients IIb, two patients IIIb and two patients IVb. 54 of 414 patients were underwent neoadjuvant chemotherapy. 200 of 414 patients were squamous cell carcinoma, 108 patients adenosquamous carcinoma or adenocarcinoma and six patients were other type. Peritoneal fluid retained in the cul-de-sac was aspirated completely by syringe immediately upon opening the peritoneal cavity. In cases with no ascites, 20-30 ml of saline was instilled into the cul-de-sac. After being centrifuged, the specimens were stained with Papanicolaou, Alcian blue, Giemsa, and periodic acid-Schiff procedures. A morphometric analysis was performed.

Results: The rate of peritoneal cytologic positivity in the all cases, 13 of 414 (3.1%) patients were positive of ascites. Two of 13 were squamous cell carcinoma and eleven of 13 were adenocarcinoma.

Conclusion: The high rate of the positive peritoneal cytology was appeared in the case of adenocarcinoma compared with the case of squamous cell carcinoma.

P-028 Postoperative outcomes of FIGO stage IB1 cervical cancer invisible on MRI

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Objectives: To retrospectively evaluate the postoperative outcomes of FIGO stage IB1 cervical cancers using magnetic resonance imaging (MRI).

Methods: Between January 2001 and December 2007, we reviewed the medical records of 86 patients with biopsy-proven IB1 cervical cancer which was invisible on MRI. During the same period, we also reviewed medical records of 260 patients with biopsy-proven IB1 cervical cancer which was visible on MRI. These two cancer groups were both treated with radical hysterectomy and lymph node dissection. Both cancers were compared in terms of pathologic parameters after surgery including tumor size, depth of stromal invasion, parametrial invasion, lymphovascular invasion, lymph node metastasis, and long-term survival rate.

Results: The mean sizes and depths of stromal invasion of MRI-invisible versus MRI-visible IB1 cancers were 5.0 ± 7.0 mm and 4.5 ± 2.8 mm versus 29 ± 15 mm and 9.9 ± 5.3 mm, respectively (p = 0.000). The incidences of lymph node metastasis, parametrial invasion, and lymphovascular invasion were 11.1% (1/86) and 18.8% (49/260) (p = 0.000), odd ratio = 19.7, 0% (0/86) and 65% (17/260) (p = 0.009, odd ratio = 12.4), and 4.7% (4/86) and 29.9% (70/260) (p = 0.000, odd ratio = 7.6) in the MRI-invisible and MRI-visible IB1 cancers, respectively. Recurrence-free and overall 5-year survival rates of MRI-invisible versus MRI-visible IB1 cancers were 98.8% (85/86) versus 91.2% (237/260) and 100% (86/86) versus 95.8% (249/260), respectively (p = 0.011 and 0.045).

Conclusions: MR-invisible IB1 cancer provides better postoperative outcomes than MR-visible IB1 cancer because of much lower tumor burden. Less radical hysterectomy might become one of treatment options for MR-invisible IB1 cancer.
**P-029** Diagnostic impact of tumor diameter in preoperative MRI predicting lymph node metastasis and parametrical involvement in FIGO IB1 cervical carcinoma


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**Background:** Although the morbidity associated with radical hysterectomy is high, surgery still remains a main stream in the treatment for early stage cervical carcinoma. Therefore, it is important to identify preoperatively a low risk patient as a candidate for less radical surgery such as modified hysterectomy and sentinel lymph node detecting procedure. The aim of this study was to evaluate the correlation between the preoperatively measured tumor diameter using magnetic resonance imaging (MRI) and pathological prognostic factors in FIGO stage IB1 cervical carcinoma.

**Methods:** A total of 277 patients with FIGO stage IB1 cervical cancer who performed preoperatively MRI and radical hysterectomy during 1998 to 2012 were included in this study. Clinical records, MRI findings, and pathological reports were retrospectively reviewed.

**Results:** Histological diagnosis was squamous cell carcinoma in 115 patients and nonsquamous cell carcinoma in 162 patients. The tumor diameter measured by MRI ranged from zero to 55 mm, with a median of 22 mm. Pathological prognostic factors included lymph node metastasis and parametrical involvement. These factors were found less frequently in patients with a small tumor diameter. Most notably, parametrical involvement was seen in none of the patient with tumor 20mm or less (P<0.01).

**Conclusion:** The tumor diameter measured in preoperative MRI may serve as a strong predictor of parametrical involvement and lymph node metastasis in FIGO stage IB1 cervical carcinoma, which can be used to select a candidate patient for less radical surgery in order to reduce the morbidity.

**P-030** Diagnostic accuracy of MR imaging and FDG PET for the detection of lymph node metastases of cervical cancer

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**Purpose:** This study aimed to compare magnetic resonance imaging (MRI) and positron emission tomography (PET) with 18F-fluorodeoxyglucose (FDG) regarding their performance in nodal staging of patients with uterine cervical cancer.

**Materials and methods:** We performed a retrospective review of 397 patients with International Federation of Gynecology and Obstetrics stage IA–IB1 cervical cancer, and we extracted patients who underwent FDG-PET and MRI before hysterectomy and pelvic lymphadenectomy from 2008 to 2012. Metastasis criteria were a lymph node diameter of 1 cm or more at MRI and a focal increase in FDG uptake at PET. The findings of FDG-PET and MRI were compared with histologic findings.

**Results:** Eighty-two patients were enrolled in this study. Sixteen patients had metastatic lymph nodes at histologic examination. The overall patient-based sensitivity, specificity, and accuracy for detection of lymph node metastases were 56.2% 96.9%, and 89.0% for FDG-PET, and 12.5% 95.4%, and 79.2% for MRI, respectively. The sensitivity of FDG-PET was statistically significant higher than that of MRI (p = 0.02, Fisher exact test).

**Conclusion:** FDG-PET showed higher accuracy than MRI, and therefore, FDG-PET might be more useful than MRI for detecting lymph node metastases in patients with cervical cancer.
P-031 The clinical value of FDG-PET/CT in adenocarcinoma of uterine cervix: A case series

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Objective: To evaluate the clinical usefulness of maximum standardized uptake value (SUV max) of preoperative ¹⁸F-fluorodeoxyglucose (FDG) positron emission tomography/computed tomography (FDG-PET/CT) in identifying metastatic lesions and predicting risk factors for recurrence in adenocarcinoma of uterine cervix.

Methods: A total of 11 cases of adenocarcinoma of uterine cervix were included. All patients underwent FDG-PET/CT before radical hysterectomy and pelvic lymph node dissection followed by adjuvant concurrent chemoradiation therapy. We evaluated the relation of SUV max to pathologic risk factors and recurrence.

Results: Median age was 43 years (range, 39 to 72 years). The FIGO stage comprised 3 Ib1, 5 Ib2, and each one of IIa, 1, Ib3, and IVb. There were 8 endocervical, 1 endometrioid, and 1 mucinous adenocarcinoma. One case of adenosquamous carcinoma was also included. Median SUV max of cervical mass was 4.9 ranged from 3.0 to 24.0. SUV max of three recurrent cases were 10.1, 7.6, and 7.5, which were similar to that of 9 cases without recurrence. There was no association between SUV max and tumor histology and grade. There was no significant correlation of SUV max with tumor size and depth of stromal invasion (Spearman rho = 0.092 and 0.368, respectively). Moreover, mean SUV max values between groups with and without parametrial invasion were not different (p = 0.754). The sensitivity and specificity of FDG-PET/CT in predicting pelvic LN metastasis were 50% (2/4) and 57% (4/7).

Conclusion: SUV max of preoperative FDG-PET/CT does not appear to be useful in identifying LN metastasis and predicting recurrence in adenocarcinoma of uterine cervix. Further large studies are necessary to confirm the findings of this study.

P-032 Nodal status of radical hysterectomy in early stage cervical cancer as a prognostic factor

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Background: The number and location of positive lymph nodes in patients with cervical cancer significantly affect the prognosis. Patients are considered to have an unfavorable prognosis if multiple lymph nodes are positive.

Aim: To calculate total number of pelvic lymph nodes that was dissected during radical hysterectomy and to evaluate its correlation with their survival.

Method: The medical records of stage IB-IIA cervical cancer patients who underwent radical hysterectomy and pelvic lymphadenectomy in Cipio Mangunkusumo Hospital between July 2009 and December 2012 were retrospectively reviewed.

Result: Of the 132 stage IB-IIA cervical cancer patients who underwent radical hysterectomy and systemic lymphadenectomy, the median amount of pelvic lymph nodes of the left pelvic side were 8 nodes (range 2–34 nodes), and right pelvic nodes were 9 nodes (range 2–37 nodes). The median amount of total pelvic lymph nodes was 19 nodes (range 4–61 nodes). There were significantly different between total amount of lymph nodes and positive lymph nodes (p = 0.000). There was also significant finding among total number of positive lymph nodes and recurrences (p = 0.000). Further evaluation needed to explore the influence of nodal status and incidence of recurrence in cervical cancer.

Conclusion: Positive metastatic nodal status and incidence of recurrence were influenced by number of total lymph nodes taken during radical hysterectomy.

Keyword: Cervical cancer, nodal status, radical hysterectomy, recurrence.
**P-033** Positive rate of lymph node metastasis in 139 cases of gynecologic cancer in our department

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**Objective:** Lymph node metastasis rate is varying among gynecologic cancer. Our purpose is to identify the clinicopathological risk factors for regional lymph node metastasis in early-stage gynecologic cancer.

**Methods:** One hundred thirty-nine patients with clinical early-stage of cervical cancer (42 cases), endometrial cancer (57 cases) and ovarian cancer (40 cases) who underwent hysterectomy plus bilateral salpingo-oophorectomy plus pelvic and/or para-aortic lymphadenectomy between 2010 and 2012 in the Obstetrics and Gynecology, Japanese Red Cross Kyoto Daiichi Hospital were retrieved.

**Results:** The positive lymph node metastasis rates were 26.2% in cervical cancer, 17.5% in endometrial cancer and 15.0% in ovarian cancer, respectively. The positive lymph node metastasis rates were 20% in squamous cell carcinoma, 25% in adenocarcinoma and 75% in adenosquamous carcinoma in cervical cancer. The positive lymph node metastasis rates were 77% in less than one-second myometrial invasion and 38.9% in more than one-second myometrial invasion in endometrial cancer. The positive lymph node metastasis rates were 25% in serous cystadenocarcinoma, 0% in mucinous cystadenocarcinoma, 0% in endometrioid adenocarcinoma and 28.6% in clear cell carcinoma in ovarian cancer.

**Conclusion:** The deep myometrial invasion and tumor types were superior predictive criteria for lymph node metastasis in gynecologic cancer patient. An accurate evaluation of those factors preoperatively will be beneficial to predict lymph node metastasis and guide the operation.

**P-034** Lymph node metastasis in cervical cancer: Novel diagnostic criteria in multi-detector computed tomography

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**Objectives:** The sensitivity of the current 10 mm cut-off diameter that is used to diagnose lymph node (LN) metastasis is too low. This is the first study to develop a new criterion to diagnose LN metastasis in a region-by-region manner using multi-detector computed tomography (MDCT).

**Methods:** 1) The short-axis diameter of the LNs in MDCT images from 1 mm slices obtained immediately prior to surgery was compared with the pathological diagnosis in 78 uterine cervical cancer patients undergoing primary surgery. For the region-by-region analysis, we divided para-aortic and pelvic spaces into 13 regions. 2) In 28 cases in which patients received neoadjuvant chemotherapy (NAC) followed by surgery, we compared MDCT images before and after NAC.

**Results:** 1) The optimal cut-off in the region-by-region analysis was 5 mm, yielding 71% sensitivity and 79% specificity. 2) NAC significantly decreased LN size (p<0.001). NAC decreased the number of swollen LN regions (>5 mm) from 51% (81/158) to 26% (41/158).

**Conclusions:** The new criterion developed using MDCT is effective for accurately assessing LN status. It also facilitates the assessment of NAC efficacy regarding the eradication of LN metastases.
P-035 Maximum standardized lymph node uptake value could be an important predictor of recurrence and survival in patients with cervical cancer

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Objectives: This study investigated prognostic values of maximum standardized lymph node (LN) uptake \( (SUV_{\text{max}}) \), minimum apparent LN diffusion coefficient \( (ADC_{\text{min}}) \), and LN short-axis length with cervical cancer.

Study design: Retrospective review of prognoses was examined for correlations with LN \( SUV_{\text{max}}, \) LN \( ADC_{\text{min}} \), and LN short-axis length on confirmed to the pelvis for 80 cervical cancer patients before undergoing radiotherapy with or without concurrent chemotherapy. We used receiver operating characteristic (ROC) curves analyses to evaluate whether LN \( SUV_{\text{max}}, \) LN \( ADC_{\text{min}} \), and LN short-axis length predicted risk of recurrence or survival.

Results: Disease-free survival (DFS) and overall survival (OS) rates of patients with high LN \( SUV_{\text{max}} \) was lower than those of patients exhibiting low LN \( SUV_{\text{max}} \) \( (P = 0.003 \) and \( P = 0.019) \). Patients with low LN \( ADC_{\text{min}} \) had poorer DFS and OS than those with high LN \( ADC_{\text{min}} \) \( (P = 0.033 \) and \( P = 0.005) \). DFS for patients exhibiting longer LN short-axis length was lower than those of patients exhibiting shorter LN short-axis length \( (P = 0.018) \). Multivariate analyses indicated that high LN \( SUV_{\text{max}} \) was an independent predictor for both DFS and OS \( (P = 0.0231 \) and \( P = 0.0146) \).

Conclusions: LN \( SUV_{\text{max}} \) could be an important predictor of recurrence and survival in patients with cervical cancer.

P-036 Sentinel lymph node biopsy in locally advanced cervical cancer after neoadjuvant intra-arterial chemotherapy

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Objectives: Neoadjuvant intra-arterial chemotherapy (NAC) is used in locally advanced cervical cancers with the aim to decrease the size of the tumor and to allow for less radical surgery. We researched the accuracy of sentinel lymph node (SLN) detection in locally advanced cervical cancer after NAC.

Materials and Methods: Our study started from October 2012 for the patients with locally advanced cervical cancers (FIGO IB1 > 3 cm ~ II B). Patients received 2 cycles of NAC. The regimen was cisplatin 100 mg/body and mitomycin C 10 mg/body. SLN detection was performed by the combined method (Tc-99 m radioactive tracer and blue dye). All of these cases underwent bilateral pelvic lymph node dissection to research the positive and negative predictive value of frozen section analysis.

Results: The SLNs were detected in 6 (75%) of 8 patients. All of the SLN were diagnosed by frozen section and those of 1 patient were positive. All of the diagnosis of frozen section coincided with final pathological diagnosis. Therefore, negative and positive predicting value of the frozen section analysis was 100%.

Conclusions: NAC did not influence the accuracy of frozen section analysis of SLN. We could apply the technique to the patients who underwent NAC.
P-037 The role of clinico-pathological and angiogenic factors endoglin and PECAM-1 as predictors for pelvic lymph node metastasis in cervical cancer

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Background: Several factors are used to predict possible lymph node metastasis in cervical cancer. However, angiogenesis plays an important role in the early steps of metastasis. The aim of the study is to evaluate the role of clinico-pathological and angiogenic Endoglin (CD105) and PECAM-1 (CD31) in predicting pelvic lymph node metastasis in cervical cancer stage IB II A.

Methods: Cross sectional study carried out patients with cervical cancer stage IB II A in 2007-2011 at Gipto Mangunkusumo Hospital, Jakarta. Clinical data were taken from medical record whereas immunohistochemical procedure was done to the same paraflin block specimens. Microvessel density of CD105 and CD31 were calculated according to Weidner procedure.

Results: A total of 92 cases were enrolled in this study. Univariate analysis of Endoglin and PECAM-1 proved to be statistically significant in predicting lymph node metastasis. Odds ratio of microvessel density Endoglin > 8.3 compared to <8.3 is 4.27. Odds ratio of MVD PECAM-1 >24 compared to <24 is 3.54. Multivariate analysis of the clinico-pathological and angiogenic factors proved that only stage, tumor diameter, grade of differentiation, lymphovascular invasion, and Endoglin are the more dominant variables in predicting pelvic lymph node metastasis.

Conclusion: Clinico-pathological factors are important in predicting lymph node metastasis. Angiogenic factors, Endoglin in to a lesser degree PECAM-1 are also significant factors in predicting lymph node metastasis.

Keywords: angiogenesis, cervical cancer, clinico-pathology, endoglin, lymph node metastasis, PECAM-1

P-038 Synaptosomal complex protein 3 is a prognostic marker in cervical cancer

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Synaptosomal complex protein 3 (SCP3), a member of Corl family, is up-regulated in various cancer cells; however, its oncogenic potential and clinical significance has not yet been characterized. In the present study, we investigated the oncogenic role of SCP3 and its relationship with phosphorylated AKT (pAKT) in cervical neoplasms. The functional role of SCP3 expression was investigated by overexpression or knockdown of SCP3 in NIH3T3 cells using both in vitro and in vivo studies. Furthermore, we examined SCP3 expression in tumor specimens from 81 cervical neoplasia patients by immunohistochemistry and analyzed the correlation between SCP3 expression and clinicopathologic factors or survival. Overexpression of SCP3 promoted (MSOffice1) AKT-mediated tumorigenesis in an NIH3T3 cell line model both in vitro and in vivo. Functional studies demonstrated that the C-terminal region of human SCP3 is important for AKT activation and oncogenesis. High expression of SCP3 was significantly associated with tumor stage (P = 0.002) and tumor grade (P < 0.001), while SCP3 activation was positively associated with expression of pAKT in cervical neoplasms. Survival times for patients with cervical cancer overexpressing both SCP3 and pAKT (median, 134.0 months, n = 68) were significantly shorter than for patients with low expression of either SCP3 or pAKT (161.5 months, n = 108) as determined by multivariate analysis (P = 0.020). Our findings suggest that SCP3 plays an important role in the progression of cervical cancer through the AKT signaling pathway, supporting the possibility that SCP3 may be a promising novel cancer target for cervical cancer therapy.
P-039 Treatment outcome after loop electrosurgical excision procedure for pre-malignant cervical lesions: Five year review in a tertiary care government hospital

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Appropriate management of women with cervical intraepithelial neoplasia (CIN) is a critical component of cervical cancer prevention. Cervical intraepithelial II-III are classified as high grade pre-cancerous lesions. There are many treatment options for the pre-cancerous lesions varying from ablative methods to excisional methods. In our institution, excisional therapy includes cold knife conization and loop electrosurgical excision procedure (LEEP). The indications for both procedures are almost similar and the decision is made by the preference of the clinician. Presently, there is no local data in the Philippines regarding the treatment outcome after loop electrosurgical excision procedure (LEEP) for pre-malignant cervical disease.

This study was conducted to determine the incidence of persistence, recurrence and progression of cervical intraepithelial neoplasia, the incidence of underlying invasive carcinoma, the incidence of stenosis and obstetrical complications after LEEP. This is a retrospective descriptive study of patients who underwent LEEP at a tertiary care government hospital in the Philippines. Based on this review series, the cure rate after LEEP was 91% (34 out of 37), the CIN recurrence rate was 9%, the incidence of underlying carcinoma was 2.7%.

P-040 Effectiveness and safety of cryotherapy for treatment of cervical intraepithelial neoplasia

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Background: Asia has the highest burden of Cervical Cancer among the continents, particularly due to lack of organized screening and effective treatment of precancerous lesions. VIA followed by cryotherapy has been developed, but few have directly addressed effectiveness of cryotherapy.

Aim: To determine the effectiveness and safety of cryotherapy for persistent CIN I and CIN II

Material and Methods: Prospective clinical interventional study done at Gynaecological Outpatient Department, Central Women’s Hospital, (Yangon, Myanmar) within a year period March 2012 to April 2013. Eligible women with VIA positive or Pap smear positive cases were investigated with colposcopy and directed biopsies. Histologically proven CIN I (persistent more than 6 months) and CIN II cases were treated with cryotherapy. After 6 months, cure rate and complications were actively followed up.

Results: Among 84 cases of colposcopic biopsies, CIN I was found in 55 (65.48%), CIN II was 20 (23.81%). Microinvasive cancer was 2 cases (2.38%). Total 65 cases: persistent CIN I (45) & CIN II (20) were treated with cryotherapy (double freeze technique) and actively followed up at 6 month. Overall cure rate was 90.90% by the pap smear (90.48% in CIN I, 92.30% in CIN II group). Regarding complications, only one case experienced flushing after procedure, 2 cases had vaginal discharge more than 14 days, 2 had spotting per vagina and 60 cases were free of side effects.

Conclusion: Cryotherapy is effective for CIN I and CIN II with negligible side effects; it is found as the most favoured simple ablative technique.
P-041 Prognostic factors of conization for high-grade cervical lesions, adenocarcinoma in situ, and microinvasive squamous cell carcinoma of the uterine cervix

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Objective: The aim of this study was to evaluate factors predicting post-cold knife conization (CKC) residual disease in cervical intraepithelial neoplasia (CIN 2-3), adenocarcinoma in situ (AIS), and microinvasive squamous cell carcinoma of the cervix (MICA).

Methods: We retrospectively reviewed data from 701 patients (median age 40 years old, range 20-76) with CIN 2-3, AIS, and MICA who underwent CKC between September 2003 and June 2012. We analyzed pre- and post-CKC HR-HPV load measured by Digene Hybrid Capure II. Clinico-pathologic variables, including age, severity of the disease in CKC specimens, glandular involvement, margin involvement, and pre- and post-CKC HR-HPV load, were evaluated as possible predictors of residual disease.

Results: Among the 701 patients, 65 (9.3%) had residual disease demonstrated by colposcopic-directed biopsy and subsequent loop electrosurgical excision procedure or hysterectomy. The patients who demonstrated residual disease were related to age >50 years old (P = 0.001), more severe disease of CKC specimens (P < 0.001), positive ecto- or endo-cervical resection margin (P < 0.001), positive post-CKC HR-HPV load (P < 0.001), and abnormal post-CKC cytology (LSIL or HSIL, P < 0.001). Multivariate analysis demonstrated that abnormal post-CKC cytology (P < 0.001, OR = 107.195, 95% CI = 83.33-137.858), positive post-CKC HR-HPV load (P < 0.001, OR = 106.783, 95% CI = 83.852-96.2056), and positive endo-cervical resection margin (P < 0.001, OR = 85.022, 95% CI = 7.919-912866) were significantly associated with residual disease.

Conclusions: Abnormal post-CKC cytology, positive post-CKC HR-HPV load and positive endo-cervical resection margin could be a significant independent risk factor for developing residual disease after CKC.

P-042 Recurrence of CIN3 in residual uterine cervix of aged women whose vagina is obliterated due to previous therapeutic conization

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A 66-year-old woman (gravida 4, para 3; 1 spontaneous abortion, 2 vaginal deliveries and 1 cesarean delivery) underwent uterine cervical conization for CIN3. A month later, the first postoperative check-up revealed that vaginal atresia due to adhesion in the uppermost part of the vaginal wall prevented appropriate cell sampling from the residual uterine cervix. Afterwards, she dropped out of routine medical follow-up. After 8 years, she returned to our hospital because of worsening leg edema. Ultrasound showed fluid correction in the uterine cavity with partly thickened endometrium, implying some uterine malignancy. Vaginal inspection failed to visualize the uterine cervix. To obtain uterine cytological specimen, needle aspiration and washing of the uterine cavity was performed under the guidance of transvaginal ultrasound. The cytological diagnosis (class IV, atypical squamous epithelial cells) strongly suggested recurrence of CIN3 and total abdominal hysterectomy with bilateral salpingo-oophorectomy was carried out. After uterine excision, vaginal cuff remained undetectable through the abdominal incision. Since postoperative follow-up would require transvaginal cell sampling from the hysterectomized margin, apex of the blind-ending vagina was once incised to establish the communication with pelvic cavity and then closed with interrupted sutures. Conization against atrophic portio vaginalis is likely to cause adhesion of the upper vaginal wall and eventual vaginal atresia that would make postoperative cell sampling from the residual cervix difficult. Thus, we recommend hysterectomy rather than therapeutic conization for CIN3 in aged women.
Laparoscopy and ultrasound guided treatment for refractory uterine cervical stenosis after conization

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Background: One of the complications after conization is cervical stenosis. Effective and reliable treatment options of cervical stenosis are not available to date. We reported a case of refractory cervical stenosis treated by laparoscopy and transrectal ultrasound guided cervical dilatation followed by levonorgestrel releasing intrauterine system (LNG-IUS) insertion.

Case: A 33-year-old biparous woman was diagnosed as CIN 3 during pregnancy, and underwent cold knife conization 3 months after delivery. Histology revealed CIN lesion was completely resected. Two months after conization, she was diagnosed as hematometra due to cervical stenosis. Even though cervical dilatation and drain placement in cervical canal was tried twice, the drain strayed into Douglas cul de sac. The patient was introduced to our hospital, and underwent laparoscopy and transrectal ultrasound guided cervical dilatation and LNG-IUS insertion. Speculum examination revealed uterine cervix had been amputated completely. Ultrasound guided dissection of occluded external os was performed carefully with Kelly forceps until the tips of forceps reached into uterine cavity. After dilatation with Hegar’s dilator, LNG-IUS was indwelled in uterine cavity to prevent re-occlusion. Whole transvaginal procedure was surveyed with laparoscopy to avoid uterine or vaginal perforation. Douglas cul de sac obliteration due to previous failed treatment was lysed laparoscopically. The patient was free of symptoms without recurrence of stenosis.

Conclusion: Laparoscopy and ultrasound guided cervical dilatation followed by LNG-IUS insertion could be a useful treatment option for refractory cervical stenosis after conization.

A case of early uterine cervical cancer with pelvic lymph nodal recurrence 23 years after an initial treatment

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Current treatment trend for early stage uterine cervical cancer changed from radical surgery to less invasive one. In stage IA1, total hysterectomy or cervical conization without pelvic lymphadenectomy is recommended because lymph node metastasis in this stage is rare.

We recently experienced a case of pelvic lymph nodal recurrence of stage IA1 cervical cancer 23 years after primary treatment. A 60-year-old postmenopausal woman, gravida 2 para 2, presented to our hospital with left lower abdominal mass. At an age of 38, she underwent total vaginal hysterectomy for cervical intraepithelial neoplasia grade III at other hospital (re-review of hysterectomy specimen revealed microinvasive lesion).

Pelvic MRI showed bilateral obturator lymph nodal enlargement with partial calcification, and the left mass appeared to involve left external iliac vein. PET-CT demonstrated prominent FDG uptake in both obturator lymph nodes and no significant FDG uptake were detected in other organs. A couple of weeks after her first visit, her left thigh became swollen. CT scan revealed intra venous thrombosis in left external iliac vein, which extended up to left common iliac vein. After prompt heparinization and inferior vena cava filter placement, we performed resection of enlarged pelvic lymph nodes and left external iliac vein. Pathological examination revealed metastatic squamous carcinoma in both obturator lymph nodes which was compatible with recurrence of previous cervical cancer. Concurrent chemoradiotherapy with cisplatin was performed.

This rare case report suggested that long-time follow-up is necessary for early stage cervical cancer.
P-045 Extracervical hysterectomy without preoperative conization is unacceptable in patients with adenocarcinoma in situ diagnosed by cervical punch biopsy/endocervical curettage

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Objective: By examining the chance of unexpected cervical cancer, we aimed to determine whether extracervical hysterectomy without preoperative conization is an acceptable strategy in patients with adenocarcinoma in situ (AIS) diagnosed by cervical punch biopsy or endocervical curettage.

Methods: We retrospectively examined the clinicopathologic characteristics of 20 patients with AIS diagnosed by cervical punch biopsy or endocervical curettage. We investigated the chance of unexpected cervical cancer and detection rate of unexpected cervical cancer by conization. In addition, we attempted to find predictors for unexpected cervical cancer.

Results: Six of 20 patients were finally diagnosed as invasive cervical cancer. Four of 6 patients with invasive cervical cancer had disease more than 1A1. Two of four patients underwent conization and invasive cervical cancer was detected before cancer treatment. However, the other two patients received extracervical hysterectomy without preoperative conization and were indicated for adjuvant radiation. No predictors for unexpected cervical cancer were found.

Conclusion: Patients with AIS diagnosed by cervical punch biopsy or endocervical curettage had high chance of invasive cancer. Therefore, extracervical hysterectomy without preoperative conization is an unacceptable strategy.

P-046 Cervical cancer in pregnancy and postnatal period managed at B.P. Koirala Memorial Cancer Hospital

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Objective: To analyze the clinical characteristics and assess the treatment outcome of cervical cancer during pregnancy and postnatal period.

Methods: Patients with cervical cancer diagnosed during pregnancy and postnatal from 2008 to 2012 in B.P.K.M Cancer Hospital was retrospectively studied. Clinical information, gestational age at diagnosis, histology and stage of disease, treatment options and maternal and child outcomes were collected and analyzed.

Results: Four cervical cancer patients were diagnosed during pregnancy and postnatal period. Age range of the patients was 28-31 years. All three patients diagnosed during pregnancy had locally advanced stage disease; two presented in 1st trimester and one in 3rd trimester. Patients diagnosed in 1st trimester, underwent radiotherapy immediately which resulted in intrauterine fetal demise and spontaneous expulsion after 6 weeks treatment. Intentional treatment delay was done for fetal growth and maturity in the patient diagnosed in 3rd trimester; caesarean section with hysterectomy and pelvic lymph node sampling was performed at 36 weeks delivering a healthy baby. The cervical cancer diagnosed at 4 months postnatal period, had FIGO stage IB1 disease, and underwent radical hysterectomy with pelvic lymph node dissection. Two patients are disease free, one lives with disease and one has died.

Conclusions: Cervical cancers diagnosed during pregnancy were in advanced stage. Principles of treatment of cervical cancer during pregnancy and postnatal period and the treatment outcome are similar to non-pregnant ones.

Key words: cervical cancer, pregnancy, postnatal period, radical hysterectomy, radiotherapy.
P-047  Our surgical form and outcome of early invasive adenocarcinoma of the uterine cervix (FIGO IA1)

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Objective: In Japan, stage IA adenocarcinoma of the uterine cervix was defined as adenocarcinoma with microinvasion confined to the region of the normal endocervical glands, and subtyping was not performed until March 2012. For such a reason, the Japanese definition differed from that used by International Federation of Gynecology and Obstetrics (FIGO), in which stage IA referred to the invasion depth of ≤5 mm. Therefore, the form of hysterectomy for stage IA adenocarcinoma was not standardized clearly in Japan. We heretofore performed simple hysterectomy for stage IA1 adenocarcinoma with or without vessel permeation; the purpose of this study is to evaluate the validity of our surgical form by the surgical outcome, retrospectively.

Methods: From 2005 to 2011, twelve patients with FIGO 1A1 adenocarcinoma diagnosed by cervical conization were treated at Kyushu University Hospital. All patients underwent simple hysterectomy or trachelectomy accompanied by pelvic lymphadenectomy.

Results: The age of the patients ranges from 26 to 70 with a mean of 34 years. The median follow-up period is 38 months, ranging from 20 to 74. No pelvic lymph node metastasis was seen, and no recurrence occurred.

Conclusions: FIGO 1A1 cervical adenocarcinoma has little potential for nodal metastasis or recurrence, so it was thought enough to perform simple hysterectomy or trachelectomy accompanied by pelvic lymphadenectomy.

P-048  Treatment strategies for locally advanced mucinous adenocarcinoma of the uterine cervix

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Impact of radiation therapy on outcomes of patients with locally advanced mucinous adenocarcinoma of the uterine cervix (MAC) remains controversial, especially in human papillomavirus (HPV) non-related cancer which reaches one-third of pure adenocarcinoma in Japan.

To assess the efficacy of radiotherapy and surgery as primary treatment in MAC, we retrospectively reviewed 32 stage IB IIIB MAC patients treated between 2001 and 2010 in our institution. We also conducted immunohistochemical examination with p16\(^{R24A}\) (E6H4) as alternative marker for HPV.

13 patients received radiotherapy (RT group) and 19 patients underwent radical hysterectomy (RH group) as primary treatment. 2-year loco-regional control (LCR) rate and 3-year overall survival (OS) rate in RT vs. RH groups were 46.2% vs. 79.0% (P = 0.03) and 52.8% vs. 77.7% (P = 0.08), respectively. Among p16\(^{R24A}\) positive cases, 2-year LCR rate and 3-year OS rate RT vs. RH groups were 60.0% vs. 100% (P = 0.01) and 80.0% vs. 100% (P = 0.05), respectively. On the other hand, p16\(^{R24A}\) negative cases, all cases of RH group diagnosed as cancer positive or close to surgical margin histologically and 2-year LCR rate and 3-year OS rate of RT vs. RH groups were 200% vs. 37.5% (P = 0.66) and 20.0% vs. 37.5% (P = 0.60), respectively.

For stage IB IIIB patients with MAC, radical hysterectomy may significantly improve LCR and OS compared with radiotherapy, and the tendency was more remarkably observed in p16\(^{R24A}\) positive patients. Special consideration and strategies are needed for the treatment for HPV non-related MAC.
P-049 Clear cell carcinoma of the cervix: The KKII experience from 2000-2010
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**Objective:** To assess the epidemiology, clinical outcomes and prognostic factors of patients with cervical clear cell carcinoma (CCCC) diagnosed in KKII, Singapore from 2000-2010.

**Methods:** A retrospective review of 10 patients diagnosed with CCC at KKII from 2000-2010.

**Results:** Most patients (90%) were diagnosed after the age 30 with mean age of diagnosis was 53.7 years. Abnormal vaginal bleeding or vaginal discharge was the most common presenting symptoms. 7 patients were formally staged and treated at KKII. The stage distribution 29% (n=2) Stage I, 57% (n=4) Stage II and 14% (n=1) Stage IV. The mean follow-up duration was 26 months (range: 2-110 months). The overall survival among patients with Stage I-II disease ranged from 9-110 months. The 2-year overall survival (OS) and the 5-year OS were 43% and 14% respectively for patients with Stage I-II disease (n=6).

**Conclusion:** In the post-DES era, the age distribution may no longer follow the classical bimodal distribution. The clear cell carcinoma histology appears to portend a poorer prognosis. Traditional risk factors such as stage and lymphovascular invasion also influence prognosis. Early stage (Stage I-IIA) CCC can be treated with either surgery or radiation with similar outcomes, although one should bear in mind the small sample size.

P-050 Clear cell adenocarcinoma in the uterine cervix associated with malformation of the uterus
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Clear cell adenocarcinoma (CCAC) of the uterine cervix is a rare disease, which accounts for only 4% of all uterine cervix adenocarcinomas. Cervical adenocarcinoma and genitourinary malformation are indicated as relatively common disorders; however, their coexistence in patients is also reportedly rare. A 33-year-old woman developed cervical clear cell adenocarcinoma in the atretic hemi-cervix of a type-3 communicating uterus and had unilateral renal agenesis. Compared with the unaffected left hemi-cervix, only the tumor-involved glands of the atretic right hemi-cervix contained dilated tubo-endometrial cells. A modified radical hysterectomy, external beam pelvic radiation (50Gy) and 6 course of chemotherapy (medication: cisplatin 75 mg/body, adriamycin 30 mg/body, cyclophosphamide 500 mg/body) was performed after informed consent to receive the therapy was obtained from the patient. The patient tolerated the treatment and did not show evidence of recurrence during the more than 10 years of follow up after the primary therapy. Concerning the prognosis of these cases, it has been reported that CCAC has a greater tendency for delayed recurrence compared to that of squamous cell carcinomas. Several authors have speculated that the biological behavior and prognosis of CCAC are believed to be poorer than those of squamous cell carcinomas and non-clear cell adenocarcinomas. Further clinical follow-up and biological investigation are mandatory for a better understanding of this rare disease.
P-051 Collision tumors of the cervix: A report of three cases and review of literature

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**Background:** Majority of cervical cancers are squamous cell carcinomas, adenocarcinoma and “other epithelial tumors”. The co-existence or collision of these histologic types is rare. A review of management, treatment and outcome and prognosis were presented in the light of recent literature.

**Cases:** Three cases of collision tumors of the cervix in a 10-year review were reported. Diagnosis was made on hysterectomy specimens of women ages between 38 and 62. A history of OCP use was implicated. All underwent radical hysterectomy for an early stage disease. Two were initially diagnosed by cervical punch biopsy with neuroendocrine tumor but on final hysterectomy histopathology revealed collision of adenocarcinoma and neuroendocrine tumor. Immunostaining confirmed a concurrent neuroendocrine carcinoma. The other patient had collision of adenocarcinoma and squamous cell carcinoma from an initial adenocarcinoma on cervical punch biopsy. Due to the presence of poor histologic factors (more than 1/3 stromal invasion, presence of LVSII and a dual histologic type), an adjuvant treatment was instituted. Two of the patients showed no evidence of disease. The most recent case showing good response to treatment.

**Conclusion:** Collision tumors of the cervix are well-established histopathologic entity but diagnosed uncommonly. Poorer prognosis of such tumors requires appropriate therapy in the adjuvant setting after radical hysterectomy for early stage disease. The advent of genetic and molecular analysis may reveal the exact tumorigenesis. Due to its rarity, there still no standard concept on the treatment, however collection of experience on these rare entities may deliver a standard protocol.

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P-052 Results of surgical treatment of cervical cancer at Khmer–Soviet Friendship Hospital, Cambodia

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My name Chhit Maryan, 39 year olds working for Department of Gynecology Khmer–Soviet Friendship Hospital as a medical doctor.

I would like to summarize about **RESULTS OF SURGICAL TREATMENT OF CERVICAL CANCER AT HOSPITAL OF Khmer Soviet Friendship for last 3 years.**

In average we have:

- Total consultation = 868,5765 further consultations with 66% of all consultations.
- Of these 5,765 new patients, 4571 patients or 69% were for gynecologic consultations.
- For these 4,571 new patients, cancer was found in 249 of them to be 54%.
- Among the 249 cases of cancer, 127 patients or 51% had cervical cancer.
- The incidence of cervical cancer among gynecologic consultations was 27%.
- Table 1: Hospitalization for gynecologic cancer patients 249 (33%)
- The most of age Distribution is between 40-50 years olds about 46% in cases that >50 YO: 39% and <50YO: 15%.

**Classification of patients by stage of cancer preoperatively we saw that stage II is the most around 70.55%, (IA, IB, IIa, IIb, IIc) and stage I is 37.14%, (IA, IB, IIa, IIb, IIc) and stage III 2.3%, (IA, IIa, IIb, IIc)
- Circumstances of diagnosis: the most is genital bleeding about 75%, Leucorrhea 12%, abdominal pain 9% and a symptomatic 4%.
- Treatment is hysterectomy after radio chemotherapy which show: Radio-Chemo-brachytherapy 70%, Radio-brachytherapy 15% and Radio-Chemotherapy 9%.
- Types of hysterectomy: 105 case 57 patients hysterectomy with bilateral pelvic lymphadenectomy 48 patients; simple hysterectomy with During the operation: Mean operative time 3 hours
  - Blood loss 300 to 500 ml
  - complications
  - Intraoperative bleeding: 1 case
  - Bowel obstruction after surgery: 1 case
  - Histology of parts after neoadjuvant treatment indicate the most is epidermoid carcinoma is about 62% versus adenocarcinoma only 2%. 8 patients among the 105 patients operated (14.3%) received postoperative adjuvant treatments.
  - The choice of adjuvant therapy based on:
  - Type of neoadjuvant therapy
  - Quality of surgical margin
  - Persistence of residual tumor
  - nodal status
  - Financial status of the patient
- **DISCUSSION**
  - Without neoadjuvant radiotherapy, cervical cancer in stage IA1 and IB2 can be made.
  - The ovaries can be transposed to avoid destruction by postoperative radiotherapy
  - The intraoperative bleeding injury by large vessel diameter classes is an important risk requiring competent surgeons and appropriate instruments
- **CONCLUSION**
  - The survival of cervical cancer is limited. It is very sensitive radio brachytherapy.
  - The hysterectomy and lymphadenectomy is the definitive treatment.
  - For 86 patients who received neoadjuvant treatment before surgery complications are rare.
  - 33 patients have a good prognosis, there is no death.
P-053   **Gynecologic oncology service at Calmette Hospital, Cambodia**

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Calmette Hospital is one of the 4 public hospitals at national level in Cambodia. It has 430 beds and 800 stuffs (medical and non medical) including 48 professors, 82 specialist doctors, 40 general doctors. It is considered as Cambodia’s flagship healthcare centre with constant development and many ongoing projects such as creation of Neuroscience Institute, and National Cancer Center. Calmette Hospital is one of the University Hospitals which receive more than 3000 undergraduate and postgraduate students annually, including foreign students under exchange program.

Our gynecology department consists of 6 doctors specialized in Gynecology Obstetric with completion of at least one year fellowship in France. We provide investigative, treatment and emergency services for a whole range of gynecological condition. For outpatient consultation, we cover all gynecological problems, infertility problem as well as gynecological cancer screening. For surgery, we are able to perform almost all kind of operations such as LEEP, cone biopsy, hysterectomy and myomectomy under laparoscopy, Wertheim radical hysterectomy by laparotomy, and breast cancer surgery. We work cooperatively with experienced oncological surgeons in our hospital. We are relatively young for oncological gynecology and we are constantly looking for further training both locally and oversea in this field.

P-054   **Survival outcome of Hokkaido-method of nerve-sparing radical hysterectomy for cervical cancer**

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**Objectives**: The aim of this study is to evaluate the clinical outcome of nerve-sparing radical hysterectomy (NSRH) comparing conventional radical hysterectomy (CRH).

**Patients and Methods**: During 2000 to 2009, there were 124 cases of cervical cancer patients (FIGO stage IB1, n = 67; IB2, n = 15; IIA, n = 7; and IIB, n = 35) in which Hokkaido method of NSRH was performed. We analyzed the clinical outcomes of them comparing with 121 cases (FIGO stage IB1, n = 61; IB2, n = 7; IIA, n = 10; and IIB, n = 43) of CRH that were performed from 1990 to 2009 in Hokkaido University.

**Results**: Comparison of surgical parameters showed that operative time and resected vaginal length were almost equal. Amount of blood loss was significantly less in NSRH group than in CRH group. Analysis using Kaplan Meier method showed that there was no significant deference in cumulative disease free survival rate between two groups in any FIGO stage of cancer. Overall recurrence rate was 15.3% (19 cases) and 16.8% (20 cases) in NSRH group and CRH group respectively. Among them, local recurrences occurred within the surgical area were found in 13 cases (10.5%) and 9 cases (7.6%) in each group, respectively. Regarding the recurrence rate and site, no significant differences could be observed between two groups. Histology, vaginal invasion and pelvic lymph node status were independent prognostic factors for recurrence in the multivariate logistic regression. Surgical procedure did not affect the recurrence of disease significantly.

**Conclusion**: Hokkaido method of nerve-sparing radical hysterectomy appears to be equally feasible comparing to the conventional radical hysterectomy.
**P-055** Correlation between location of transposed ovary and function in cervical cancer patients who underwent radical hysterectomy

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**Objective:** To investigate the association between the location of transposed ovaries and ovarian function in patients with early cervical cancer (IB1-IIA).

**Methods:** A retrospective study was performed with cervical cancer patients who underwent radical hysterectomy with ovarian transposition at Samsung Medical Center between July 1995 and July 2012. Ovarian function was estimated using serum FSH levels.

**Results:** We identified 31 patients and 21 patients were enrolled in this study. The median age and body mass index (BMI) were 31 years (range, 24-39) and 21.3 kg/m² (range, 17.7-31.2). The median serum FSH level was 7.9 mIU/ml (range, 2.4-143.4). The median location of transposed ovary based on iliac crest was 0.5 cm (range, -2.7-52). As the location of transposed ovary heightened, serum FSH and E2 showed negative (r = -0.151, p = 0.514) and positive correlation (r = 0.337, p = 0.135). In the multivariate analysis, transposed ovarian function, which was assessed by serum FSH levels, was significantly associated with location of transposed ovary (β = -8.1, p = 0.032), concurrent chemoradiotherapy (CCRT) (β = 7.08, p = 0.006) and BMI (underweight: β = -59.93, p = 0.05, overweight: β = -40.62, p = 0.041). There was no significant association between transposed ovarian function and age.

**Conclusions:** There is a significant association between transposed ovarian function and BMI. We suggest that ovary should be transposed as highly as possible for preservation of the ovarian function.

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**P-056** Comparison of laparoscopic versus abdominal radical hysterectomy for bulky (≥3 cm) FIGO stage IB and IIA cervical cancer

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**Objective:** There have been many comparative reports on laparoscopic radical hysterectomy (LRH versus abdominal radical hysterectomy (ARH) for early-stage cervical cancer. However, most of these studies included patients with FIGO stage IA2 and small (tumor size ≤2 or 3 cm) IB1 disease. The purpose of this study was to compare the feasibility, morbidity, and recurrence rate of LRH and ARH for bulky (tumor size ≥3 cm) FIGO stage IB and IIA cervical cancer.

**Methods:** We conducted a retrospective analysis of 88 patients with bulky (tumor size ≥3 cm) FIGO stage IB and IIA cervical cancer. All patients had no evidence of parametrial invasion and lymph node metastasis in preoperative gynecologic examination, pelvic MRI and PET-CT and underwent LRH or ARH between February 2006 and March 2013.

**Results:** Among 88 patients, 40 patients received LRH and 48 underwent ARH. Mean estimated blood loss was 588.0 mL for ARH group compared to 449.1 mL for LRH group (P < 0.001). Mean operating time was similar in both groups (216.5 min in ARH versus 254.5 min in LRH group, P = 0.589). Return of bowel motility was observed earlier after LRH (1.8 versus 2.2 days, P = 0.042). The mean hospital stay was significantly shorter for LRH group (14.8 versus 18.0 days, P = 0.044). There were no differences in histopathologic characteristics between the two groups. Disease-free survival rates were 97.9% in ARH and 97.5% in LRH group, respectively (P = 0.818).

**Conclusions:** LRH might be a feasible therapeutic procedure for management of bulky FIGO stage IB and IIA cervical cancer.
**P-057 Learning curve analysis of laparoscopic radical hysterectomy for gynecologic oncologists**

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**Objective:** Laparoscopic radical hysterectomy (LRH) has become the preferred surgical option over abdominal radical hysterectomy (ARH) in recent years. Many of the recently graduated gynecologic oncologists, therefore, have had little or no experience with ARH during their training period. The purpose of this study was to evaluate the learning curve of LRH for gynecologic oncologists who underwent residency- and fellowship-training in laparoscopic surgery.

**Methods:** We retrospectively reviewed 72 patients with FIGO stage IB cervical cancer who underwent LRH (Piver type III) between April 2006 and March 2013. The patients were divided into two groups (surgeon A group, 42 patients; surgeon B group, 30 patients) according to the surgeon. Operating times were analyzed using the cumulative sum technique.

**Results:** There were no significant differences in clinicopathologic characteristics and perioperative morbidities between the two groups. The operating time decreased with operative experience in both groups (surgeon A Pearson correlation coefficient = -0.508, \( P = 0.001 \); surgeon B Pearson correlation coefficient = -0.397, \( P = 0.030 \)). Approximately 18 cases for both surgeons were required to achieve surgical proficiency for LRH. Multivariate analysis showed that tumor size (\( \geq 4 \) cm) was significantly associated with increased operating time (\( P = 0.010, OR = 7.146, 95\% CI = 1.573-32.469 \)).

**Conclusions:** After completing the residency- and fellowship-training course in laparoscopy but without open counterpart experience, we demonstrate that surgeons can reach an acceptable level of surgical proficiency in LRH after approximately 20 cases.

**P-058 Urinary tract injury during laparoscopic hysterectomy of cervical cancer patients**

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**Objective:** Laparoscopic radical hysterectomy (LRH) became treatment of choice in patients with early cervical cancer in ASAN medical center. Only 54 patients with cervical cancer had abdominal RH during 222 patients underwent LRH in same period. Even every operators who perform LRH in our institute had reached a level of expert, urinary tract injury is still major concern of the operation.

**Methods:**
To determine bladder injury during hysterectomy in cervical cancer patients, a retrospective study of patients with these injuries from June 2011 to June 2013 was done.

**Results:**
The incidence of bladder injury was 2.25% (5/222) for LRH, 27.7% (1/36) for type 1 LAVH, 1.85% (1/54) for RH in cervical cancer patients. There were 2 ureter injury during LRH and 1 injury during RH. Women with bladder injury during LRH were found to have higher BMI (\( p = 0.015 \), more chance to have parametral involvement (\( p = 0.35 \)), more prior surgery (\( p = 0.05 \)). There was tendency to have greater blood loss, bigger tumor size, longer operative times, longer postoperative stays, and more frequent transfusion although statistically insignificant.

**Conclusion:**
The incidence of operative bladder injury during LRH is relatively low. However, even when recognized, these patients experience greater operative and postoperative morbidity. This emphasizes the meaning of surgical technique directed toward minimization of these injuries, and careful pre- and intraoperative surveillance aimed at prevention.
Laparoscopic ovarian subcutaneous transposition following laparoscopic radical hysterectomy: Our surgical technique and assessment of ovarian hormonal function

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When a young female patient is offered radical hysterectomy, we have to think about preservation of ovarian hormonal function. Considering about an adjuvant radiation therapy, we often transpose one ovary away from the radiation area. Generally, one ovary is translocated to right/left paracolic sulcus or subcutaneous antero-lateral abdominal wall.

In the former case, it is difficult to check the transposed ovary, and we can’t find small changes by trans-abdominal or trans-vaginal ultrasound.

In the later case, it is easy to check the ovary by trans-abdominal ultrasound. But some patients feel pain in the transposed side and other feel the tumefaction of transposed ovary. We have undergone ovarian subcutaneous transposition following radical hysterectomy (51 cases ~ 2012).

In these cases, we evaluated preservation of ovarian hormonal function by measuring serum estradiol.

These days, we try to undergo laparoscopic ovarian subcutaneous transposition following laparoscopic radical hysterectomy (17 cases ~ 2012).

We present our procedure of laparoscopic ovarian subcutaneous transposition, and assess the ovarian hormonal function in these cases.

A case of young woman with vaginal carcinoma who underwent fertility sparing treatment with chemotherapy and conservative surgery

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Introduction:
Vaginal carcinoma is a rare disease, representing in 1% in gynecological malignancies. Patients with vaginal carcinoma located in the upper 1/3 vagina are treated according to cervical carcinoma. Here, we report a case of invasive vaginal carcinoma of young woman who underwent the fertility sparing treatment with neo-adjuvant chemotherapy and conservative surgery.

Case:
A 36 year-old woman was referred to our hospital due to atypical genital bleeding. Pelvic examination revealed a polypoid tumor originated from the upper third of the vagina, and the tumor filled the entire vagina. The size of the tumor was 3 × 4 cm, and a biopsy confirmed the pathological diagnosis of squamous cell carcinoma. The serum SCC antigen level was elevated to 63 ng/ml MRI and PET examination demonstrated the tumor in the vagina with high FDG uptake (SUV = 17.33) but showed no metastatic lesion. According to these findings, she was diagnosed with vaginal carcinoma, FIGO stage I, T1N0M0. The patient wished to retain her fertility, and she did not undergo primary radiation therapy, but chemotherapy.

After one course of chemotherapy consisted of irinotecan and nedaplatin, the most of the tumor spontaneously dropped out of the vagina. After four courses of chemotherapy, no tumor was identified by macroscopic or imaging examination in the vagina, although VAIN 3 was pathologically proved by biopsy. Partial vaginectomy was carried out and the pathological diagnosis was VAIN 3. After operation, two more courses of the same chemotherapy were added. Fourteen months after operation, she has no evidence of disease.
Leiomyosarcoma arising in the uterine cervix is an exceedingly rare tumor accounting for less than 1% of cervical malignancy and 12.5% of cervical sarcomas. Approximately 30 cases of primary cervical leiomyosarcomas have been reported in the literature and none of them were diagnosed during pregnancy. This is the first reported case of leiomyosarcoma of the cervix in association with pregnancy to the author’s knowledge. A 40-year-old, gravida 6 para 5, Filipino woman, 17 weeks and 3 days pregnant consulted a private obstetrician due to a 4-month history of post-coital bleeding. She was subsequently referred to our institution due to a finding of a cervical mass. On examination, the cervix was completely converted to a bulky, solid, nodular, polypoid mass measuring 12×12 cm occupying and obliterating the vaginal canal up to the lower third of the vagina. Biopsy of the mass with immunohistochemistry showed leiomyosarcoma of the cervix. She underwent extracapsular hysterectomy with bilateral salpingo-oophorectomy, bilateral lymph node dissection and para-aortic lymph node sampling. On histology, the tumor was very cellular with spindle shaped cells arranged in fascicles with marked pleomorphism, atypia, scanty cosinophilic cytoplasm, >10 mitosis per high power field and tumor cell necroses. She was advised postoperatively to receive adjuvant chemotherapy in the form of doxorubicin. Due to its rarity, little is known of its appropriate modality of treatment. Hence, management is extrapolated from their uterine counterparts consisting of hysterectomy. Prognosis is poor regardless of adjuvant treatment given due its high rate of relapse and recurrence.

Efficacy of neoadjuvant chemotherapy in patients with stage IB uterine cervical cancer

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Background and aims: Neoadjuvant chemotherapy was performed in patients with Stage Ib cervical cancer to improve the survival rate. Its efficacy was retrospectively evaluated.

Methods: Neoadjuvant chemotherapy was performed in 7 patients diagnosed with Stage Ib cervical cancer. Tumor sizes before and after treatment were compared by MRI and changes in tumor marker (SCC antigen) values were examined. Moreover, histopathological examination was conducted postoperatively.

Results: Six patients are alive without disease, while one experienced recurrence which responded to radiotherapy and is also alive without disease. MRI showed tumor size reductions in all patients, with tumors nearly disappearing in 4 patients. Tumors diminished to 40% or less in 3 patients. The SCC antigen values before and after chemotherapy were compared in 5 patients; abnormal values nearly normalized in all 5 patients. Radical hysterectomy was performed in all patients and histopathological examination was conducted postoperatively. Of the 4 patients in whom tumors disappeared on MRI, cancer tissues disappeared in 1 histopathologically, whereas viable cancer tissues remained in the other 3.

Conclusions: In patients with Stage Ib cervical cancer, it may be possible to perform cytoreductive surgery following neoadjuvant chemotherapy. It may also be reasonable to select neoadjuvant chemotherapy and conization in patients who wish to receive fertility-preserving treatment.
**P-063** Genomic profile may predict the efficacy of neo-adjuvant chemotherapy for cervical cancer patients

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**Introduction:** Neo-adjuvant chemotherapy (NAC) using platinum and irinotecan (CPT-11) followed by radical excision has been shown as a valid treatment for locally advanced squamous cervical cancer (SCC) patients, but it is also true that there is few rescue therapy for NAC-resistant cases. It is, therefore, keen to establish a method to predict the efficacy of NAC. Genomic analysis has been recently developed especially in tailor made medicine to figure out what kind of therapy would be suitable in each patient. The aim of this study is to establish a bioinformatical method to predict NAC efficacy based on patient's genomic information.

**Methods:** UGT1A1 genotypes were analyzed for 23 SCC cases (Iib2 n = 8, Iib n = 15), and gene expression microarray analysis of excised tumors was carried out for 12 cases under protocols approved by the institutional review board.

**Results:** Tumor shrinking rate after NAC was significantly higher in patients with UGT1A1 polymorphism (p = 0.027). Pathway analysis using Gene Set Enrichment Analysis revealed Glutathione Metabolism Pathway (GMP) was more activated in NAC-resistant patients (p<0.001), and there was a positive correlation between CPT-11 IC50 values and predictive scores of GMP activation (r = 0.320, p = 0.016) in a web-published dataset of 57 SCC cell lines.

**Conclusion:** These results exhibited the potent of this bioinformatical approach to predict NAC efficacy prior to treatment in SCC patients although further analysis is still mandatory for platinum sensitivity.

**P-064** Neoadjuvant intraarterial chemotherapy using an original four-lumen double-balloon catheter for locally advanced uterine cervical cancer

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**Background and aims:** We report the therapeutic potential survival rate, and toxicity of neoadjuvant intraarterial chemotherapy (NAIAC) using an original four-lumen double-balloon (4L DB) catheter followed by radical hysterectomy and/or radiotherapy or chemotherapy in patients with locally advanced uterine cervical cancer.

**Methods:** Forty-nine patients with stage IB-IIB cervical cancer were treated with NAIAC with included cisplatin (75mg/m2 day1 and 8) and irinotecan (70mg/m2 day 1 and 8) for two courses every 21 days followed by radical hysterectomy.

**Results:** The median follow-up among survived patients was 26 months. The median tumor size was 44 mm. Among 49 eligible patients, 22 had a complete response (CR 45%) including 4 with a pathologic CR (8.1%). Twenty-five patients had a partial response (51%), and stable disease was observed in only 2 patients (4.1%). Two years progression-free survival rate and 2-year survival rate were 80% and 92%, respectively. These rates were 58% and 52% in 19 patients with lymph node metastasis. In contrast, there were not observed recurrent or death of disease among 27 patients without lymph nodes metastasis. Thirty-four (69%) patients had grade 3 or 4 neutropenia.

**Conclusion:** Our results with NAIAC using 4L DB catheter in locally advanced cervical cancer indicates beneficial effects on primary lesions and improves progression-free survival. These findings were obvious in the patients without lymph nodes metastasis.
A comparative study on neoadjuvant chemotherapy for cervical cancer at high risk of relapse: A retrospective single-center pilot study

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Background and aims: There remains controversial whether neoadjuvant chemotherapy (NAC) improves outcomes for cervical cancer patients with poor prognosis. We examined the effectiveness of NAC for factors concerning recurrence.

Methods: This was a retrospective study that included 77 consecutive cervical cancer stage IB-IIIB patients (having tumor diameter larger than 3cm): 33 who underwent NAC (transcatheter arterial infusion chemotherapy) followed by radical surgery, 44 who underwent radical surgery, between 2004 and 2011. We investigated the effectiveness of NAC for factors concerning recurrence, which were pelvic lymph node metastasis, parametral invasion and tumor diameter larger than 5cm. The main outcome measures were disease free survival (DFS). The secondary outcome was overall survival (OS).

Results: The drugs infused for NAC were mitomycin C (10 mg/body) and cisplatin (100mg/body), they were infused 1-3 courses every 4 weeks via the bilateral internal iliac arteries. The NAC group was significantly higher than control in parametral invasion (p=0.025), tumor diameter larger than 5cm (p=0.035) and no postoperative treatment (p=0.028) apart from age, pelvic lymph node metastasis and histology. With a median follow-up period for survivors of 49 months (range 5-103 months), the 7-year DFS was higher the NAC group than control (79.6% vs 62.5%, p=NS), and restricted pelvic lymphnode metastasis in patients it was 23% higher the NAC group (n=12) than control (n=11) (90.9% vs 67.7%, p=NS).

Conclusions: Although it was not statistically significance, NAC followed by radical surgery may improve long-term clinical outcome for cervical cancer at high risk of recurrence, particularly for pelvic lymph node metastasis.

Comparison of neoadjuvant intraarterial chemotherapy versus concurrent chemoradiotherapy in patients with stage IIIB uterine cervical cancer

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Background: The purpose of this study was to compare the long-term survival of patients with stage IIIB squamous cell carcinoma of the cervix treated with neoadjuvant intraarterial chemotherapy (IA-NAC) versus those treated with concurrent chemoradiotherapy (CCRT).

Methods: We retrospectively reviewed the clinical records of 38 patients with stage IIIB squamous cell carcinoma of the cervix admitted between January 1994 and December 1999 who received IA-NAC followed by abdominal radical hysterectomy (ARH) or radiotherapy (RT). IA-NAC consisted of bilateral infusion via the internal iliac artery of cisplatin, bleomycin, and pirarubicin for 2-3 courses. A historical control group of 64 patients who underwent primary CCRT from January 2000 to September 2007 was used for comparison.

Results: In the IA-NAC group, 12 patients (31.6%) with operable tumors underwent ARH, and the remaining 26 patients (68.4%) received RT. The response rates were 86.8% (12 complete response + 21 partial response) for IA-NAC and 98.4% (26 complete response + 37 partial response) for CCRT (p=0.077), respectively. The 5-year overall survival and disease-free survival rates were 62.4% and 44.5% for IA-NAC and 51.1% and 46.9% for CCRT (p=0.247 and 0.776), respectively. The 5-year overall survival and disease-free survival rates were 75.0% and 58.3% for the patients receiving IA-NAC followed by ARH, and 55.3% and 37.5% for the patients receiving IA-NAC followed by RT (p=0.368 and 0.262), respectively.

Conclusions: In the present study, IA-NAC followed by ARH or RT and primary CCRT showed similar survival rates for stage IIIB squamous cell carcinoma of the cervix.
Surgical outcomes of fertility-sparing radical abdominal tracheectomy for early-stage uterine cervical cancer

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Objectives: Radical abdominal tracheectomy (RAT) is a fertility-sparing surgical procedure for uterine cervical cancer. The aim of this study is to evaluate surgical outcomes of RAT for early-stage uterine cervical cancer.

Methods: The patients with FIGO stages IA1 to IB1 squamous cell carcinoma of less than 2 cm were enrolled in this study and evaluated prospectively between 2002 and 2013. All of them desired to preserve fertility and gave their written informed consent before entry into this study.

Results: Forty-two patients were enrolled in this study. The median age was 32 years old. The median operating time was 305 minutes (range, 233–611 minutes). The median surgical blood loss was 818 mL (range, 250–3981 mL). The median follow-up periods were 29.9 months. Three patients relapsed. Two of them were died. Four patients got pregnant at the time of this report. Two gave Cesarean birth to a newborn of a gestational age of 33 and 36 weeks, respectively. One selected artificial abortion at first trimester. The other is ongoing at this time.

Conclusion: RAT took longer time for operation and lost more blood compared with radical hysterectomy. RAT with a low recurrence rate (7.1%) is a feasible operation for the patients with early-stage cervical cancer who wish to preserve fertility. A goal of RAT is to have a baby in safety. More than a half of our patients were received RAT in recent three years. Further follow-up is required to assess fertility-sparing efficacy of our method.

Fertility-preserving options for women affected by bulky cervical cancer: Neoadjuvant chemotherapy followed by radical tracheectomy

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Recently, uterine cervical cancer in the young generation has been increasing in Japan. As Japanese females tend to get married later in life during the past several decades, it is not rare that cervical cancer patients require fertility sparing surgery. Although radical tracheectomy has been developed to preserve reproductive function, the case with tumor size larger than 2 cm in diameter has been considered as a contraindication because of a higher risk of recurrence.

We first tried to perform intra-arterial neoadjuvant chemotherapy to patients with large tumor who strongly desired uterine preservation, when the tumor invasion seemed slight, the tumor histology wasn’t poor, lymph node metastasis were denied. We report the cases with tumors of 3.3 to 4.6 cm performed intra-arterial neoadjuvant chemotherapy followed by radical tracheectomy.

Between May 2006 and October 2012, 6 patients (median age 30.5 years, range 22–36) with bulky cervical tumor were scheduled for fertility sparing treatment. Five patients had squamous cell carcinoma and one patient had verrucous carcinoma. Deep stromal invasion and lymphatic space invasion were found in 2 patients. They were administered adjuvant chemotherapy, but one of them had recurrence during chemotherapy and finally died of disease. After a mean follow up of 33 months (range 11–88), no relapses were found in the other patients. One patient had successfully conceived with IVF/ET procedure and got a baby at 28 weeks of gestation. Neoadjuvant chemotherapy followed by tracheectomy may be a valuable option for women with bulky-sized cervical cancer who wish to preserve their fertility.
### P-069 Successful delivery after radical tracheectomy and adjuvant chemotherapy for invasive uterine cervical cancer: The first case report

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A 31-year-old G1P0 woman diagnosed as FIGO stage Ib 1 cervical cancer (squamous cell carcinoma, non-keratinizing type), underwent abdominal radical tracheectomy (ART) on Nov. 14, 200X. Simultaneously, cervical cerclage with nylon thread was placed to prevent premature delivery in future pregnancy. Postoperative histological findings revealed no lymphnode metastasis, but positive left parametral invasion: thus three courses of adjuvant chemotherapy with PTX and CBDA were performed. No recurrence had been detected, and she became pregnant spontaneously in June, 200X + 4. She was admitted to our hospital at 18 weeks of gestation. Frequent uterine contraction was observed from around 22 weeks of gestation, and she had complete bed rest and tocolysis. The membranes ruptured at 32 weeks and 4 days, and an emergency cesarean section was performed on that day. A 1822g premature female baby was born, with Apgar scores of 8 and 9 at 1 and 5 min. respectively.

This is the first case in the world in which cervical cancer patient was treated with adjuvant chemotherapy after ART, who subsequently conceived and had a successful delivery. An eager desire for fertility, non-particular histological type, mainly exophytic tumor growth, and no lymph node metastasis are the indication for ART at our hospital. In this case, more advanced lesion was revealed unexpectedly after surgery. In other reports, radiation therapy is often administered as adjuvant therapy, with which fertility will be lost. This case indicates the possibility of sparing fertility by adjuvant chemotherapy instead of radiation after ART.

### P-070 Role of GnRH agonist in Bcl-2/Bax expression ratio, follicle development and follicle atresia in rattus norvegicus ovarium with cyclophosphamide

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**Background**: In Cancer Management, chemotherapy increases the survival rate but also decreases the quality of life. Chemotherapy can cause premature ovarian failure. Cyclophosphamide is one of chemotherapy agents that is gonadotoxic, 42.77% premenopausal women may have POF after cyclophosphamide administration. The use of GnRH agonist in combination with chemotherapy may decrease the incidence of POF by activating GnRH receptor in granulosa cell and prevents apoptosis. There is no research to see the effectiveness of combination GnRH agonist and chemotherapy in preventing apoptosis.

**Objective**: Analyze the relationship of GnRH agonist in the apoptosis ratio expression Bcl-2/Bax, follicle atresia and follicle development in *Rattus norvegicus* post cyclophosphamide.

**Methods**: A research was done in 32 *Rattus norvegicus* which divided into 2 groups, cyclophosphamide with placebo (P0) and with GnRH agonist (P1). Cyclophosphamide was given for 4 days. GnRH agonist or placebo was given at the first day after cyclophosphamide administered. Ovarium specimen stained with Hematoxylin- Eosin and immunohistochemistry.

**Results**: Bcl-2/Bax expression in P1 was higher than P0 (\(p = 0.017\)). Follicle atresia count was lower in P1 (\(p = 0.001\)). Primordial follicle was lower in P0 (\(p = 0.028\)). Primary follicle in P1 was higher (\(p = 0.003\)). But the secondary and tertiary follicle were not matched with the hypothesis, secondary follicle in P1 was lower (\(p = 0.251\)) and tertiary follicle P1 was lower (\(p = 0.004\)).

**Conclusion**: GnRH agonist can decrease the apoptosis in granulose cell of *Rattus norvegicus* exposed with cyclophosphamide. But whether GnRH agonist does only suppress apoptosis in certain follicle still remain a question.
Multi-institutional phase II clinical study of extended-field concurrent chemoradiation therapy for locally advanced cervical cancer in east and southeast Asia

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Purpose: Because patients with locally advanced cervical cancer with positive pelvic lymph nodes (PLN) potentially have a high risk of para-aortic lymph node (PALN) metastasis, prophylactic PALN radiation therapy may decrease the rate of distant metastasis and improve the survival rate. A multi-institutional Phase II clinical study of prophylactic extended-field concurrent chemoradiation therapy for locally advanced cervical cancer with positive PLN was conducted in east and southeast Asia as a project of the FNCA.

Methods: Patients with Stage IIB/IIIIB squamous cell carcinoma of the uterine cervix, with positive PLN, and without para-aortic metastases were eligible for this trial. Radiation therapy consisted of extended-field external beam radiation therapy and high-dose-rate intracavitary brachytherapy. Five cycles of weekly cisplatin (40 mg/m²) were administered during the course of radiation therapy.

Results: Between March 2005 and October 2012, 79 patients were evaluable in this study. The number of patients with stage IIB and IIIB disease were 46 and 33, respectively. Median follow-up was 27 months. Fifty-six of 79 (71%) patients received 4 or 5 cycles of chemotherapy. Five of 79 (63%) patients showed local recurrences and 13 (16%) patients had distant metastases. The 2-year local control progression-free survival and overall survival rates for all patients were 95%, 74% and 89%, respectively. There was no Grade 3 or higher late toxicity except one case (rectum: Grade 3).

Conclusion: These results suggested that prophylactic extended-field CCRT would be effective and safe for locally advanced uterine cervical cancer with positive PLN.
P-073 Dosimetric impact of adaptive re-planning for frac- tionated image-guided intracavitary brachytherapy in cervical cancer

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Purpose: Intracavitary brachytherapy (ICBT) in cervical cancer usually deliver in several fractions to avoid normal tissue complication. Image-guided ICBT (IG-ICBT) has been applied recently replacing the 2D approach based on conventional radiography, and allows optimizing ICBT based on inter-fractional variations of a target and normal tissues. The aim of this study is to evaluate the efficacy of adaptive re-planning for each IG-ICBT fraction in our institution.

Methods: Twelve cervical cancer patients who underwent IG-ICBT were analyzed. We prescribed 25-28 Gy to Manchester point A in 5-6 fractions using ICBT based on each computed tomography (CT) image taken before the treatment combined with whole pelvic external body irradiation (30.6-36 Gy). We calculated the dose distribution of ICBT in two ways. ICBTplans were prescribed same dose to Manchester point A on each CT by using the same loading pattern in the first plan. ICBTplans were fully optimized based on each CT.

Results: The averaged dose covered by more than 90% of the high-risk clinical target volume (CTV) in total equivalent dose in 2 Gy fractions (EQD2) was 65.6 Gy with ICBTnorm and was 66.1 Gy with ICBTnorm (p = 0.12). The averaged dose in total EQD2 delivered to 2 cc (D2cc) of the rectum, bladder, and sigmoid were 51.1 Gy, 65.9 Gy, and 52.6 Gy for ICBTnorm and 49.6 Gy, 65.3 Gy, and 52.1 Gy for ICBTnorm, respectively. The averaged D2cc of the rectum was significantly decreased with ICBTnorm (p = 0.03).

Conclusion: Adaptive IG-ICBT for each fraction had contributed to the further rectal dose reduction while achieving comparable CTV coverage.

P-074 Prognostic factors for predicting recurrent disease in patients with FIGO stage IB-IV cervical cancer treated by primary concurrent chemoradiation

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Objective: The aim of this study was to evaluate risk factors associated with recurrent or persistent disease in patients with FIGO stage IB-IV cervical cancer treated by primary concurrent chemoradiation.

Methods: Between April 2001 and January 2013, 224 patients with FIGO stage IB-IV cancer of the uterine cervix were analyzed retrospectively. Weekly concurrent cisplatin chemotherapy with a dose of 40 mg/m² was used in all patients. Irradiation consisted of external beam pelvic radiation and intracavitary brachytherapy. We investigated survival and recurrence rates, and evaluated prognostic factors affecting disease recurrence after primary chemoradiation.

Results: In univariate analysis, prognostic factors influencing disease recurrence were FIGO stage, SCC-Ag level, Cyfra 21-1 level, tumor size ≥5 cm, advanced parametral involvement (score ≥6), hydronephrosis, pelvic lymphadenopathy, and para-aortic lymphadenopathy. Among them, pretreatment SCC-Ag ≥8.85 ng/mL, para-aortic lymphadenopathy, and advanced parametral involvement were found to be independent prognostic factors for disease-free survival in multivariate analysis. With a median follow-up of 38.5 months (3-133 months), disease recurrence occurred in 44 patients (19.6%) and 26 patients (11.9%) died during follow-up. 5-year disease-free survival were 83.4%, 82.3%, 77.8%, and 52.0% for FIGO stage IB-IIIA, nonbulky IIIB, bulky IIIB, and III, respectively.

Conclusion: Pretreatment SCC-Ag ≥8.85 ng/mL, para-aortic lymphadenopathy, and advanced parametral involvement were significant prognostic factors affecting disease recurrence. The optimal radiation treatment dose for parametrium and metastatic para-aortic lymph nodes in cervical cancer patients should be determined to prevent disease recurrence.
**P-075** mTOR over-expression is associated with radio-resistance in cervical cancer

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mTOR is an important factor for cell proliferation. It is reported that mTOR overexpression is correlated with poor prognosis in many cancers. We examined mTOR expression in cervical cancer and association with clinical pathological findings. 51 patients were examined about mTOR expression by immunohistochemistry. 38 patients were treated with concurrent chemoradiotherapy, 8 patients were treated with hysterectomy and 2 patients were treated with chemotherapy as main treatment. mTOR overexpression was recognized in 35 (69%) patients. The frequency of parametrial invasion and lymphnode metastasis in mTOR positive and negative were 26/35 (74%) versus 6/16 (38%) (p = 0.012) and 18/35 (51%) versus 2/16 (13%) (p = 0.008). In 38 cases treated with radiotherapy, mTOR overexpression was seen in 28 cases (74%). Averages of tumor diameter in mTOR positive and negative cases were 4.7cm and 5.0cm respectively (n.s.). There were 9 local recurrences, which were all mTOR positive and treated with chemoradiotherapy including small tumors (0, 3, 3.5cm). It is suggested that mTOR overexpression promotes lymphnode and parametrial metastasis and is associated with radio-resistance. In case of mTOR overexpression, we need to consider treatment by hysterectomy or usage of mTOR inhibitor at chemoradiation, and control of mTOR expression is important in treatment of cervical cancer.

**P-076** HPV DNA titer before therapy as histopathology response predictor in cervical cancer patients stadium IIB/IIIB who undergo chemoradioation

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**Background:** The persistence of HPV in cervical cancer lesion is related to recurrence. Studies regarding elimination of HPV in cervical cancer and persistent HPV after therapy showed poor response to therapy and higher incidence of recurrence compared to tumor with eliminated HPV. In aforementioned studies persistence was proven by finding the DNA copy of HPV without considering the level of HPV titer.

**Aim:** To proof that HPV DNA titer before therapy can be used as histopathology response predictor in cervical cancer stadium IIB–IIIB

**Design:** This is a pre and post test and a prospective cohort without control research

**Method:** This research was done in Kariadi Hospital Semarang with cervical cancer stage IIB–IIIB; they were tested for HPV DNA titer using HC-II. After chemoradiation, HPV DNA titer test was repeated and cervical biopsy was done to assess the histopathologic response.

**Result:** We obtain 31 patients who underwent treatment in Kariadi Hospital Semarang gynecology inpatient ward and polyclinic. Of 31 patients, 27 complete their chemoradiation course. We found the lowering of HPV DNA titer level after chemoradiation (155 Rh/cutoff) compared to before chemoradiation (433.06 Rh/cutoff). Patients who well response had higher DNA HPV titer (547.9 Rh/cutoff) compared to those who moderately or poorly (268.9 Rh/cutoff). With titer cutoff point of <57.55 we can predict the moderate-poor histopathologic response with sensitivity of 100%, specificity of 61.9% with positive predictive value of 429 and negative predictive value of 100.

**Conclusion:** The DNA HPV titer before chemoradiation can be used in predicting response to therapy.
**P-077 Early and late stage small cell neuroendocrine carcinoma of the cervix: Experience with docetaxel-oxaliplatin and radiation**

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Cervical cancer is the second most common cancer among women worldwide and accounting for 22.5 cases per 100,000 women in the Philippines. The standard of treatment for both early and late stage cervical cancer is concurrent radiotherapy and chemotherapy with an overall 5 year survival rate ranging from 44-86%. The most common histologic type is squamous cell carcinoma followed by adenocarcinoma and rare types includes clear cell, glassy cell and neuroendocrine carcinomas. It is very important to determine the specific histologic type because other rare types are highly aggressive and has a propensity for rapid local and widespread metastasis even at their early stage, thus the considered standard treatment for cervical cancer may not be the optimal therapy. The small cell neuroendocrine carcinoma (SCNEC) comprising less than 5% of cases provides a therapeutic challenge for the gynecologists because it appears to have the poorest prognosis and is characterized by frequent early nodal and distant metastasis. Currently, there is no accepted standard treatment for SCNEC.

Recently, we encountered cases of two women affected with early and late stage SCNEC of the cervix, the former was a 41 years old woman diagnosed with SCNEC FIGO stage IB1 treated with radical surgery followed by adjuvant chemotherapy using Docetaxel and Oxaliplatin and extended field radiotherapy while the latter was a 40 years old woman diagnosed with SCNEC FIGO stage IIIB treated with chemotherapy using the same regimen with pelvic EBRRT and brachytherapy. Both have good clinical outcome with acceptable toxicity with this mode of treatment.

**P-078 Combination of irinotecan (CPT-11) and nedaplatin (NDP) for recurrent patients with uterine cervical cancer**

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**Background:** The clinical activity of combination of irinotecan (CPT-11) and nedaplatin (NDP) for recurrent patients with uterine cervical cancer was evaluated retrospectively.

**Methods:** Intravenous CPT-11 was given 60 mg/m2 (day 1, 8, 15) followed by NDP 80 mg/m2 (day 1) every 4 weeks.

**Results:** According to the medical records, 59 cases were received this regimen since 2000 to 2012. Median age was 57 years (range: 29-80), and performance status (PS) of the patients was 38 cases for PS 0, 20 cases for 1, one case for 2, respectively. Clinical stage was as follows: 15 cases of stage Ib1, 10 case of Ib2, 4 cases of Iia, 14 cases of Iib, 10 cases of IIIb, and 6 cases of IVb. There were 53 cases of squamous cell carcinoma and 6 cases of adenocarcinoma. About hematological toxicity of grade 3 or more, neutropenia, leukopenia, and febrile neutropenia were observed in 79.3%, 96.5%, and 13.7%, respectively. About non-hematological toxicity, vomiting, appetite loss, arthralgia, and distraction were observed in only one case, respectively, and as a result, in 15 cases chemotherapy was not completed. Among 26 cases with clinically evaluable lesions, there were 7 complete responses (CR), partial responses (PR), 7 stable diseases (SD), and 9 progressive diseases (PD), and clinical response rate was 38.4%. Median progression-free survival was 7 months (0-38 months).

**Conclusion:** Combination of CPT-11 and NDP seems to be active for recurrent uterine cervical cancer patients.
P-079 The utility of platinum-free interval in treatment for recurrent cervical cancer with prior platinum-based chemotherapy

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Objective: The purpose of this study was to determine whether the platinum-free interval (PFI) was a predictive indicator in second-line treatment of cervical cancer in patients who had undergone prior platinum-based chemotherapy.

Methods: In this retrospective study, we examined the clinical records of patients with recurrent or metastatic cervical cancer who had received platinum-containing combination regimens as second-line chemotherapy. All patients had received prior platinum-containing chemotherapy or concurrent chemoradiotherapy with CDDP alone or Paclitaxel-CDDP (TP). The chemotherapy regimens included paclitaxel and carboplatin (TC), docetaxel and carboplatin (DC), irinotecan and cisplatin (CPT-11/CDDP), and irinotecan and nedaplatin (CPT-11/NPD).

Results: The overall response rate to second-line chemotherapy was 258%. Seven patients achieved a complete response and 17 a partial response. The median progression-free survival (PFS) was 5.1 months, and median overall survival (OS) was 13.5 months. The response rate was 12.5%, 14.2%, 20.0%, 22.2%, and 55.0%, and median PFS was 4.0, 5.1, 4.4, 5.8, and 7.4 months, and median OS was 10.2, 14.4, 11.9, 16.3, and 19.7 months when PFI was within 3 months, 3 to 5 months, 6 to 11 months, 12 to 23 months, and over 24 months, respectively. Age (>50), size (>3 cm), prior radiotherapy, and PFI (>24 months) were identified as prognostic factors in the multivariate analysis for PFS and OS.

Conclusions: The results indicate that a PFI of over 24 months is the discriminating point between platinum-sensitive and platinum-resistant cervical cancer.

P-080 Cisplatin plus oral topotecan efficacy in recurrent, persistent or metastatic cervical cancer

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Purpose: Cervical cancer was the second most common gynecologic malignancy in Thailand, with the mortality rate around 50%. Chemotherapy had proven to be palliative treatment of recurrent, persistent and metastatic cervical cancer. GOG 179 demonstrated the survival benefit of cisplatin plus topotecan in intravenous form (response rates 27%). In this study we undertook cisplatin plus oral topotecan in recurrent, persistent or metastatic cervical cancer, evaluated response rate, survival and determined toxicities and quality of life (QOL) of the patients among this regimen.

Procedures: 20 eligible patients were allocated to receive cisplatin 50 mg/IV day 1 plus oral topotecan 1.15 mg/day 1 to 3 every 3 weeks. Survival was the primary end point; response rate and progression free survival (PFS) were the secondary end points. QOL data were reported separately.

Results: 20 patients had median overall survival of 27.5 months (7–107 months), and median PFS of 5.5 months (2–25 months). The response rate was 65% (complete response 25%, partial response 40%). Grade 3/4 hematologic toxicities were 25% and grade 3/4 nausea and vomiting were 10%.

Conclusions: This clinical phase II study demonstrated the survival advantage and response rate of cisplatin plus oral topotecan regimens that was not inferior to GOG 179.
P-081  S-1/oxaliplatin (SOX) therapy in recurrent adenocarcinoma of the uterine cervix: A pilot study

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Background:
In adenocarcinoma of the uterine cervix, there are few studies and therapies with high evidences as yet lacking. We examined the efficacy and safety of S-1/oxaliplatin (SOX) therapy in recurrent adenocarcinoma of the uterine cervix.

Patients and methods:
10 patients orally administered S-1 at a dose of 80-120 mg/body/day for 14 days and intravenously administered oxaliplatin at a dose of 100 mg/m² on day 1 in a treatment cycle of 21 days. We examined antitumor response, adverse events, PFS, and OS.

Results:
The histological type was mucinous adenocarcinoma in all patients. A total of 54 treatment cycles were administered; the median number of cycles per patient was 5.5, and antitumor response was CR in 1 patient, PR in 5, and SD in 4. The overall response rate was 60.0%, while the disease control rate was 100%. In the total 54 cycles, grade 3 or more severe hematoxicities were leukopenia in 11 cycles (20.4%), neutropenia in 8 (14.8%), thrombocytopenia in 2 (3.7%), and anemia in 8 (14.8%). As non-hematologic toxicities, grade 2 fatigue was observed in 4 cycle (7.4%), and diarrhea in 2 (3.7%). Although adverse events resulted in postponement or starting the next course in 9 cycles (20.5%). A dose reduction was observed in 2 cycles. The median PFS was 4 months, and the median OS was 7.5 months.

Conclusion:
The efficacy and safety of SOX therapy were indicated. SOX therapy is feasible for recurrent adenocarcinoma of the uterine cervix. This is the first report in the world-wide. It might be possible for SOX therapy to improve the outcomes of the patients with adenocarcinoma of the uterine cervix.

P-082  Impact of new oncolytic HSV therapy for cervical cancer

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Background and aims:
The incidence and mortality of cervical cancer in the world was approximately 530,000 and 275,000 in 2008. The use of oncolytic herpes simplex virus type 1 (HSV-1) is a promising strategy for cancer treatment. Accumulating evidence indicates that, aside from the extent of replication capability within the tumor, the efficacy of an oncolytic HSV-1 depends on the extent of induction of host antitumor immune responses. We analyzed therapeutic potential of third-generation oncolytic HSV-1 termed T-01 for cervical cancer in mouse model.

Method:
1) In vitro, we investigated cytotoxicity reaction of human and mouse cervical cancer cell lines (TC-1, SKG-IIIa, CaSki, HeLa).
2) In vivo, we analyzed TC-1 cell lines in immune-competent models and HeLa cell lines in immune-deficient models.

Animals were challenged with a lethal dose of TC-1 or HeLa, 17 days after the first intratumoral (i.t.) administration of T-01 was performed. i.t. of T-01 was performed 4-5 days interval total 6 times.

Results:
T-01 has great cytotoxicity for human and mouse cervical cancer cell lines. In addition, our results indicate that administration of T-01 produced greatest antitumor effects for both cancer models. Furthermore, in immune-competent models, we found an increase of the number of cancer specific CD8+ T-cell in spleen of mice treated with T-01 in comparison with the control treated mice.

Conclusion:
Our data suggest that administration of T-01 is an effective treatment against cervical cancer model. It may potentially be translated into the clinical area.
P-083  Estimation of potential gain in quality of life from early detection of cervical cancer
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Objectives: Different treatments can markedly influence quality of life among patients with cervical cancer. This study aims to compare dynamic changes of the health-related quality of life (HRQL) in these patients stratified by different treatments.

Methods: All patients diagnosed with cervical cancer who visited the cancer clinic at the National Cheng Kung University Hospital from March 2012 to September 2012 were invited to participate in the study. They were classified into 4 groups according to their treatment modalities: Carcinoma in situ status post conization, operation only, operation plus chemotherapy or radiotherapy, chemotherapy or radiotherapy only. The WHIQL-BREF questionnaire was used to measure the HRQL. The dynamic changes of HRQL scores were calculated with the kernel smoothing method. A mixed-effect model was constructed to analyze repeated measurements and determine risk factors for impairment of HRQL.

Results: A total of 507 measurements were collected. Patients who received operation plus chemotherapy or radiotherapy showed consistently poorer scores in various facets, including sexual activities, after adjustment for age at interview, education, marital status, co morbidities and duration after diagnosis. The dynamic changes of HRQL seemed to show that the differences in facet scores disappeared during 5–8 years after diagnosis for different treatments.

Conclusions: The patients with invasive cervical cancer suffered from poorer HRQL over physical, psychological and social domains, especially those received both operation and chemotherapy or radiotherapy.

P-084  Development and evaluation of Korean version of gynecologic cancer lymphedema questionnaire (GCLQ-K) in gynecologic cancer survivors
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Objectives: The purpose of this study is two-fold. First, it aims to develop a Korean version of Gynecologic Cancer Lymphedema Questionnaire (GCLQ-K) and evaluate its reliability and reproducibility. Second, it aims to examine the diagnostic efficacy of GCLQ-K in predicting lower limb edema (LLE) in gynecologic cancer survivors.

Methods: Thirty-three gynecologic cancer survivors with LLE and 34 gynecologic cancer survivors without LLE completed the GCLQ-K. A follow-up GCLQ-K was completed 3 weeks from baseline questionnaire. Internal consistency and reproducibility were tested, and the diagnostic efficacy of the questionnaire was evaluated via ROC analysis.

Results: The GCLQ-K presented high reliability with Cronbach’s α of 0.83 and reproducibility with intraclass correlation of 0.96. Among eight symptom clusters, six except physical functioning and infection-related identified patients with LLE with statistical significance. The area under the receiver operating curve (AUC) to identify patients with LLE was 0.868 (95% CI: 0.779–0.956). After excluding two symptom clusters (physical functioning and infection related) which showed poor prediction for LLE, the AUC of GCLQ-K total score further improved to 0.922 (95% CI: 0.864–0.961).

Conclusions: The GCLQ-K was successfully developed after minimal modification considering cultural differences in Korea from the original GCLQ, and showed high internal consistency and reproducibility. Moreover, gynecologic cancer survivors with and without LLE were satisfactorily discriminated by the GCLQ-K, and thus it is proved to be a reliable tool to identify LLE in Korean population.
P-085 Quality of life in cervical cancer patients after pelvic exenteration

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Introduction: Cervical cancer is the second most cancer in Thai women. After complete treatment, 35% of patients develop persistent or recurrent disease. In carefully selected cases, pelvic exenteration may provide the opportunity of long-term survival. Apart from clinical relevance, the impact of treatment on quality of life and sexuality should be important assessed.

Objectives: To measure the quality of life in persistent or recurrent cervical cancer patients after pelvic exenteration compared with healthy women and to determine factors affecting the quality of life.

Materials and methods: Twenty patients with persistent or recurrent cervical cancer undergoing pelvic exenteration at Rajavithi Hospital during October 1, 2004 to February 28, 2013 and 40 healthy women undergone gynecologic screening examination at Gynecologic Clinic were interviewed to complete the Functional Assessment of Cancer Therapy—Cervix (FACT-Cx) questionnaires (version 4. Thai version).

Results: Quality of life evaluated by FACT-Cx questionnaires of cervical cancer patients following pelvic exenteration was not different from that of healthy women however physical well-being score of cancer group was significant lower than control group. Higher education was shown to correlate with the better quality of life in cancer patients.

Conclusions: Quality of life in cervical cancer patients following pelvic exenteration was comparable with those of healthy women. The only factor associated with the higher score in cancer group was higher level of education. Despite small sample size, the results of this study should be considered for future counseling.

Keywords: Quality of life, Functional Assessment of Cancer Therapy—Cervix, Cervical cancer, Pelvic exenteration

P-086 A case of non-islet cell tumor hypoglycemia associated with the recurrent cervical cancer

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Introduction: Non-islet cell tumor hypoglycemia (NICTH) is a rare pathological condition but serious complication of malignant disease, especially complicated in large tumors of mesenchymal or epithelial origin. The tumor produces big Insulin-like growth factor II, and it causes fasting hypoglycemia. We report a case of NICTH associated with the recurrent cervical cancer.

Case: On a 51-year-old woman 2 para, a radical hysterectomy was performed for cervical cancer. The pathological diagnosis was squamous cell carcinoma of uterine cervix, pT1b2N1M0 stage Ib2, so CRT was followed after the surgery. Two years later, multiple metastases arose in many areas and chemotherapy was ineffective. She was taken to the emergency department of our hospital because she lost consciousness. She was diagnosed as hypoglycemic attack and regained consciousness after glucose infusion, but she had repeated it for three months. She died three months later for the original cancer. And then, she was diagnosed as NICTH by identifying big IGF-II from her serum.

Discussion: There are just two cases in which cervical cancer produced some hormones and induced hypoglycemic symptoms by not IGF-II but insulin. We surmise liver dysfunction induced hypoglycemic symptoms, but liver enzyme and platelet counts were normal. In this case, big IGF-II was not identified from the tumor tissue but we surmise the recurrent cervical cancer produced big IGF-II as the disease progression and induced hypoglycemic symptoms as a result.

Conclusion: We experienced a very rare case in which recurrent cervical cancer induced NICTH. NICTH can be caused by gynecological carcinoma.
**P-087** Secondary primary cancer after cervical cancer

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**Objectives:** To investigate the incidence and patterns of secondary cancer after cervical cancer.

**Methods:** Data from the Korea Central Cancer Registry was reviewed and analyzed between 1993 and 2010. Standardized incidence ratios (SIRs) of the secondary cancer among women with cervical cancer were analyzed.

**Results:** Total 72,805 women who were diagnosed of primarily invasive cervical cancer have been evaluated with mean follow up period of 7.3 years. Mean of initial diagnosis of cervical cancer was 51.4 year old. Peak age of cervical cancer was 40 to 59 years (49.8%). Four percent of the women (n = 2913) had a secondary cancer: 0.18% of the total 72,805 women had the third or more primary cancer (n = 134). The overall SIR for a secondary cancer was 1.05 (95% CI, 1.01-1.09) : esophagus (1.86), anus (2.42), respiratory system (2.05), lung (2.13), corpus uteri (1.91), urinary system (1.59), bladder (2.38), and bone and joints (2.70). The risk of secondary cancer at esophagus, anus, and bone and joints did not increase in subgroup with the interval less than 60 months. Interestingly, the decreasing overall SIR for a secondary cancer was breast (0.82) for all follow up period and rectum (0.66) for follow up period up to 59 months. This might be explained by ovarian ablation from treatment for cervical cancer and the shared radiotherapy field.

**Conclusions:** The secondary cancer was significantly identified in women after treatment of cervical cancer rather than general population. The incidence of breast and rectal cancer decreased after treatment of cervical cancer.

**P-088** Red meat intake and the risk of endometrial cancer: Conventional and dose-response meta-analysis of observational studies

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**Objective:** Observational studies have reported the association of red meat intake and the increased risk of endometrial cancer (EC). However, the findings are inconsistent. The aim of this study was to evaluate whether red meat intake is related to the risk of EC using meta-analysis.

**Methods:** We searched PubMed, EMBASE, and the Cochrane Library up to June 2013, using common keywords related to red meat and ECs. We included case-control studies, case-cohort studies, and cohort studies investigating an association between red meat intake and EC risk and reporting odds ratios or risk ratios with 95% confidence interval. After retrieval of data from selected articles, we performed a conventional meta-analysis and dose-response meta-analysis.

**Results:** Out of 342 articles retrieved from databases and relevant bibliographies, a total of 16 studies were included in the final analyses. In the meta-analysis of 11 case-control studies including 3,419 cases and 12,654 controls, higher red meat consumption was associated with an increased risk of EC (summary relative risk [SRR], 1.43; 95% confidence interval [CI], 1.15-1.79; I² = 73.3% comparing extreme intake categories). In a dose-response analysis for red meat intake of 100 g/day, SRR was 1.84 (95% CI, 1.64-2.05). In contrast, in the meta-analysis of five prospective studies including a total of 2,549 cases among 247,746 participants, no significant association between red meat intake and EC risk (SRR, 0.97; 95% CI, 0.85-1.11; I² = 49% comparing extreme intake categories) was observed.

**Conclusions:** Our meta-analysis found a significant linear association between red meat intake and EC risk based on case-control studies but this was not confirmed in prospective studies.
P-089 A case of synchronous quintuple primary cancers
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We encountered a 46-year-old woman with synchronous quintuple primary cancers. She did not present with any symptoms and discovery of her tumors was triggered by gynecological screening. She had clear cell adenocarcinoma of the right ovary, moderately differentiated endometrioid adenocarcinoma of the endometrium, moderately differentiated adenocarcinoma of the ascending colon, well differentiated adenocarcinoma of the rectum, and poorly differentiated papillary adenocarcinoma of the left lung. A fluorodeoxy glucose–positron emission tomography (FDG-PET) and other imaging techniques were extremely useful for the diagnosis of multiple primary cancers. Moreover, MSI2 protein expression was lacking in the tumors of the ovary, endometrium, ascending colon, and rectum, while the rectal cancer also lacked MLH1 protein. These findings suggested that an abnormality of DNA mismatch repair genes was responsible for carcinogenesis.

P-090 For the group at high risk of endometrial cancer, the liquid based endometrial cytology is useful as a screening tool
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Objectives: In Japan, endometrial cytology by intrauterine sampling is one of the most common tests for evaluating the group at high risk of endometrial cancer. However, the conventional direct endometrial smear requires cytopathologists a lot of training and great practice for the adequate interpretation, which has resulted in a limited worldwide usage of this method. We have developed a new practical and easy endometrial cancer screening system using LBC together with an unique safe and painless sampling device by which even a nurse or smear taker can work for effective intrauterine sampling.

Materials and Methods: Both the endometrial cytology (conventional and LBC method) and the endometrial biopsy were performed on the same day, as a general rule. After November 2011, totally 1,798 specimens were collected from our outpatients and were used for our study. The slide is read by one cytotechnologist using standardized OSG (Osaki Study Group) Format and positive cases are checked by the cytopathologist.

Results: As for the endometrial cancer, the sensitivity of the endometrial cytology with LBC come up to 76.5%, while that in the conventional method is 70.5%. The specificity of the endometrial cytology with LBC come up to 98.5%, while that in the conventional method is 98.1%.

Conclusion: Our method with the liquid based endometrial cytology showed a good performance to evaluate the status of the endometrium. This cytology method is useful enough for not only the initial endometrial cellular evaluation but also endometrial cancer screening together with cervical cytology.
**P-091 Overexpression of p53 in endometrial glands of the postmenopausal women**

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**Aim:** The endometrial glandular dysplasia (EmGD), which is morphologically unremarkable but displays diffuse and strong p53 nuclear staining, has been proposed as a precursor to serous intraepithelial carcinoma (SIC). We examined the presence of EmGD in postmenopausal endometria from the patients with benign disease.

**Methods:** The clinicopathological and immunohistochemical data for 51 women with postmenopausal endometrium were available in the present study. The present study was performed with the approval of the Review Board of the University Hospital of Occupational and Environmental Health on Ethical Issues.

**Results:** Seven postmenopausal women had the endometrial glands with overexpression of p53 (mean age: 71 years). There was no significant difference for incidences of body mass index (BMI), parity, hypertension, hormone replacement therapy (HRT) and diabetes mellitus between groups with and without overexpression of p53. The medians of Ki-67 index for postmenopausal women with endometrial glands with and without overexpression of p53 were 20% and 7%, respectively ($P = 0.02$). There was a significant correlation between two groups ($r = 0.515, P < 0.001$). The medians of index of apoptosis for postmenopausal women with endometrial glands with and without overexpression of p53 were 1% and 1%, respectively ($P = 0.48$). The no correlation between two groups was shown ($r = 0.213, P = 0.10$).

**Conclusions:** The overexpression of p53 was significantly associated with proliferative activity in postmenopausal endometrial glands but was not associated with apoptosis. The overexpression of p53 in postmenopausal endometria is suggested to be wild type of p53 and to be different from EmGD.

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**P-092 Hysteroscopy in the diagnosis of endometrial cancer and its effect on staging and survival: A case series**

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Endometrial cancer is a malignancy easily diagnosed at an earlier stage than most gynecological malignancies. Several methods of procuring tissue for biopsy are available. Among these is hysteroscopic guided endometrial biopsy or curettage. However, the use of hysteroscopy in the diagnosis of endometrial cancer is limited due to a concern of dissemination of malignant cells into the peritoneal cavity by the introduction of high pressure fluid into the uterine cavity.

Four cases of endometrial cancer diagnosed through hysteroscopy showed no evidence of peritoneal dissemination. All are early stage endometrial carcinomas and show no malignant cells in the peritoneal fluid cytology, with no lymph node metastasis and no lymphovascular space invasion. All are being monitored regularly showing no evidence of disease for 20 to 26 months. These cases demonstrate that hysteroscopy prior to definitive surgery for endometrial cancer has no adverse effect on surgical staging and survival of patients.
**P-093** Examination of the usefulness of MRI in diagnosis of endometrial carcinosarcoma

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**Objectives:** We examined the cases that we experienced at our hospital to ascertain whether MRI can be used to suggest a diagnosis of endometrial carcinosarcoma.

**Methods:** A retrospective imaging review was performed of the MRI images of 6 patients with endometrial carcinosarcoma (CS) and 64 patients with endometrioid adenocarcinoma (EM). Anteroposterior (AP) and longitudinal (L) dimensions of the uterus and measurement of the endometrial thickness (ET) were taken in the MRI T2WI sagittal plane. The ratio of anteroposterior measurement to endometrial thickness (ET/AP ratio) was calculated. We compared each mean between two groups.

**Results:** The mean in CS group was L 99.0mm, AP 54.7mm, ET 42.3mm, ET/AP 0.78, and that in EM group was L 76.4mm, AP 39.6mm, ET 16.5mm, ET/AP ratio 0.40. There was a statistically significant difference between L (p = 0.0429), AP (p = 0.0498), ET (p = 0.0010), ET/AP ratio (p = 0.00052).

**Conclusion:** MRI can be helpful in the diagnosis of the endometrial carcinosarcoma.

**P-094** The relationship between the volume of endometrial cancer and lymph node metastasis

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**Background and Aims:** This study aimed to estimate the risk of lymph node metastasis of endometrial cancer by tumor volume measured from preoperative MRI data.

**Methods:** We targeted 22 patients with endometrial cancer who underwent preoperative MRI and surgical treatment including lymphadenectomy. The tumor volume was measured by preoperative MRI data. We defined the tumor volume according to the volume of an ellipsoid. We examined the relationship between the volume and lymph node metastasis.

**Results:**

There were 14 patients with stage IA (FIGO 2008), 2 with stage IB, 2 with stage II, 2 with stage IIIC1, and 2 with stage IIIC2. Histologically, 19 patients had endometrioid adenocarcinoma, 1 had serous adenocarcinoma, 1 had clear cell adenocarcinoma and 1 had small cell adenocarcinoma. Lymph node metastasis was found in 4 patients and the average tumor volume of this group was 1222 cm³. There was no lymph node metastasis in 18 patients and the average tumor volume was 118 cm³. The tumor volume of these two groups showed a significant difference (P = 0.0136).

We classified 22 patients into two groups by the tumor volume, those over 10 cm³ and those smaller than 10 cm³. Tumor volume was over 10 cm³ in 8 patients with 4 of the 8 patients having lymph node metastasis. The other group including 14 patients had no lymph node metastasis.

**Conclusion:** Tumor volume of endometrial cancer can be a factor of lymph node metastasis.
Positive peritoneal cytology is associated with prognosis of patients with stage III (FIGO 2009) endometrial cancer

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Objectives: The update of FIGO system has reduced rates of executing cytology in the operating room. This study is to investigate the significance of positive cytology as a prognostic factor in patients with stage III and IV (FIGO 2009) endometrial cancer.

Methods: Stage III and IV endometrial cancer patients who underwent total hysterectomy and bilateral salpingo-oophorectomy at a single institute from 1990 to 2010 were identified retrospectively. The correlation of clinicopathological characteristics, including cytology result, and treatment outcomes was analyzed.

Results: Of 129 patients, the median age at diagnosis was 55.5 years (range 24–85 years) and 79.8% had stage III endometrial cancer. Positive cytology was present in 28.6% (37/129) and significantly associated with cervical stromal invasion, adnexal involvement, and nodal involvement (P < 0.05). There was no significant difference in the type of operation and adjuvant management between negative and positive cytology groups. At a median follow-up of 45 months, the 5-year disease-free survival was 42.3% for positive cytology vs. 59.7% for negative cytology and overall survival 35.0% vs. 78.2% (P < 0.05). Positive cytology correlated with higher recurrence rates in the para-aortic nodes and distant metastasis (P < 0.05). In multivariate analysis, positive cytology was associated with an increased hazard for recurrence (HR 1.8; P < 0.05) and death (HR 2.3; P < 0.05).

Conclusions: In advanced stage endometrial cancer, positive cytology independently predicts prognosis and is associated with distinct relapse patterns. Obtaining peritoneal cytology in stage III and IV endometrial cancer should be done ongoing.

Validity of PET/CT for pre-operative diagnosis of lymph node metastasis in endometrial cancer

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Background: Preoperative assessment of lymph node (LN) metastasis in endometrial cancer is important. Aim of this study is to evaluate the validity of PET/CT for diagnosis of nodal disease in endometrial cancer.

Methods: One hundred and thirty patients with newly diagnosed endometrial cancer, who underwent PET/CT preoperatively and treated with systematic lymphadenectomy between January 2008 and July 2013 were enrolled. Their medical records were retrospectively reviewed, and pathological results were compared with PET/CT findings.

Results: Among 130 patients, 75 patients (57.7%) underwent only pelvic and 55 patients (42.3%) both pelvic and para-aortic lymphadenectomy. Thirty patients (23.1%) were histologically proved lymph node metastasis. PET/CT was positive at LNs in 17/130 patients 13/17 truly positive, 4/17 falsely positive. Conversely PET/CT was negative in 113/130 patients: 96/113 truly negative, 17/113 falsely negative. The sensitivity and specificity of PET/CT in detecting LN metastasis were 43.3% (13/30) and 96.0% (96/100), respectively.

SUVmax in truly positive LNs, which were ranged from 2.4 to 19.7 (median, 5.5) showed significantly higher than those in falsely positive LNs, which were ranged from 1.36 to 3.04 (median, 2). The number of metastatic lymph nodes in truly positive patients, which was ranged from 1 to 32 (median, 8) showed significantly more than in falsely negative patients, which was ranged from 1 to 22 (median, 2).

Conclusion: PET/CT is useful for preoperative assessment of nodal disease in endometrial cancer, but the sensitivity and specificity in the current study are still insufficient. SUVmax may be helpful to improve the capability to detect metastatic nodes.
The primary tumor's SUVmax on preoperative FDG-PET/CT correlates with clinicopathological and prognostic factors in endometrial carcinoma and uterine carcinosarcoma

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Objective: The objective of this study was to investigate the preoperative diagnostic and prognostic value of [18F]fluoro 2-deoxy-D-glucose (FDG) positron emission tomography (PET/CT) in patients with endometrial cancer and uterine carcinosarcoma.

Methods: Seventy seven patients with endometrial adenocarcinoma and uterine carcinosarcoma underwent PET/CT prior to surgery between January 2008 and January 2013. The SUV max of the primary tumor was measured, and the relationship between the SUVmax and clinicopathological factors or patient outcome was analyzed.

Results: Based on the Receiver operating characteristic (ROC) curve analysis, the optimal cut off values of SUVmax for lymph node metastasis, lymph vascular space involvement, and myometrial invasion were found to be 7.37, 6.45, and 6.45. There was significant correlation between the SUV max and these clinicopathological factors. Furthermore, the progression free survival (PFS) and overall survival (OS) of patients with a high SUVmax (SUV>7.30) were significantly poor compared with patients with a low SUVmax (SUVmax<7.30) (p=0.039 and p=0.042, respectively). Finally, the FIGO stage and myometrial invasion, but not the SUV max, were independent prognostic factors for PFS and OS on multivariate analyses.

Conclusion: Preoperative SUVmax of the primary tumor on PET/CT in endometrial adenocarcinoma and uterine carcinosarcoma significantly correlates with clinicopathological factors and patient survival, suggesting that it may be useful biomarker for predicting clinical outcome in patients with these tumors.

Pre-operative predictive factor for LN metastasis in uterine papillary serous carcinoma (UPSC): A single-center study in Korean women

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Background: The purpose of this study was to identify the 'pre-operative' clinicopathological predictive factors for lymph node metastasis in women diagnosed with uterine papillary serous carcinoma (UPSC).

Methods: Patients diagnosed with UPSC in our institution were identified from 1989 to 2012. The predictive value of the risk factors for lymph node metastasis was analyzed using Chi square and multivariable logistic regression analysis.

Results: A total of 94 patients met the study criteria. The numbers and proportions of FIGO stage I, II, III, and IV were 48 (51.1%), 11 (11.7%), 21 (22.3%), and 14 (14.9%). Malignant cells in washing cytology, myometrial invasion more than half of its full thickness, mixed pathology with other cell types, LVSI, and LN metastasis on pathology were 18 (19.1%), 31 (33.0%), 27 (28.7%), 35 (37.2%), and 23 (24.5%), respectively. Also the numbers and proportions of pre-operative evaluation with image were 14 (14.9%), 70 (74.5%), and 10 (10.6%) for CT, MRI, and CT/MRI both. Pre-operative CA-125 (P<0.001), LN metastasis on pre-operative image (P<0.001), and extra-uterine spread on pre-operative image (P=0.009) were risk factors for lymph node metastasis on univariate analysis. The multivariate analysis revealed that pre-operative CA-125 (P=0.001) and LN metastasis on pre-operative image (P=0.003) were independent risk factors for lymph node metastasis. A cut-off of CA-125 on the ROC, 47.5 IU/mL provided the best sensitivity and specificity (56.5% vs. 90% respectively) for LN metastasis. We applied this parameter in both uni/multivariate analysis mentioned above.

Conclusion: Pre-operative CA-125 and LN metastasis on pre-operative image are the 'pre-operative' predictive factor for lymph node metastasis in UPSC.
STAT1 pathway promotes progression of serous papillary endometrial cancer

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Serous papillary endometrial cancers (SPEC) are highly progressive with poor prognosis, and its oncogenic profile is known different from endometrioid endometrial cancers. It, however, still remains unclear which pathway promotes tumor progression. In this study, we aimed to figure out SPEC-specific pathways through genome-wide analysis to reveal the mechanism promoting tumor growth and progression.

Gene expression microarray and immunohistochemical staining were conducted using 69 samples of endometrial cancer under protocols approved by the Institutional Review Board to investigate SPEC-specific pathways. Using SPAC-1L, a SPEC cell line, cellular proliferation, migration, and invasion were assessed with/without siRNAs for targeted genes. In vivo tumorigenesis was assessed with NOD-SCID mice.

Genes expression microarray analysis revealed STAT1 pathway was highly activated in SPECs, and STAT1 expression was confirmed significantly higher in SPECs by immunohistochemical staining (\(p<0.001\)).

Immunohistochemical staining also exhibited co-localization of ICAM-1 and PD-L1 at tumor frontier with prominent infiltration of CD8+ T cells in SPECs (\(p<0.001\)). IFN-\(\gamma\) induced gene expression of cMyc, ICAM-1 and PD-L1 (\(p<0.05\)) as well as STAT1 in SPAC-1L cells, and promoted cellular proliferation (\(p<0.05\)), adhesion (\(p<0.0001\)), and invasion (\(p=0.0002\)). In contrast, suppression of STAT1 attenuated induction of these genes (\(p<0.05\)), and inhibited invasion (\(p<0.05\)) and xenograft tumor growth on NOD-SCID mice (\(p<0.0001\)).

These results indicate STAT1 pathway is specifically activated in SPECs to be associated with their aggressive features. Concerning immune activity at tumor microenvironment, targeting STAT1 pathway with attenuation of tumor-immunity could be a potential candidate in the treatment of SPECs although further analysis is mandatory.

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Expression of the estrogen receptor-alpha as prognostic factor in uterine serous carcinomas

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Although the expression of estrogen receptor (ER) is usually found in uterine endometrioid adenocarcinoma, it is recently reported to be found in some uterine serous carcinoma (USC). This report describes the clinicopathological features of the USC with expression of ER-alpha with special reference to a prognostic significance of ER-alpha. Immunohistochemical expression of ER-alpha was examined in 33USCs. Greater than 10% staining was defined as the expression for ER. Cox's univariate and multivariate analyses for USC were made. There were 7USCs (21.2%) showing expression of ER-alpha. All tumors pure type of USC and strongly showed overexpression of p53. The cancer-specific survival rates of patients with USC without expression of ER-alpha and USC with expression of ER-alpha were 54.5% and 0.0%, respectively (\(P=0.04\)). Univariate analyses showed expression of ER to be a significant prognostic indicator in patients with USC (\(P<0.05\)). However, multivariate analyses for USC showed that surgical stage was an independent prognostic factor, while the significances of ER immunoreactivity disappeared.

USC with expression of ER-alpha was associated with advanced-staged tumor and showed significantly a worse prognosis than that without expression of ER-alpha. When the endometrial biopsy specimen shows the USC with expression of ER-alpha and overexpression of p53, the presence of the extraterine lesion is strongly suggested.
P-101 Clinical analysis of high risk endometrial cancer (endometrioid adenocarcinoma G3 and Type 2)

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Background: Endometrial cancer Type 2 is highly malignant with poor prognosis as well as endometrioid adenocarcinoma G3.

Method: To evaluate clinically these cases for the last 10 years (2003-2012) in our hospital, medical records were reviewed retrospectively.

Results: We experienced 170 cases of endometrial cancer, including 48 high risk cases, which were divided into 17: endometrioid adenocarcinoma G3 (ECG3), 13: carcinosarcoma (CS), 11: serous adenocarcinoma (SC), 2: clear cell adenocarcinoma (CC), 4: mixed carcinoma (with SC in all cases), and 1: undifferentiated carcinoma, respectively. According to the new FIGO classification, ECG3 were 12; stage I, 4; stage II, 3; stage IV, CS 5; stage I, 5; stage III, 3; stage IV, and SC 6; stage I, 2; stage II, 1; stage III, 2; stage IV. The mean age was 69.5 years. In 47 cases, operations were done as the initial therapy, which included 36 hysterectomy, 8 modified radical hysterectomy, 2: radical hysterectomy, and 1: incomplete operation, respectively. NAC was performed in one case. Pelvic lymphadenectomy or sampling were performed in 38 cases. In 38 cases, chemotherapy was done as postoperative additional therapy (34; TC, 4; AP). Radiation therapy was done in only one recurrent case. Five year survival rate (2003-2008) was 53.8% in ECG3, 42.9% in CS, 60% in SC. Five year survival rate was 60.9% and 20.0% with or without additional postoperative chemotherapy, respectively.

Conclusion: To keep their QOL, adequate choices are desired in individual cases. However, the possibility to improve the prognosis with postoperative chemotherapy was suggested.

P-102 Should endometrial clear cell carcinoma be classified as type II endometrial carcinoma?

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Endometrial clear cell carcinomas (ECCCs) are considered to be type II endometrial carcinomas, like uterine serous adenocarcinoma (SCA), and therefore aggressive clinical management is indicated. However, according to the limited clinical, immunohistochemical and molecular data available in the literature, ECCCs show overlapping features of SCA and endometrioid adenocarcinomas (ECA). Therefore, questions regarding their designation as the type II carcinomas have been raised. We performed immunohistochemical staining for INI1 beta and napsin A for the histologic confirmation of CCC, and analyzed immunohistochemical findings for ER, PR, Her 2/neu, p53, p16, PTEN, ARID1A, DNA mismatch repair (MMR) proteins along with other prognostic factors. We performed DNA sequencing for the K RAS, BRAF, PIK3CA and PTEN genes for 16 pure CCCs. No patients with pure CCC experienced recurrent disease or died of the disease (0/16, 0%). ECCCs had SCA-like features with rare expression of ER/PR (18.8%/6.3%) and no K RAS mutations, intermediate features regarding expressions of p53 (37.5%) and p16 (25%), and ECA-like features regarding losses of PTEN (81.3%) and MMR protein (68.8%), expression of MSI-H (25%), Her 2/neu (12.5%), PIK3CA mutations (18.8%) and ARID1A (25%). Pure ECCC should not be regarded as type II carcinoma, because it shares the immunohistochemical and molecular characteristics of type I ECA and type II SCA.
P-103 The risk and pattern of pelvic and paraaortic lymph nodal metastasis in patients with intermediate and high risk endometrial cancer

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Background: There is a continuous debate about the extent and prognostic value of retroperitoneal lymphadenectomy in endometrial cancer. Systemic pelvic and paraaortic lymphadenectomy in endometrial cancer provides a more accurate assessment of neoplastic spread and may help in better individualization of patients for adjuvant therapy.

Aim: To evaluate the risk and pattern of retroperitoneal lymph node metastasis in patients with endometrial cancers having intermediate and high risk factors for nodal metastasis and recurrence.

Material and Methods: We conducted a prospective non-randomized study of 62 cases of high risk endometrial cancers examined and treated at our regional cancer institute between the years 2008 and 2012. The inclusion criteria were: grade 3, undifferentiated adenocarcinomas; large tumor size (>5cm); grade 1, 2 tumors with more than half myometrial invasion or cervical stromal invasion; uterine papillary serous, clear cell carcinomas and squamous cell carcinomas of endometrium. The patient's staging was carried out according to the classification established by the FIGO for endometrial cancer in 2009. The Chi square test was used to analyze the correlation between tumor grade, myometrial invasion, size of the lesion and lymph nodes metastasis and Fisher's correction done whenever the frequency distribution was less than five.

Results: The patients mean age was 58.3 (range: 31 to 76 years). The 52 of 62 cases were eligible for the analysis. The 10 patients were excluded from further analysis as the post operative specimens final histopathologic examinations in nine cases revealed carcinosarcoma uterus and one case with yolk sac tumor of endometrium. The total 17 (32.7%) of 52 cases had retroperitoneal nodes metastasis nine of 17 (52.9%) in this group had both pelvic and paraaortic lymph nodal metastasis and one of 17 (5.9%) had isolated paraaortic lymph nodal metastasis. The high grade tumors (grade 3) revealed 41.4% pelvic and 20.7% paraaortic lymph nodes metastasis and there was statistically significant higher nodal metastasis in both pelvic and paraaortic lymph nodes with increasing depth of myometrial invasion (P = 0.019 and P = 0.0001) and increasing size of the lesion (P = 0.04 and P = 0.050).

Conclusion: The intermediate and high risk endometrial cancer is associated with greater degree of lymph node metastasis. A complete surgical staging which involves extraluminal hysterectomy or a type 3 radical hysterectomy when there is a cervical involvement, along with bilateral salpingo-oophorectomy, pelvic, paraaortic lymphadenectomy and an omentectomy when indicated as in the present study, is a valuable modality of treatment in intermediate and high risk cases of endometrial cancers for determining the prognosis and appropriate categorization of these women for adjuvant therapy. It is also possible to achieve a complete surgical staging in these groups of women with acceptable morbidity when performed by a trained gynaecologic oncologist.

Keywords: Endometrial cancer, Intermediate and high risk, retroperitoneal lymph nodal metastasis

P-104 A case of small cell carcinoma of the endometrium is treated successfully with multimodality therapy

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Small cell carcinoma of the endometrium is rare, and considered as poor prognosis. We introduce a case of a patient who is a 77-year-old, gravida 2, para 2, woman admitted with vaginal bleeding.

She was diagnosed with advanced small cell carcinoma of endometrium.

Physical examination disclosed a solid mass, the size of a newborn head, which was firm and nonmobilb. Magnetic resonance imaging showed an enlarged uterus with an irregular mass measuring 93mm. Metastases of paraaortic and pelvic lymph node were detected by computed tomography.

We exfoliated the uterus from the peritoneum as much as possible and extracted the body of uterus and bilateral salpingo-oophorectomy. Some of the uterus was excised difficult. Histopathological diagnosis was small cell carcinoma. Immunohistological analysis showed that the tumor cells were positive for synaptophysin. FIGO stage was IVb, pT4N1M1. Subsequently, she underwent concurrent chemoradiotherapy with cisplatin and chemotherapy with irinotecan and cisplatin.

Complete response was achieved, and there has been no recurrence, to date, 1 year after the chemotherapy. Accumulation of such cases is necessary to established treatment.

Multimodality therapy may contribute to an improved prognosis, although small cell carcinoma of endometrium is aggressive tumors.
**P-105** Neuroendocrine tumor of the uterine body: A case report

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**Background:**
Neuroendocrine tumors (NETs) are neoplasms that arise from cells of the endocrine and nervous systems. They most commonly occur in the intestine, but they are also found in the rest of the body. Very few cases of NETs of the uterine body have been reported.

**Case:**
A 63-year-old woman with genital bleeding and lower abdominal pain consulted our hospital. The MR imaging showed an enhanced uterine body mass measuring 120 cm in diameter. The histopathological examination of the biopsy specimen from the endometrium and the cervix had no malignant finding. The laboratory tests were unremarkable, except for the elevation of cancer antigen 125, cancer antigen 153. The patient underwent abdominal total hysterectomy with bilateral salpingo-oophorectomy. The uterine cavity was dilated and showed a white circumscribed tumor. Microscopically, neoplastic cells with round to oval nucleus arranged in nesting pattern with necrosis. Immunohistochemistry revealed positivity for cytokeratin, CD56, synaptophysin, and chromograninA. A diagnosis of NETs was made. The manifestation of NETs except small cell carcinoma in the uterine body is very rare, more often it is the result of metastasis rather than a primary tumor. And, microscopically tumor embolism is found in the arteries out of the uterine wall, so we tried to find a primary lesion, but it can not be found up to date.

**Conclusion:**
Neuroendocrine tumor of the uterine body which is very rare was reported. We can not determine whether it is the result of metastasis or a primary tumor at the present time. We continue observation.

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**P-106** Diagnosis and treatment results in 36 patients with uterine sarcomas

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**Background:** Recently, the incidence of uterine sarcomas has been reported to be increasing. However, little is known regarding the epidemiology of the disease.

**Objective:** To evaluate the factors associated with the clinical behavior of uterine sarcomas.

**Methods:** In the period from October 2007 to September 2012, clinical files of patients with a confirmed diagnosis of uterine sarcoma at our hospital were reviewed and evaluated retrospectively.

**Results:** A total of 36 patients with uterine sarcoma were evaluated. The mean age of the patients was 59.3 years with a range of 27 to 86 years. Among the 36 cases, 24 were diagnosed carcinosarcoma (CS) histologically, 7 leiomyosarcoma (LMS), 1 endometrial stromal sarcoma (ESS), 2 undifferentiated endometrial sarcoma (UES), 1 adenosarcoma (AS), and 1 primitive neuroectodermal tumour (PNET). The most significant symptom was postmenopausal or abnormal vaginal bleeding. Preoperative malignancy predictive value was 97.2% and histological accuracy was 45.8%. Stage I disease occurred in 20 patients at the initial visit, 2 had stage II, 7 had stage III, and 7 had stage IV. Initial treatment was total abdominal hysterectomy (TAH) (or semiradical hysterectomy) and bilateral salpingo-oophorectomy (BSO). Lymphadenectomies were performed in 50% of the case. Adjuvant chemotherapy was also given to 73.5% of the patients. The three-year overall survival rate was 69.0%. The pelvis was the most common recurrent site, followed by liver, lung, and para-aortic lymph node.

**Conclusions:** Our case series showed similar poor-prognosis with other reports. We require further development of diagnosis technique, operative procedure, chemotherapy regimen for improvement of prognosis.
P-107  Pazopanib therapy for uterine leiomyosarcoma: Case report

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Uterine leiomyosarcomas (LMS) are rare female neoplasms that account for only about 1% of all uterine malignancies and for approximately 25% of uterine sarcomas. Eighty-one percent of patients with stage III tumors will have tumor recurrence. There are no clear treatment guidelines for recurrent LMS. We present a recurrent leiomyosarcoma case resistant to chemotherapy. She had the treatments for LMS of 3 times surgeries and 3 times chemotherapies for 19 years, but LMS recurrent. She has received the pazopanib for 7 months and her disease was stable based on RECIST criteria. On the same time, she also received immune therapy as her strong request. Pazopanib is the newest multi-tyrosine kinase inhibitor, blocking various signaling pathways, thereby preventing angiogenesis and metastasis, and inhibiting tumor cell growth and survival. It approved for the treatment of patients with advanced soft tissue sarcoma. Adverse events which are hypertension, malaise, taste alternation, hand foot syndrome and hypopigmentation were Grade 2 or less and manageable with the treatment. Vascular endothelial growth factor (VEGF) is one of the most important promoters of angiogenesis. It also causes increased vascular permeability, and is a potent endothelial cell antia apoptotic factor in newly developed vessels. The sample was taken from this patient's second surgery. VEGF receptor (VEGFR) of sample tissue was stained using an indirect immunohistochemical method. VEGFR was found in this patient sample.

Conclusions: Pazopanib treatment for recurrent uterine leiomyosarcoma is acceptable and will be continued until disease progression.

P-108  Severe heart failure induced by pazopanib: A case report

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Background: Pazopanib is an oral tyrosine kinase inhibitor targeting vascular endothelial growth factor receptor, platelet-derived growth factor receptor. Until now, no cases of acute heart failure by pazopanib have been reported.

Case report: A 49-year-old woman underwent total hysterectomy under the clinical diagnosis of leiomyosarcoma in 2011. The pathological diagnosis was leiomyosarcoma of uterus. Follow-up positron emission computerized tomography revealed multiple metastasis in the lung, the left kidney, the left adrenal gland, and the pubic bone 6 months after hysterectomy. Systemic chemotherapy with gemcitabine and docetaxel (GD therapy) was started. The GD therapy has been continued for 4 months, for a total of 4 treatment cycles. But, follow-up positron emission computerized tomography revealed multiple metastasis developed. Subsequently, palliative RT underwent for the pubic bone metastasis. After RT, she received pazopanib as second line chemotherapy. After 47 days of pazopanib therapy, her blood pressure goes up to 142/99 mmHg. After 74 days of pazopanib therapy, she starts taking Ca blocker. After 81 days of pazopanib therapy, she was diagnosed with heart failure (EF 39%) and she starts taking ARB. After 132 days of pazopanib therapy, her condition get worse (EF 20%) and hospitalized. She was treated with DOB, hANP, and a diuretic and she recovered from her symptoms and was discharged from CCU to general ward on the 30th hospital day.

Conclusion: In conclusion this is the first case of pazopanib induced severe heart failure.
P-109 A case of müllerian adenosarcoma presenting as endometrial polyp protruding from cervical os
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Müllerian adenosarcoma is an uncommon variant of müllerian mixed tumors of the uterus, characterized by a benign but occasionally atypical glandular component and a sarcomatous, usually low-grade, stromal component. This tumor represents about 8% of uterine sarcoma and considered to have a low grade malignant potential.

A 71-year-old, post-menopausal woman sought medical attention because of menometrorrhagia. Her medical history was not remarkable. Pelvic examination revealed enlarged, 8-9 week gravid-sized uterus. A polyp mass was protruding from the cervical os. Pathological examination of biopsied specimen of the protruding mass revealed degenerated endometrial polyp. Magnetic resonance image showed a 73 × 52 mm intra-uterine mass protruding to vagina. First, she underwent hysterectomy and bilateral salpingo-oophorectomy. Adenosarcoma of the uterus, homologous type was found, and so a second surgery was performed. The surgical procedures consisted of pelvic lymphadenectomy, omentectomy, and appendectomy. She was ultimately diagnosed as having uterine adenosarcoma stage IA (FIGO), pT1apN0M0. No worrisome prognostic factors, as for extruterine spread at diagnosis, myometrial invasion, and the sarcomatous over-growth were observed. No adjuvant chemotherapy was given and the patient remained disease-free at 10 months after the diagnosis. We emphasize the importance of early diagnosis of müllerian adenosarcoma presenting as benign-looking endometrial polyp protruding from cervical os.

P-110 A case of uterine tumors resembling ovarian sex cord tumors
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Uterine tumors resembling ovarian sex cord tumors (UTROSCT) are very rare, usually benign, polypoid or nodular neoplasms. Patients are generally of reproductive age, although a few may be perimenopausal or post-menopausal. We report a case of a 48-year-old woman who presented with vaginal bleeding and uterine enlargement. Abdominal hysterectomy with bilateral salpingo-oophorectomy was performed and a diagnosis of UTROSCT was made. UTROSCT are distinguished into two separate groups: endometrial stromal tumors with sex cord-like elements (group 1), which have an unfavorable prognosis; and UTROSCT proper (group 2), with more than 40% sex cord-like differentiation and less endometrial component, which are biologically less aggressive than the tumors of the other group. Immunohistochemistry showed immunophenotype: the sex cord areas were positive for calretinin (+), CD99 (+), WT-1 (+), SMA (++) , Desmin (++), PR (+), and ER (+). We diagnosed this case as UTROSCT, group 2. The poly phenotypic immunophenotype can be useful in differential diagnosis from other neoplasms.
P-111 A case of low-grade endometrial stromal sarcoma (ESS-LG) growing rapidly with morphological alterations
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Here, we report, along with bibliographic discussions, a case of new-onset low-grade endometrial stromal sarcoma (ESS-LG) that relapsed in year 5 after initiating treatment and increased in malignancy grade. The patient had undergone total hysterectomy at another hospital after being diagnosed with myoma at the age of 43 years; further, she had received postoperative diagnosis of ESS-LG, after which 5 cycles of postoperative doxorubicin (ADM)/dacarbazine (DTIC) were administered. In year 5, after the end of the treatment, abdominal wall tumor relapse was observed, and she was referred to our hospital, where she underwent resection surgery. Despite postoperative medroxyprogesterone acetate (MPA) therapy, peritoneal dissemination was observed around the spleen in month 5 after the resection surgery. She once again underwent tumor excision surgery and adjuvant chemotherapy, but it proved ineffective, and she died of the primary illness at 15 months after the initial relapse. The relapsed tissue showed hormone receptor negativity and increased KIT and KI67 expressions, which meant that disease progression had accelerated. After the excision surgery after relapse, hormone therapy and chemotherapy were ineffective; thus, we feel that it is necessary to investigate new treatment strategies such as antibody therapy. ESS-LG is a slow-growing tumor, but we believe that in case of relapse, the possibility of transformation must also be carefully considered.

P-112 A case report of extrarenal Wilms’ tumor that occurred in the uterus
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Introduction: Wilms’ tumors is a renal malignancy commonly occur in childhood with classic histopathological features. While the majority of the tumors present as renal masses, atypical presentations like extrarenal masses have also been known. Occurrence of extrarenal Wilms’ tumour (EWT) is very exceptional and the diagnosis is almost always made after surgical intervention. Here, we present uterine case of EWT, and the treatment outcome.

Case: A 29-year-old woman was admitted at other hospital with the chief complaint of abnormal genital bleeding from a mass in the uterus. We picked up the tumor and pathological result revealed EWT. We followed up the patient but EWT relapsed 6 months after first diagnosis. Trans-abdominal hysterectomy, bilateral salpingo-oophorectomy, and pelvic lymphadnectomy were performed, but recurred within the pelvis and a left cervical lymph node 6 months after surgery. The patient underwent extirpative surgery. The surgery was followed by radiation therapy and typical chemotherapy of renal Wilms’ tumor. The patient is without evidence of disease 2 years after second recurrence.

Conclusion: We experienced a case of recurrent uterine EWT. Generally, recurrent cases are poor prognosis. Some reports are showing that combination chemotherapy, radiation therapy, and surgery are effective for patients with high-risk cases. In this case, combination therapy was available.
**P-113 Increased risk of second primary malignancies following uterine cancer: A population-based study in Taiwan over a 30 year period**

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**Background:** Uterine cancer is one of the most increasing malignancies in Asia. However, the available studies for second primary malignancies (SPMs) after uterine cancer were based on Western population and showed conflicting results. This study aims to define the incidence and risk of SPMs in Taiwanese patients with an initial diagnosis of uterine cancer.

**Methods:** Using population-based data from the Taiwan Cancer Registry for the period 1979-2008, we quantified standardized incidence ratios (SIRs) among 11,571 women with initial diagnoses of uterine cancer.

**Results:** Among the 11,571 women, 555 cases (4.80%) developed at least one second primary cancer during 69,987 person-years of follow-up. Our study has demonstrated a 71% increased risk of SPMs following uterine cancer (SIR = 1.71, 95% CI 1.57-1.86), with an excess risk in the vagina/vulva (SIR = 9.06), small intestine (SIR = 8.45), ovary (SIR = 4.15), urinary bladder (SIR = 2.31), kidney (SIR = 2.24), colorectum (SIR = 2.24), lung (SIR = 1.96), and breast (SIR = 1.43). The risk of secondary ovarian cancer is even higher if corrected by ratio of women with ovarian removal at surgical treatment. The overall risks and patterns of SPMs in our population deviate from those reported in the United States.

**Conclusion:** This is the first population-based study in Asia addressing the excess of second cancers in women previously diagnosed with uterine cancer. It highlights the need for surveillance guidelines, which should be based on demographics following the diagnosis and treatment of uterine cancer.

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**P-114 Invasive mole in a cesarean section scar of uterus**

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**INASGO, Indonesia, POG⁷, ESGO⁹, IGCS⁹, IAP⁹, IAP⁹**

Ectopic pregnancy in cesarean section scar is rare and molar pregnancy in cesarean section scar is even rarer. We report a case of molar pregnancy in lower segment incision cesarean section. A 42 years old woman, Gravida 4, Para 2, was referred to us from local hospital with suspected Malignant Trophoblastic Disease (MTD). She had previous curettage in local hospital 3 months ago without histopathology specimen. Her β-HCG serum level was inappropriately high (99.497/ul). The sonography showed a Gestational Trophoblastic Neoplasm. Thorax X-ray showed multiple nodules in both lung, suspected lung metastases. The patient had received two series of MTX chemotherapy. Because her β-HCG serum level was still high (69.108/ul), the MTX chemotherapy was replaced with EMACO chemotherapy. After first EMACO chemotherapy, patient complaint an abdominal pain. Second sonography showed a threatening outbreak of a mass in uterus. Then patient underwent laparatomy for total hysterectomy. The uterus specimen showed the process of MTD came from the cesarean section scar. The pathology revealed an invasive mole. Currently, she is still undergoing the treatment, and her β-HCG serum level gradually decreased (3.09/ul). In conclusion, early diagnosis and prompt treatment along with proper follow up is a key to good success rate.
**P-115** Expression of N-acetylglactosaminytransferase-6 expression in endometrial carcinomas: Clinicopathologic correlations and prognostic significance

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**Background:** GalNAc-T6, a glycosyltransferase involved in the initial step of O-glycosylation, was related with prognosis of viable cancer patients. However, the molecular mechanism of GalNAc-T6 contributing to carcinogenesis remains unclear.

**Objectives:** We investigate the association of GalNAc-T6 expression with the clinical and pathological variables in endometrial carcinomas.

**Methods:** Immunohistochemistry of GalNAc-T6 expressions was done in the patients in 240 endometrioid adenocarcinoma of the endometrium. Both univariate and multivariate regression analyses were performed. The present study was performed with the approval of the Review Board of the University Hospital of Occupational and Environmental Health on Ethical Issues.

**Results:** 168 endometrioid adenocarcinoma (70%) were determined to have positive GalNAc-T6 expression, and 72 tumors (30%) had negative GalNAc-T6 expression. The GalNAc-T6 expression correlated significantly with histological grade (P = 0.003), but not FIGO stage, myometrial invasion, vascular invasion, cervical invasion, ovarian metastasis and pelvic lymph node metastasis. In univariate survival analysis, the reduced GalNAc-T6 expression represented worse overall survival (the cancer-specific 10-year overall survival rate positive 92.1% vs negative 80.1%, p = 0.030). However, the multivariate analyses revealed that GalNAc-T6 expression in endometrioid adenocarcinomas was no independent prognostic factor.

**Conclusion:** The expression of GalNAc-T6 is a useful marker for histological grade and the good prognosis of the patients in endometrioid adenocarcinoma of the endometrium.

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**P-116** Regulatory role of osteopontin in malignant transformation of endometrial cancer

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Osteopontin (OPN) involves in the tumor-promoting or metastasis in human endometrial cancer. Depletion of OPN gene expression in endometrial cancer cells was significantly decreased in cell viability and the cells undergo apoptotic cell death. The status of OPN in THERC, R176, HeLa A and Ishikawa cell lines were analyzed by RT-PCR and western blot. After OPN siRNA transfection, mRNA and protein expression levels of OPN were determined in HeLa A and Ishikawa cells. Cell proliferation and cell cycle distribution were observed by MTT and flow cytometry analysis. DNA fragmentation assay was used to measure cell apoptosis. Cell migration was assessed by wound healing assay. Depletion of OPN gene expression in endometrial cancer cell lines (HeLa A and Ishikawa cells) reproducibly changed their ability of proliferation. Concomitant changes were seen in the expression of OPN binding cell surface receptors, cell cycle regulatory genes, cell invasion and colony formation nature of the tumor cells. Decreased colonizing potential in the absence of OPN was reversed in the presence of recombinant OPN. Inhibition of anchorage-independent growth was observed in the presence of metabolic inhibitors of the PI3K, Src and integrin signaling cascades, which was ameliorated in the presence of exogenously added OPN. Our result showed the role of OPN in endometrial cancer, in particular on the malignancy-promoting aspects of OPN that may pave way for new approaches to the clinical management of endometrial cancer.
**P-117** Loss of tumor suppressor human discs-large is a novel molecular marker for nodal metastasis and poor prognosis in endometrial cancer

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Loss of cell polarity is one of hallmarks of cancer. Recent *Drosophila* study showed that *discs-large (Dlg)* is critical to control cell polarity and tissue architecture. Loss of mutation of these neoplastic tumor suppressor leads to disruption of polarity and over proliferation of epithelia. We investigated the possibility that loss of human homologue of *Drosophila Dlg (hDlg)* is involved in endometrial carcinogenesis. Human Dlg contains 3 PDZ domains and thought to be a cytoplasmic scaffolding protein. We analyzed its expression in normal and malignant endometrial tissues by immunohistochemical staining. Human Dlg localizes at cellular membrane in normal endometrial tissues in proliferative and secretory phases. In 160 cases of endometrial cancer, normal membrane-bound expression, weak cytoplasmic expression, and loss of hDlg expression were observed in 48.1%, 28.8%, and 23.1%, respectively. Loss of hDlg was observed in patients of advanced stage and high grade histology. It was also observed in patients with distant and nodal metastasis, deep myometrial invasion, and negative estrogen and progesterone receptors. Patients with loss of hDlg showed poor OS (p-value: 0.0019). They also showed tendency of poor PFS (p-value 0.053). These data support the possibility that disruption of polarity is critical step in endometrial cancer development. Tissue polarity disturbance due to loss of hDlg is thought to render more aggressive characters to endometrial cancer cells. Our study showed that hDlg expression is a novel molecular biomarker of nodal metastasis and poor prognosis in endometrial cancer.

**P-118** Urokinase-type plasminogen activator for detection, progression and outcome of endometrial carcinoma

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**Objective:** To identify the dysregulated genes involved in the tumorigenesis and progression of endometrial endometrioid adenocarcinoma (EEC).

**Methods:** Specimens of endometrial tissues included 20 normal endometrial tissues (NEM), 20 atypical endometrial hyperplasia (AEH), and 169 EEC. The expression profiles were compared using GeneChip Array. The gene expression levels were determined by real-time reverse transcriptase PCR in 85 EEC patients as the training set and in 84 EEC patients as the testing set. The protein expressions were then examined by immunohistochemical staining. The correlations between the gene expression and clinical-pathologic parameters of EEC were evaluated.

**Results:** Seven dysregulated genes were first identified. In the training set, the relative expression levels of uPA (p < 0.01) and PLOD2 (p = 0.019) were higher in EEC than in NEM and AEH. However, only the uPA expression levels were higher in EEC with deep myometrial invasion (p = 0.028), lymph node metastases (p < 0.01), and advanced stages (p = 0.017). The uPA expression levels were also higher in EEC patients with deep myometrial invasion (p = 0.025), lymph node metastases (p = 0.018), and advanced stages (p = 0.018). Besides, the mRNA and protein expression of uPA in cancerous tissues had good correlations (p < 0.01). After multivariate analyses, uPA was the only independent poor prognostic factor for disease free survival in EEC patients (hazard ratio: 4.65, p = 0.03).

**Conclusions:** uPA and PLOD2 are two dysregulated genes in the tumorigenesis of EEC but only uPA is involved in the bio-pathologic features. The uPA may be a potential molecular marker for clinical prognosis, and detecting disease and progression of EEC.
The inhibitory effect of salinomycin on the proliferation, migration and invasion of human endometrial cancer stem-like cells

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Goals: We previously demonstrated that side-population (SP) cells in human endometrial cancer cells (Hecl cells) and in rat endometrial cells expressing oncogenic human K Ras protein (RK12V cells) have features of cancer stem cells (CSCs). In this study, we analyzed the association of the epithelial→mesenchymal transition (EMT) with the properties of these endometrial CSCs. We also assessed the effects of salinomycin (a compound with EMT-specific toxicity) on the proliferative capacity, migration and invasiveness of these endometrial CSCs using Hecl-SP cells.

Method: We performed microarray expression analysis to screen for upregulated genes in CSCs using a set of RK12V-SP cells and non-SP (NSP) cells. To analyze their association with EMT, the expression of several EMT associated genes in Hecl-SP cells was investigated by real time PCR. We assessed the expression of BAX, BCL2, LIF1, cyclinD and fibronectin by real time PCR. We also evaluated the viabilities, migration and invasive activities, and tumorigenicities of these SP cells and NSP cells in the presence or absence of salinomycin.

Results: We demonstrated that i) EMT processes were observed in both RK12V-SP cells and Hecl-SP cells, ii) the level of fibronectin was enhanced in Hecl-SP cells and salinomycin reduced the level of fibronectin expression, iii) salinomycin induced apoptosis and inhibited Wnt signaling, and iv) salinomycin inhibited the proliferation, migration, invasiveness and tumorigenicity of these SP cells.

Conclusion: This is the first report of an inhibitory effect of salinomycin on the properties of endometrial CSCs.
P-121 Synchronous primary cancers of the endometrium and ovary in young women: A Korean Gynecologic Oncology Group study

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Objective: Some authors have recommended the use of diagnostic laparoscopy as a pretreatment assessment step for conservative hormonal treatment in young women with endometrial cancer. The aim of this study was to determine the incidence of synchronous primary cancer of the endometrium and ovary in young women.

Methods: The medical records of 3240 patients with endometrial cancer who underwent primary surgery between 1995 and 2010 were collected from 7 institutions and were retrospectively reviewed. Low-risk endometrial cancer was defined as tumors without myometrial invasion; normal or benign-looking ovaries; normal CA-125; grade 1 endometrioid histology; and early stage endometrial cancer on pretreatment assessment.

Results: Fifteen percent (471/3240) were younger than 40 years of age. The incidence of synchronous ovarian cancer in young women with endometrial cancer was 4.5% (21/471). In patients with low-risk endometrial cancer, synchronous cancers were not identified.

Conclusion: The incidence of synchronous ovarian malignancies in young women with endometrial cancer was quiet low (4.5%), unlike previous studies have revealed (11-29%). Therefore, diagnostic laparoscopy is not mandatory in patients with low-risk early stage endometrial cancer selected for conservative treatment to confirm the absence of ovarian malignancy.

P-122 Prognostic factors in women with synchronous endometrial and ovarian cancers

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Objectives: The purpose of this study was to determine prognostic factors in women with synchronous endometrial and ovarian cancers.

Methods: Medical records of 3240 patients with endometrial cancer who had undergone primary surgery were collected from 7 institutions and were retrospectively reviewed. The Progression-free survival (PFS) and overall survival (OS) curves and rates were calculated using the Kaplan-Meier method. Multivariate analysis to determine independent prognostic factors was performed using the Cox regression model.

Results: The incidence of synchronous endometrial/ovarian cancer was 3.8% (123 of 3240). During the median follow-up period of 66 months, 33.3% and 24.1% of women developed recurrences and cancer-related death. The 5-year PFS and 5-year OS for all 123 women were 66.9% and 80.0%, respectively. In multivariate analysis, pretreatment CA-125 and tumor stage of the ovary showed prognostic significance about PFS (P = 0.043 and P = 0.027) and OS (P = 0.047 and P = 0.031), respectively.

Conclusions: Pretreatment CA-125 and tumor stage of the ovary were independent prognostic factors for recurrence and survival.
Methods:

Assessment of the efficacy of high dose medroxyprogesterone acetate (MPA) as a treatment for early endometrial cancer (EC) and atypical endometrial hyperplasia (AEH) in young women, and sought molecular markers for MPA that reflect response to therapy.

Methods: The records of 10 patients with AEH and 17 with EC who underwent MPA therapy were analyzed retrospectively. All were administered MPA 600 mg per day orally for 6 months. We performed immunohistochemical analysis of pre-treatment endometrial specimens in 22 cases.

Results: The initial pathological complete response rate in AEH and EC was 80% (eight out of 10) and 47% (eight out of 17), respectively. Four of 8 patients (50%) with AEH, and five of eight (62.5%) with EC showed disease recurrence. Time to recurrence after first treatment was 133 ± 5.8 months in AEH and 19.2 ± 21.5 months in EC. One patient developed an ultimately fatal ovarian cancer in the preserved ovary having undergone hysterectomy because of failure of MPA therapy.

Immunohistochemistry showed that expression of MSH2, a crucial component of the post-replicative DNA mismatch repair system, was significantly associated with response to MPA (p = 0.0225).

Conclusions: Although MPA is an effective treatment for AEH and early stage EC, the rate of recurrence is high. As young patients with EC have been reported to have a relatively high incidence of coexisting ovarian malignancy, careful surveillance is necessary before and after MPA treatment. MSH2 expression may be a useful marker for predicting treatment response.

Purpose of this study: To present a case of uterine carcinosarcoma occurring in young woman who was treated with oral medroxyprogesterone acetate (MPA).

Method (s): 32 y/o woman with chief complaint of hypermenorrhea was diagnosed as endometrioid adenocarcinoma by endometrial polyp resection, and given MPA for 20 weeks. However, because a carcinoma still remained after the treatment, surgical treatment was planned. Tumor became larger rapidly before the surgery, and came out through the cervix to vaginal cavity.

Result (s): Modified radical hysterectomy, bilateral salpingo-oophorectomy and pelvic lymphadenectomy were performed. Tumors arose from endometrium, and a histological examination showed a homologous type of carcinosarcoma. FIGO stage IA was diagnosed. She has received Paclitaxel/Carboplatin adjuvant chemotherapy.

Conclusion (s): Uterine carcinosarcoma in young women is rare. However, it may be necessary to consider this disease when polypoid tumor is found in the uterine cavity even in young women.
Fertility sparing management by photodynamic therapy in young patients with early stage endometrial cancer and cervical cancer

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**Purpose:** We evaluated the effectiveness of photodynamic therapy (PDT) as conservative treatment for fertility sparing in young women with early stage endometrial/cervical cancer.

**Material and methods:** We analyzed data of 21 patients with stages IA-IIA cervical cancer and 16 patients with stage IA endometrial cancer who underwent PDT from 2003 to 2012. Surface photoillumination with red laser light at 630 nm wavelength was applied in endometrial cavity, endocervical canal and exocervix, 48 hours after the photosensitizer injection in a dose 2mg/kg intravenously. LEEP or conization was performed in cervical cancer group before PDT. For cases of stage >IB1. PDT was underwent after confirming negative for malignancy of pelvic LN.

**Results:** In endometrial cancer group, mean age of 16 patients was 30.7 years and follow-up period was 78 months. The complete remission (CR) was shown in 12 patients. And four of them experienced recurrence. Two of recurrent cases and 1 of 4 non-responders showed CR after 2nd PDT. Therefore the final response rate was 68% (11/16). Four women had 7 successful pregnancies resulting in 6 live births. In cervical cancer group, the mean age of 21 patients was 31 years old. The majority of the lesions were stage IA1 (47.6%) or IB1 (42.9%). There was 1 recurrence (1/21; 4.7%) and no death during 526 months. Of the 13 women who attempted to get pregnant, 10 women conceived a total of 11 pregnancies resulting in 7 live births. No tumor-related deaths or PDT-related severe adverse effects were noted.

**Conclusion:** PDT could be an effective and alternative method to preserve fertility in treating selected early stage endometrial and cervical cancer patients.

Retrospective analysis of selective lymphadenectomy in apparent FIGO 2008 stage I endometrial cancer

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**Objectives:** The objective of this study was to find pathologic indicators that would discriminate a subgroup of apparent FIGO 2008 stage I endometrial cancer that would not require retroperitoneal lymphadenectomy.

**Methods:** A total of 188 patients (Stage I, n = 150; II, n = 6; and III, n = 32) (FIGO 2008) underwent primary surgery in Tokushima University Hospital between 2000 and 2011. 149 patients were treated with routine systematic lymphadenectomy (pelvic or pelvic + para-aortic). 39 patients were treated without systematic lymphadenectomy. Clinical records were reviewed retrospectively and histopathological factors (grade, myometrial invasion, lymph-vascular space invasion) were compared.

**Results:** Pelvic and aortic node metastases were found in 18 (12.1%) of 149 patients and 3 (11.9%) of 42 patients, respectively. 24 patients of T1a had no lymph node metastasis. 3 (4.1%) of 71 T1b patients had lymph node metastasis. 3 case had all lymph-vascular space invasion and almost 50% myometrial invasion. Only the case myometrial invasion less than half, and G1 without lymph-vascular space invasion did not have lymph node metastases. 16 (29.6%) of 54 T1c patients had lymph node metastasis. 39 patients without systematic lymphadenectomy are alive without recurrence.

**Conclusions:** FIGO 2008 stage Ia endometrial cancer without lymph-vascular space invasion may not require retroperitoneal lymphadenectomy.
Laparoscopic versus laparotomy staging surgery in women with high grade endometrial cancer: A retrospective analysis

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Methods: Retrospective matched case-control study. Two hundred sixteen women (ages 30-78 yrs) with high grade endometrial cancer in University of Ulsan College of Medicine, Asan Medical Center, Seoul, Korea. One hundred fifty two patients were selected to be compared: laparoscopic (n=76) or laparotomic (n=76) surgical staging.

Results: Of 216 patients, 76 patients in laparoscopy group were successfully matched to 76 patients in laparotomy group by age, body mass index, grade, histology, medical comorbidities and adjuvant therapy. FIGO stage (p<0.135), median operation time (laparoscopy versus laparotomy, 210.89 min vs. 233.64 min; p<0.076), and median number of retrieved lymph nodes (36.86 vs. 33.82; p<.062) were not different between group. However, post operative hospital stay was significantly shorter (7.34 days vs. 14.54 day; p<.001). Estimated blood loss was significantly less (285.07 ml vs. 589.93 ml; p<.001) and intra-operative complications (14.5% vs. 30.3%; p<.020) and post-operative complications (1.3% vs. 25.7%; p<.001) were significantly fewer in laparoscopy group. After a median follow-up time of 41.34 months, progression-free survival (85.53% vs. 76.32%; p<.133) and overall survival (94.71% vs. 85.53%; p<.074) were not different between the two groups.

Conclusions: Laparoscopic surgical staging was associated with better surgical outcomes in term of hospital stay, blood loss, perioperative complications. The survival outcomes after laparoscopic surgical staging were compatible to those of laparotomic surgical staging. Therefore, laparoscopic surgery may be the preferred surgical approach for patients with high grade endometrial cancer.

Comparison of laparoscopy and laparotomy for endometrial cancer: A retrospective analysis

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Objective: Endometrial cancer is the most common gynecological malignancy in the developed world, particularly among postmenopausal women. The objective of this study was to compare the use of laparoscopic surgery and abdominal surgery for endometrial cancer patients.

Methods: Consecutive data of patients with endometrial cancer who underwent laparoscopic or abdominal surgery were recorded.

Results: A total of 20 subjects (7 and 13 treated by laparoscopy and laparotomy, respectively) who received surgery were included in the analysis. The laparoscopic approach to endometrial cancer was more commonly performed in patients who had received less previous surgeries, whereas the abdominal approach was preferred for the advanced stages and rare histology. The operative time was higher for the laparoscopy than laparotomy, whereas blood loss and postoperative complications were lower in the laparoscopy group. No differences in overall, disease-free, and cancer-related survival rates were also observed.

Conclusions: In this analysis, the safety and the feasibility of the laparoscopy are confirmed for early stage endometrial cancers. As a promising therapeutic option, it should be offered to all patients with an early-stage endometrial cancer.
P-129 Outcome of ovarian preservation during surgical treatment for endometrial cancer: A Taiwanese Gynecological Oncology Group (TGOG) study

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Objective: The goal of this case review study was to evaluate the outcome of ovarian preservation in patients with endometrial carcinoma.

Methods: A retrospective chart review of patients with histological confirmed endometrial cancer who underwent ovarian preserving surgery was treated at 10 tertiary care hospitals from 1998 to 2009. The study was carried out under the auspices of the Taiwanese Gynecologic Oncology Group (TGOG). Information regarding clinical characteristics, preoperative and intraoperative evaluation, pathologic reports and follow-up results was abstracted from medical records.

Results: Seventy-four patients were eligible for this study. Mean age of surgery was 40.7 ± 9.2 years (range 21–63). Ovary-preserving surgery was performed in 38 (51.4%) patients who desired to preserve their ovaries incidentally in 26 (35.1%) patients with preoperative diagnosis other than endometrial carcinoma, and in 10 patients (13.5%) with unknown reasons. Median duration of follow-up was 37.0 months (range 1.0–143.0 months). Twelve patients was performed adjuvant treatment with advanced stage or risk factors. Recurrence-free survival was 91.3%. Two of the 74 (4.0%) patients had documented recurrence, and only one death occurred from non-disease related causes. Two recurrence had risk factors including non-endometrioid histology or tumor size >2cm. No metachronous ovarian malignancy occurred during follow-up.

Conclusion: Ovary preservation may not be associated with an increase in cancer-related mortality. More conservative approach to surgical staging maybe consider in premenopausal women with early stage endometrial cancer without risk factors.

Keywords: Ovarian preservation, Early stage, Endometrial cancer

P-130 The electrothermal bipolar sealing device could prevent the development of the lymphocele in gynecologic cancers


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Objective: To decrease the incidence of postoperative lymphoceles by pelvic lymphadenectomy to gynecologic cancers, a number of new techniques are developed. We did a retrospective study designed to assess the bipolar vessel sealing device could decrease the incidences of the postoperative lymphoceles after pelvic lymphadenectomy.

Methods: A total 321 patients with gynecologic cancer were carried out pelvic lymphadenectomy from 2005 to 2011. We did retrospective analysis of the incidence of lymphoceles post pelvic lymphadenectomy with or without the bipolar vessel sealing device. We retrospectively compared the incidence of lymphoceles and any symptoms between two groups with or without the bipolar vessel sealing device.

Results: After 4–8 weeks from surgery, 108 cases of lymphoceles (34%) were detected by the CT scan examination. The incident of lymphoceles after pelvic lymphadenectomy were found 56% (75/134) in tie ligation group, while 18% (33/187) in bipolar sealing device group. We found notable decrease of the incidence of lymphoceles in bipolar sealing device group. (p<0.001) We performed multivariate analysis with logic Regression of three variables (Device, Operation time, and Dissected number of LN). We found only Device (p<0.0001) had significant difference in these variables.

Conclusion: The bipolar sealing device might useful for the prevention of developing lymphocele in the lymphadenectomy of the surgery to gynecological cancer patients.
Comparison of laparoscopic-assisted vaginal hysterectomy vs traditional hysterectomies

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**Objectives:** To compare operating time, blood loss, rate of complications, consumption of analgesics and length of hospital stay of laparoscopic-assisted vaginal hysterectomy (LAVH), total vaginal hysterectomy (VH) and total abdominal hysterectomy (TAH).

**Study Design:** A prospective, randomized study was performed at Gynecologic Surgery Department of National Cancer Center of Mongolia between March 2012 and July 2013. A total of 90 women indicated to undergo hysterectomy were randomly assigned to three different groups (30VH, 30LAVH, and 30TAH).

**Result:** In our research the groups were significantly different for mean intraoperative blood loss were LAVH: 127.5 ± 52.7 mL, VH: 145 ± 57.8 mL and TAH: 210 ± 77.4 mL (P = .007) and operative time were LAVH: 112.5 ± 18.5, VH: 51.6 ± 16.9, TAH: 69 ± 18.2 minutes (P = .001). Postoperative pain on day 0 and the total abdominal group were 5.5 ± 0.7 days of analgesic request it was higher than other two groups (LAVH: 3.08 ± 0.7 days, VH: 3.0 ± 0.86 days P < .001). LAVH was associated with a reduced hospital stay (LAVH: 3.3 ± 0.6 days; VH: 3.7 ± 0.6 days; TAH: 6.5 ± 0.7 P < .001). LAVH had longest operating time (112.5 ± 18.5 min), a low complication rate, lack of severe postoperative complications. Vaginal hysterectomy had the shortest operating time (51.6 ± 16.8 min) and significantly higher rate of febrile complications (20%) compared to LAVH (23%) and TAH (16%).

**Conclusions:** However LAVH and VH seem to be operative time, blood loss and hospital stay, VH were technical problem salpingo-oopherotomy. The LAVH has advantages over the TAH in that in the former there is less intraoperative blood loss, less postoperative analgesic requirement, and a shorter duration of postoperative hospital stays.

Robotic surgery in gynecological oncology: A report of the experience from a single institute in Taiwan

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Minimally invasive surgery has been the trend in various specialties and continues to evolve as new technology develops. The development of robotic surgery in gynecology remains in its infancy. The present study reports a descriptive series of robotic surgery in gynecologic cancers in a single institute in Taiwan.

**Materials and Methods:** From March 2009 to July 2013, the records of patients undergoing robotic surgery using the da Vinci Surgical System were reviewed for patient demographics, indications, operative time, hospital stay, conversion to laparotomy, and complications.

**Results:** Two hundred and twenty-one cases were reviewed in the present study. Sixty patients had malignancies including 46 endometrial cancers and 4 cervical cancers. Lymphadenectomy was routinely dissected up to the level of inferior mesentery artery. All these surgeries were performed smoothly without ureteral, bladder or bowel injury. There were no patients converted to laparotomy.

**Conclusion:** Our experiences do show that robotic surgery is feasible and safe for patients with endometrial and cervical cancers.
P-133  Pulmonary embolism after laparoscopic surgery in comparison with laparotomy for gynecologic malignancies: A non-randomized study

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**Background and Aims:** Laparoscopic surgery (LS) for gynecologic malignancies is less invasive than laparotomy (LT), but may increase the risk of pulmonary embolism (PE) due to pneumoperitoneum, prolonged Trendelemburg's position and longer operative time. This study aimed to evaluate prospectively the incidence of PE after LS in comparison with LT for gynecologic malignancies.

**Methods:** From 2006 to 2011, surgical patients with early stage gynecologic malignancies in Oji hospital were enrolled in this study. The two surgical procedures were essentially identical in terms of operation field and resected organs, including para-aortic and pelvic lymph node dissection. All patients received prophylaxis for thromboembolism including elastic stockings, intermittent pneumatic compression and low dose unfractionated heparin. PE was assessed with Wells’ score and pulmonary perfusion SPECT using \(^{99m}\)Tc-MAA and chest X-ray.

**Results:** 97 consecutive patients (cervical cancer, 35; endometrial cancer, 38; ovarian cancer, 24) were included in this study, and 48 patients agreed with LS, while the remaining 49 patients preferred LT. There was no significant difference in the disease, stage, age and body mass index between the 2 groups. PE was detected using perfusion SPECT in 26 of LS (54.1%) and in 27 of LT (55.1%, \( p = \text{NS} \)) patients, respectively. Of them, clinical PE (Wells’ score > 60) included one case in each group.

**Conclusions:** The incidence of PE including subclinical cases after LS for gynecologic malignancies was not different from that after LT. Subclinical PE was observed in more than 50% of patients. Therefore, aggressive preventive measures for thromboembolism were essential even in laparoscopic surgery.

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P-134  Efficacy of vacuum-assisted closure in wound-care management of patients with gynecological cancer

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**Background and aims:** Wound infection or disruption after gynecological surgery due to prolonged operation or large incisions could pose a serious problem. Vacuum-assisted closure is a novel therapy that promotes wound healing using negative pressure. We aim to investigate the efficacy of vacuum-assisted closure therapy with corium sutures on wound-care management in comparison with that of a conventional method involving the use of subcutaneous sutures and staples.

**Methods:** Between April 2006 and March 2013, 302 patients were enrolled in the study. A conventional method for wound closure was used in 124 patients and vacuum-assisted closure therapy with corium sutures was used in 178 patients. The incidence rates of the surgical site infection (SSI), wound disruption and hematoma in both groups were evaluated. The vacuum drains were removed at 3-6 days after surgery and their tips were cultivated.

**Results:** Vacuum-assisted closure therapy with corium sutures reduced the complications of wound healing such as SSI disruption, and the incidence of hematoma (complication rate of Vacuum-assisted closure vs. conventional methods: 13.7% (17/124) vs. 3.4% (6/178), 63.5% (8/124) vs. 1.7% (3/178) and 15% (2/124) vs. 0.0% (0/178), respectively). On the other hand, only 22% (2/178) underwent the entry hematoma by vacuum drains. Bacterial were detected in 50.0% (5/10) of the cultured drain tips at day 6 after surgery, although they were observed in only 1.9% (2/108) at day 3-5 after surgery.

**Conclusion:** We conclude that vacuum-assisted closure with corium sutures is an effective and safe method for wound-care management of gynecological malignancies.
The usefulness of subcuticular sutures with vacuum-assisted-closure in gynecologic malignancies

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Background:
Wound disruption and surgical site infection (SSI) are potential complications of surgeries for gynecologic malignancies that require a wide incision and many hours to complete. Some reports suggest that subcuticular sutures with vacuum-assisted-closure (VAC) have a more protective effect than skin staples against incisional SSI following digestive surgery. It is not clear, however, if this is also the case for surgery for gynecologic malignancies.

Aim:
We investigated the usefulness of subcuticular sutures with VAC subcuticular sutures in patients receiving surgery for gynecologic malignancies.

Methods:
This retrospective single-institution study included 317 patients receiving surgery for gynecologic malignancies. Skin staples were used in 140 patients between April 2007 to March 2010, and subcuticular sutures with VAC were performed in 177 patients between April 2010 to March 2012. Logistic regression analysis was used to evaluate univariate and independent multivariate associations with the risk factors for the occurrence of wound disruption or SSI.

Results:
The incidence of wound disruption (the staple group vs the subcuticular sutures group) was 12.1% vs 3.4% (p = 0.0029), that of wound infection was 5.0% vs 0.6% (p = 0.0124). Multivariate analyses performed with wound disruption revealed long steroid use, subcutaneous thickness, and skin staples as an independent predictor. In SSI, subcutaneous thickness and skin staples were independent factors in multivariate analysis. Furthermore, subcutaneous thickness of more than 30 mm are detected as a risk factor.

Conclusions:
Subcuticular sutures with VAC in gynecologic malignancies have protective effects against wound disruption and SSI, and were recommended especially in fatty patients.
P-137 Prognostic factor of FIGO stage III endometrial cancer

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Objective:
The objective of this study is to assess effects of clinicopathological risk factors and contemporary therapeutic interventions on FIGO stage III endometrial cancer outcomes.

Methods:
A retrospective analysis was performed of 59 patients diagnosed with FIGO stage III endometrial cancer from 2002 to 2012. Survival was estimated via the Kaplan-Meier method. Associations were evaluated with Cox proportional hazard regression and log-rank test.

Results:
Therapy with curative intent was initiated for 19 patients of stage IIIA, 2 patients of stage IIIB, 23 patients of stage IIIIC1 and 15 patients of stage IIIIC2. Although risk factors varied among the FIGO stage, overall survival and progression free survival did not differ statistically between subtypes (P = 0.29, 0.315). The 5-year cause-specific survival was 88.2%, 100.0%, 75.2% and 83.3% for stage IIIA, III B, IIIIC1 and IIIIC2. Recurrence rate was 35.6%. Median time to recurrence after final treatment was 13.7±10.1 months. 88.2% were recurrence within 24 months. Histologically, 27.9% of endometrioid adenocarcinoma, 83.3% of serous adenocarcinoma had been recurrence. Local Recurrence cases had various features and tendency. Univariate modeling identified parametrium invasion and cervical invasion (P<0.001) but not growth direction of the tumor, myometrial invasion and vascular invasion as independent prognostic factors.

Conclusions:
Parametrium and cervical invasion was a significant adverse prognostic factor. Some patients obtained long-term prognosis by receiving aggressive treatments to local recurrence. Improvement of prognosis of stage III endometrial cancer will lead to improvement of prognosis of all stages.

P-138 Prediction of prognostic factors in patients with recurrent endometrial carcinoma

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Background and Aim:
Endometrial carcinoma is the third most common gynaecological malignancy in Malaysia with approximately 400 new cases each year. The aim of the study is to determine the prognostic factors in women with recurrent endometrial carcinoma in local settings.

Methods:
A retrospective study involving 93 women with endometrial carcinoma with a minimum follow-up of 2 years. Recurrence is defined by detection of disease more than 3 months following primary therapy, as evidenced by increasing trend of more than 50% of serum CA-125 level and detection of new lesion by radiological images.

Results:
Seventeen patients (18.3%) developed recurrence with median disease free survival of 10 months. Five out of nine hypothesised factors had significant associations with recurrence which were tumour grade (p = 0.021), clinical stage (p = 0.040), depth of myometrial invasion (p = 0.046), presence of lymphovascular invasion (p = 0.039) and adjuvant chemotherapy (p = 0.027). Age, histology cell type, tumour size and adjuvant radiotherapy were not associated with recurrence (p > 0.05). Women with poorly differentiated tumour had higher odds of developing recurrence (OR = 1.50, 95% CI = 0.118 - 11.182) as well as those in advanced clinical stage (FIGO stage III and IV) (OR = 1.336, 95% CI = 0.978 - 1.825), depth of myometrial invasion that involved more than 50% (OR = 1.231, 95% CI = 0.978 - 1.530), lymphovascular involvement (OR = 3.106, 95% CI = 1.352 - 7.138) and patients who required chemotherapy (OR = 3.078, 95% CI = 1.361 - 6.963).

Conclusion:
Women in advanced clinical stage, with poorly differentiated tumour, deep myometrial invasion, lymphovascular involvement and had undergone adjuvant chemotherapy were more likely to develop recurrent endometrial carcinoma. These factors are important in identifying high risk patients in local settings.
**P-139** Treatment-free interval predicts prognosis of, and effect of chemotherapy on, recurrent endometrial cancer

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**Objective:** To identify prognostic factors of recurrent endometrial cancer, clarify whether treatment-free interval (TFI) is such a predictor and assess the influence of TFI on the prognosis of the effect of chemotherapy for recurrence in a wide spectrum of patients, including those with adverse prognostic factors.

**Methods:** Relevant patient clinical data of 51 patients with recurrent endometrial cancer who had initially been treated by surgery ± adjuvant chemotherapy for International Federation of Gynecology and Obstetrics stage I-IV between 1997 and 2009 were retrospectively reviewed. The Kaplan-Meier method and Cox regression analysis were used to estimate overall survival (OS) following recurrence and determine factors impacting on outcomes. Fisher’s exact test was used for differences in effect of chemotherapy.

**Results:** The median age at initial treatment was 59.2 years (range, 38-78 years) and median post-recurrence overall survival 27.0 months (range, 1.8-156.7). Multivariate analysis showed lymph node metastasis (HR 4.94, 95% CI 2.13-11.46, p<0.001), TFI (HR 0.22, 95% CI 0.086-0.57, p=0.003), multiple sites of recurrence (HR 2.93, 95% CI 1.29-6.63, p=0.011), and symptomatic recurrence (HR 3.00, 95% CI 1.31-6.85, p=0.002) were independent prognostic factors. Patients whose tumors recurred after a TFI ≥12 months had better response rates than did those with TFI <12 months (p=0.001).

**Conclusion:** TFI is a significant prognostic factor of recurrent endometrial cancer. Furthermore, the effect of chemotherapy on recurrent endometrial cancer is probably influenced by the duration of TFI.

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**P-140** Is NAC efficient for stage IV endometrial cancer?

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**Objectives:** Endometrial carcinoma (EC) has been increasing currently, however, adequate treatment for the advanced cases has not standardized yet. The purpose of this study is to evaluate the prognosis of patients with stage IV EC retrospectively and elaborate the strategy for these advanced cases.

**Method:** 93 stage IV EC patients who were treated in our institution between January 1994 and August 2012 were identified. Patients were classified into three groups according to the initial treatment: Primary debulking surgery (PDS), Neoadjuvant chemotherapy followed by Interval debulking surgery (NAC-IDS) and Others. Data regarding disease spread, histological fact, surgical procedures and OS were collected.

**Results:** The 5-year survival rate in total was 22.3% and the median OS was 15.1 months. Hematogenous metastasis was seen in 47.3%. The patients with hematogenous metastasis had significantly poor prognosis. 68% patients in PDS had only disseminated metastasis and optimal surgery was achieved in 52%. Mean OS was 31.8 months in this group. Meanwhile 57.1% patients in NAC-IDS had hematogenous metastatic sites, though, were performed optimal surgery in 66.7% and mean OS was 20.1 months. There was no significant difference of OS between these two groups.

In Others, none of them underwent surgery due to poor PS or complications and mean survival was 7.9 months.

**Conclusion:** The treatment strategy for advanced EC is cytoreductive surgery. Especially optimal surgery with residual tumor less than 1cm acquire better prognosis. Combined with NAC may contribute to successful cytoreduction even with hematogenous metastasis and improve survival.
P-141 Validity of the effectiveness of UFT maintenance chemotherapy for patients with endometrial cancer after adjuvant chemotherapy

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UFT, a blend of uracil and Tegafur, is an antitumor agent for oral administration that is presumed to maintain the concentration of 5-fluorouracil (5-FU) in tumor tissue. So far, UFT was used for patients with endometrial cancer after adjuvant chemotherapy as maintenance therapy in our institute. UFT has been given as a treatment for some types of cancer, especially breast cancer, colon cancer, etc., however there are a few reports for endometrial cancer. Therefore we performed the retrospective study for validity of the effectiveness of UFT maintenance chemotherapy for patients with endometrial cancer.

Seventy-eight patients with advanced endometrial cancer, stage IA to 4B, were treated with after post-operative adjuvant chemotherapy out of 181 patients with endometrial cancer we treated between 2006 and 2010. Among them, 21 patients were treated with UFT as maintenance chemotherapy (UFT treated group), so we analyzed toxicity, disease free survival, and overall survival of the patients compared with 54 patients without UFT chemotherapy (UFT untreated group).

As a result, grade 3 or more severe toxicity occurred only one patient with liver dysfunction in UFT treated group. There is no significant difference of disease free survival and overall survival between UFT treated and untreated groups.

In our study, UFT maintenance chemotherapy appears to be not useful for patients with endometrial cancer. We will discuss the issue in more details at recent reports of maintenance chemotherapy for endometrial cancer.

P-142 Dosimetric comparison of interstitial brachytherapy, intensity-modulated radiation therapy and stereotactic radiotherapy for the patient of recurrent endometrial carcinoma

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**Purpose:** Interstitial brachytherapy (IBT) is the standard alternative treatment for patients with uterine carcinoma not suitable for intracavitary radiotherapy. However, modern external beam radiation therapy (EBRT), such as intensity-modulated radiotherapy (IMRT) and stereotactic body radiotherapy (SBRT), have the potential to replace IBT. The object of this study is to make a dosimetric comparison based on physical dose distribution between them for the recurrent uterine carcinoma.

**Materials/Methods:** The data of a sixty-two-year-old patient with recurrent endometrial carcinoma who has been already treated with IBT after whole pelvic EBRT was analyzed. The dosimetries achieved by the IMRT and SBRT were compared the inverse planned IBT for equivalent prescription dose constrain. Conformity index and dose volume histograms for the clinical target volume (CTV) and organ at risks (OARs), namely rectum, bladder, and urethra were retrospectively assessed.

**Results:** CTV coverage factors for IBT, IMRT, SBRT were 0.98, 0.99, and 0.96, and conformation numbers were 0.55, 0.85, and 0.78, respectively. IBT delivers a much lesser dose to OARs, compared to IMRT and SBRT. Especially, the mean rectal dose was better with IBT as compared with IMRT and SBRT (58cGy vs. 212cGy, 192cGy, respectively).

**Conclusion:** IBT provides an acceptable dose distribution in terms of reduced dose to normal structures compared to the EBRT techniques. High dose rate IBT could be a better choice for the salvage RT of recurrent uterine carcinoma with respect to the bowel sparing.
**P-143 Surgical outcome and morbidity of risk reducing salpingo-oophorectomy for BRCA1/2 mutation carriers**

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**Objective:**
Women with a BRCA1/2 mutation have an increased risk of developing ovarian cancer. The only effective strategy to reduce this risk may be receiving a risk reducing salpingo-oophorectomy (RRSO). The aim was to evaluate the short-term surgical outcome and morbidity of this surgery.

**Methods:**
We analyzed medical data from 11 BRCA mutation carriers (9 BRCA1 and 2 BRCA2) who had undergone a RRSO at the Cancer Institute Hospital (Tokyo) between September 2011 and August 2013.

**Results:**
This study includes 9 BRCA1 and 2 BRCA2 mutation carriers. The median age at RRSO was 49 years (45-59) in the BRCA1 group, 45.5 years (45-46) in the BRCA2 group and 6 patients (51.5%) were premenopausal. Ten patients (90.9%) had a history of breast cancer. All patients had a complementary hysterectomy. The RRSO was performed by primary laparotomy (n=8) or laparoscopy (n=3). Mean operation time was 112.1 minutes and mean blood loss was 55.6 mL in laparotomy, while it was 243.7 minutes and 23.3 mL in laparotomy. Median hospital stay after operation was 6 days (8-10) in laparotomy and 6 days (5-6) in laparoscopy. Postoperatively, 2 minor complications were observed. No occult cancer was detected at the time of surgery. No development of peritoneal cancer or newly diagnosed breast cancer have been observed after surgery.

**Conclusion:**
RRSO for BRCA1/2 mutation carriers seems to be a safe procedure. Further observation is needed to evaluate the efficacy of this surgery.

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**P-144 Pathology of fallopian tubes surgically removed from 179 patients**

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**Background:** The paradigm concerning ovarian carcinogenesis has shifted in this century. The majority of pelvic serous adenocarcinomas arise in the distal fallopian tube.

**Aims and Method:** To discern this concept, surgically removed fallopian tubes from 179 patients in 2012 have been pathological examined, and the fimbria has been processed by the “SEE FIM protocol”.

**Result:** The patients included 22 cases with ovarian cancer, 7 with cervical cancer, 19 with endometrial cancer, one with peritonitis carcinomatosa, 17 with benign ovarian tumor, 35 with myoma, 41 with ectopic pregnancy, 37 with other disease. A chronic or acute inflammation was present in 44 cases. A Walther cell nest or transitional metaplasia was found in 36 cases. Endosalpingiosis was found in 31 cases. Tubal intramural carcinoma was observed in 5 cases of ovarian serous adenocarcinoma. Psammoma bodies were observed in 5 cases. In 23 cases, epithelial proliferation was observed in the fimbria, and p53 nuclear accumulation (p53 signature) was identified strongly in 16 cases of benign non-ciliated cells indicating the tumorigenic capability of tubal epithelium.

**Conclusion:** When considering the etiology of pelvic serous carcinoma, salpingectomy would be recommended particularly post-reproductive woman.
P-145 Treatment and prognosis of primary peritoneal carcinoma: Study of 10 cases

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Background and Aims: Primary peritoneal carcinoma (PPC) is a rare gynecological malignancy and considered to be similar to advanced ovarian carcinoma in terms of histological types and treatment modalities. The aim of this study was to investigate the clinical findings, treatment, and outcome of PPC, and elucidate the proper treatment of PPC.

Methods: Data from the files of 10 PPC patients who were managed at National Hospital Organization Kyoto Medical Center between January 2005 and December 2012 were evaluated.

Results: The median age at the time of diagnosis was 64.5 years (range, 34 to 87). All ten patients had clinical stage 3. The principal presenting symptom was abdominal distension due to ascites. The most common histological type was serous papillary adenocarcinoma. The serum CA-125 levels at diagnosis were elevated in all patients, with a median level of 713.5 U/ml (range, 223 to 7802 U/ml). All patients were treated with paclitaxel and carboplatin chemotherapy. Three patients were treated with chemotherapy only. Seven patients had died from the disease less than 45 months (median 22 months, range 15 to 45). Three patients were alive.

Conclusions: The results of our study showed a poor prognosis in PPC patients. The serum CA-125 was a useful marker to evaluate the residual or recurrent disease. Chemotherapy and abdominal centesis alleviated the ascites retention and the abdominal distention, and improved the QOL of recurrent patients. Cure of PPC was still hard to be obtained.

P-146 Primary peritoneal cancer: Study of 14 cases and comparison with epithelial ovarian cancer

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Background and Objectives: Primary peritoneal carcinoma (PPC) is histologically similar to ovarian serous carcinoma. But the biochemical features remain obscure. The aim of this study was to investigate the clinical findings, treatment, and outcome of PPC patients compared with epithelial ovarian cancer (EOC) patients.

Methods: We retrospectively reviewed the data from 14 patients with PPC and 219 patients with EOC treated our hospital from January 2005 to December 2012. The review included demographic data, pathologic findings, treatments, and outcomes.

Results: In PPC patients, 2 patients had stage IIIb, 12 had stage IIIc, and tumor histology revealed serous papillary carcinoma in 12 and poorly differentiated adenocarcinoma in 2 patients. Among the 12 patients who underwent primary surgery, optimal tumor reduction was achieved in two (16.7%). Among the two patients who received neoadjuvant chemotherapy, optimal reduction was achieved in two (100%). In comparison with EOC, the mean age was significantly greater for PPC patients (62.5 ± 8.4 years) than for EOC patients (56.3 ± 11.3 years) (P = 0.045). There was no significant difference in serum CA-125 levels. The 5-year survival rate for the PPC patients and EOC patients was 61.1% and 61.7%, respectively (P = 0.78). The 5-year survival rate for the PPC patients and stage III serous EOC was 61.1% and 43.8%, respectively (P = 0.062).

Conclusions: When treatment strategies for EOC are applied to PPC, the survival of PPC patients may be similar to that of EOC patients. Cytoreductive surgery combined with pre/postoperative platinum-containing chemotherapy may be effective for PPC patients.
P-147  Primary carcinoma of the broad ligament with para-aortic lymph node metastasis: A case report

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Background: Primary carcinoma of the broad ligament is extremely rare; therefore, only a few cases have been reported. In these reported cases, there is no case with lymph node metastasis.

Case: A 62-year-old woman, 2 gravid, 2 parity, presented with a month history of genital bleeding and abdominal distention. Transvaginal sonography and enhanced computed tomography showed 5cm cystic mass of the left ovary and adjacent 10cm irregular solid tumor. There was no sign of metastasis. Serum CA125 was elevated to 3364 U/ml. We diagnosed this tumor was a malignant ovarian tumor and performed laparotomy. As a surgical finding, we found 10cm irregular tumor was present in the left adnexa and this tumor was completely separated from the uterus and left ovary which had 5cm simple cyst. Left fallopian tube was attached to the tumor and compressed by the tumor. There was no other macroscopic mass in the pelvis and abdomen. Frozen section revealed this tumor was adenocarcinoma, so we performed a total hysterectomy, bilateral salpingo-oophorectomy, omentectomy and pelvic and para-aortic lymph node dissection. Microscopic examination revealed serous papillary adenocarcinoma of the left broad ligament, and this tumor was separated from the fallopian tube. We also found lymph node metastasis only in the para-aortic node. We administered six courses adjuvant chemotherapy with paclitaxel and carboplatin. She has been under follow up and without recurrence for 27 months.

Conclusion: In the primary carcinoma of the broad ligament case, we have to consider the possibility of lymph node metastasis.

P-148  Borderline ovarian tumor with extraovarian implants: A clinicopathologic report of five cases

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Background: Borderline ovarian tumors (BOTs) are deferring from ovarian carcinoma by absence of stromal invasion, and characterized with good prognosis. Extraovarian implants were possible but rare. Herein, we report clinicopathologic findings in 5 cases of BOTs with extraovarian implants.

Cases Report: A 52 y/o female presented right serous BOT with vascular invasion, ipsilateral tubal implantation and peritoneal non-invasive, desmoplastic implants, without pelvic lymph nodes involvement. Adjuvant chemotherapy was not given. A 28 y/o female presented left mucinous BOT, with microscopic capsular invasion and cul-de-sac peritoneal implantation, without pelvic lymph nodes involvement. A 31 y/o female presented bilateral moderate differentiated serous BOT with micropapillary pattern and omentum and peritoneal implantation, without pelvic lymph nodes involvement. A 25 y/o female presented bilateral serous borderline ovarian tumor with peritoneal implantation and pelvic lymph nodes metastases. There are also non-invasive implants noted over fallopian tubal surface and colonic serosa, while both invasive and non-invasive implants noted over the omentum. A 33 y/o female, presented right ovarian microinvasive carcinoma arising from serous borderline tumor with omentum and right pelvic lymph nodes invasive implantation. There is also left ovarian surface papillary excrescences attached to the omentum noted. All above cases present elevated pre-operative CA-125 round 200-500 mlU/ml and pelvic adhesion grossly with proved implantation.

Conclusion: The role of several pathological patterns presented in BOTs to predict recurrence of invasive disease is still controversial. The possible distal metastasis, invasive implants and disease related mortality in some cases still warranted careful staging operation and pathological examination.
P-149 Risk factors for recurrence in patients with ovarian serous borderline tumor

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Objective: The objective of this study was to identify risk factors for recurrence in patients with ovarian serous borderline tumor (SBT), an origin of which has been reported to be the fallopian tube.

Methods: We performed a retrospective review of patients with ovarian SBT diagnosed and treated at our institution between January 2001 and January 2013.

Results: Nineteen women were identified. Median age was 49 years (range, 20-77 years). Eighteen patients had stage I disease and the other patient had stage II disease with a fallopian tube lesion and noninvasive implants. Bilateral ovarian involvement was observed in four patients (21%); stage I, 3 and stage II, 1). All the 19 patients were treated by surgery alone. None of 16 patients who had undergone unilateral or bilateral salpingo-oophorectomy with or without hysterectomy developed recurrence. Three patients (16%) who had undergone cystectomy developed recurrence 13-41 months after initial surgery; one patient had undergone unilateral cystectomy for unilateral ovarian involvement and two patients had undergone bilateral cystectomy for bilateral ovarian involvement (one patient with a fallopian tube lesion had also undergone unilateral salpingectomy). At the time of recurrence, two patients who developed recurrence in one ovary underwent fertility-sparing surgery again and the other who developed recurrence in both ovaries underwent radical surgery. These 3 patients were alive without disease after second surgery (22-93 months).

Conclusion: Ovarian SBT recurrence was associated with treatment with cystectomy alone and bilateral ovarian involvement. Resection of the fallopian tube ipsilateral to the ovarian tumor may be necessary to prevent SBT recurrence.

P-150 A case of dematomyositis as a paraneoplastic syndrome with ovarian serous adenocarcinoma

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A fifty eight years old women presented with erythematous multiple skin lesion on face and extremities for 3 months at department of Dermatology. Conservative management didn't make improve the symptoms. With the impression of dermatomyositis, work-up for hidden malignancy revealed adnexal mass with elevated CA125 (447.10 U/mL).

The Cytoreductive surgery was performed and revealed serous cystadenocarcinoma FIGO stage IIIc with pathologic confirmation. Adjuvant chemotherapy followed the surgery. After completion of the chemotherapy, the skin lesions improved well. The patient has survived for 16 months without evidence of disease.

The author reports a rare case of paraneoplastic presentation with ovarian serous adenocarcinoma and dramatic improvement of skin lesion after treatment of ovarian cancer. The women with refractory skin lesion like the dermatomyositis should be evaluated for gynecologic malignancy, especially ovarian cancer.
Objective: Cervical cancer is the most common gynecologic malignancy, while ovarian cancer is commonly diagnosed and particularly deadly gynecologic malignancy worldwide. It ranks among the top ten diagnosed cancers and top five deadliest cancers in most countries. Synchronous multiple primary tumors of the female genital tract are relatively rare, comprising only 1-6% of all genital neoplasms. Synchronous primary neoplasms between cervical squamous cell carcinoma and ovarian cystadenocarcinoma are rare.

Case Report: PI A0 47 years old complained of lower abdomen discomfort with difficulty in urinating. After having a pap test, cervical biopsy, CT scan, gynecologic examination, she was diagnosed with cervical cancer stage IIA2. CT scan showed tumor extend from cervix to uterus, left parametrial and perirectal fat, subserous myoma in uterine fundus, normal multiple bilateral ilio-pelvic lymph nodes. Patient received NAC (cisplatin, vincristine, bleomycine) 3 times before radical hysterectomy. During operation, we found a 11 × 9 × 6 cm tumor originating from left ovary. Histopathology conclusion: non-keratinized squamous cell carcinoma of the cervix, chronic vaginitis, cystadenocarcinoma musinosum et serosum papilliferum of the ovary, squamous cell carcinoma metastasis in right iliac nodes. Patient then having post operative carboplatin-paclitaxel chemotherapy for 6 times. Conclusion: Synchronous tumors of cervix and ovary with different histopathology are rarely reported. The underlying phenomenon responsible for these is not identified yet. Determination whether it is synchronous primary tumor or metastasis is essential for prognosis and further treatment. The synchronous tumors with different histology deserve further studies to enhance our knowledge of these rare though potential occurrences.

Keywords: synchronous primary malignancies, cervical cancer, ovarian cancer

P-152 Large borderline ovarian tumour in an elderly woman: A case report

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Borderline tumours were first described by Taylor in 1929. It comprises a unique group of non-invasive ovarian neoplasms, commonly seen in younger women, with excellent prognosis. There are no pathognomonic ultrasonographic features and CA125 is elevated only about 40-50% of stage 1 disease. These tumours can be associated with peritoneal implants. Most common histological type is serous.

We report a case of 64 year old woman diagnosed with an ovarian borderline tumour of serous type. She was referred to the tertiary cancer centre suspecting an ovarian malignancy. Her CT scan confirmed a large pelvic tumour with solid and cystic components. Her CA 125 was normal.

She had a laparotomy followed by Total Abdominal Hysterectomy and Bilateral Salpingooohrectomy. A left ovarian tumour weighted 12 kg was removed. Unremarkable uterus with right ovary and absence of peritoneal implants categorised the disease as Stage I. She had uncomplicated recovery without pelvic recurrences for just over 5 years follow-up.

The histology showed a multi-loculated cyst lined by serous type epithelium with cellular stratification, focal hierarchical papillary excrescences and detached cell clusters within the lumen. The cells showed mild to moderate cytological atypia. There was no stromal invasion or severe cytological atypia.

Multiple case reports have being published in the literature, but this can be special due to its enormous size and the age of this lady.
P-153 Clinical analysis of 373 cases of mucinous borderline ovarian tumor in single institute in Korea
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Objectives:
Classification of mucinous borderline ovarian tumor (MBOT) is very complicated, the clinical course about recurrence and metastasis of which is not completely concluded. The authors give a new opinion about necessity of closed follow-up for recurrence detection of pure MBOT among a lot of controversy.

Methods:
Medical records and pathologic slides were reviewed retrospectively about the clinical course of 373 cases of MBOT in Asan Medical Center in Korea from 1991 to 2012.

Results:
Total 11 cases recurred and were reviewed again by pathologist. 3 cases had initially intraepithelial carcinoma (IEC) component on review. 6 of the others 8 cases recurred as pure MBOT. Pathologic review could not be performed in 2 cases, which eventually recurred as invasive carcinoma (IC). Inferring from their poor prognosis, they might be originally IEC or IC. The recurrence rate of pathologically reviewed pure MBOT was 1.1% (4/373). A thing worthy of note is that 3 cases recurred at the contralateral ovary, 2 cases were endocervical type and 1 case was initially mixed epithelial type arising from endometriosis. That might mean not recurrence but newly developed tumor associated with endometriosis. Moreover it could be progression of residual tumor because most patients were young women and surgeon would debulk less radically.

Conclusions:
The recurrence rate of pure MBOT might be much lower than rate reported so far. The authors suggest carefully that if surgeon debulk completely in non-mixed, non-endocervical type of pure MBOT with stage Ia and Ib, the physician might reduce or omit unnecessary repetitive checking up of tumor marker and imaging study for the long term.

P-154 A case of ovarian mucinous borderline tumor of intestinal-type with focal squamous differentiation; Histological aspect
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A 57-year-old patient was presented with a pelvic tumor. MRI showed the presence of a cystic pelvic tumor with multiple cysts. The serum level of CA19-9 and CA125 was elevated to 7249 and 294 U/ml, that was suspected to be malignancy. Total abdominal hysterectomy and bilateral salpingo-oophorectomy was performed.
In gross examination, the left ovarian tumor was a large oval shaped measuring up 17cm. The surface was smooth and the sectioned surface showed multilocular filled with viscous fluid. Microscopically, multiple cysts were lined by single mucinous columnar cells with basally located nuclei, but the other areas were characterized by the presence of epithelial cells that were crowded and stratified and often formed papillae. The epithelium had the morphologic appearance of intestinal epithelium with goblet cells and Paneth cells. Furthermore, areas of squamous differentiation were presented, as well and this was characteristic point of this tumor. The glands and cysts lumen contained mucin with areas of mucin extravasation.
This tumor was histologically diagnosed mucinous borderline tumor of intestinal-type with focal squamous differentiation and pseudomyxoma ovarii. In addition, the endometriosis was not seen in the background and the component of teratoma was not recognized.
Generally, it was known that the findings of squamous differentiation in the ovarian mucinous tumor were observed in mixed-epithelial papillary cystadenoma of borderline malignancy of mullerian type, however, such report in intestinal type tumor were not seen. We report a rare case of ovarian mucinous borderline tumor of intestinal-type with focal squamous differentiation.
Malignant Brenner tumors of the ovaries, with unilateral leg swelling: A rare case report and review of literature

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Background: Ovarian Brenner tumors are rare epithelial tumors that account for 1.5% of all ovarian neoplasms, and furthermore, less than 2% of the tumors present features of borderline or malignant Brenner tumors (MBTs). It is reported that half of the chief complaints of MBTs were abdominal pain, but a case presented with unilateral leg swelling is previously unreported.

Case: A 70-year-old woman presented with a complaint of right leg swelling after visiting several clinics of orthopedics and internal medicine. The image of CT showed bilateral ovarian tumors, a 9-centimeter liver tumor, a band of swollen lymph nodes from the pelvis to the supravacular area, and the invasion to pancreatic body. Ascites was not found. Each ovarian tumor was solid and 4-5 centimeters in diameter by the MRI image. Elevated liver enzymes and coagulation abnormalities were detected. Right external iliac vein was compressed by metastatic obturator lymph nodes and partial thrombosis.

Gastroenterological cancer was ruled out by the endoscopy. Cholangiocellular carcinoma was also suspected. To identify the origin, biopsy of supravacular lymph node was performed. Histological findings showed that a nested pattern consisting of large, closely packed, irregular aggregates of transitional epithelial cells. Foci of calcification are prominent. Immunohistochemical staining demonstrated positivity for cytokeratin 7, cytokeratin 18, CEA, and vimentin, but negatively to cytokeratin 20. She was diagnosed as MBT of the ovaries in Stage IV.

Anticoagulation therapy and chemotherapy has been started.

Conclusion: Presence of unilateral leg swelling associated with ovarian tumors should raise the possible diagnosis of malignant Brenner tumor.

Ovarian Brenner tumors could be salvaged by intensive systemic chemotherapy: 10 cases analysis in a single institute

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Ovarian Brenner tumors are rare epithelial tumors that account for 1.5% of all ovarian neoplasms. Only about 1% of Brenner tumors are malignant. So far there is no established tumor marker for malignant Brenner tumors. The mainstay of treatment is surgical resection, but the exact regimen and benefit of adjuvant therapy remain unknown. We report on 10 cases with malignant Brenner tumor of the ovary including three recurrent cases with favorable prognosis after chemotherapy.

Out of 78 patients with Brenner tumor of the ovary who were treated at Asan Medical Center over a 10-year period from 1991 to 2012, 10 cases were retrospectively reviewed from hospital electronic medical records.

The median age of the study population was 56 years. Tumor marker showed no significant association with either tumor burden or stage. The mean follow-up was 280 months. During follow-up, recurrence was detected in 3 patients. The median recurrence time was 22 months. Three recurrent cases show favorable results. One case of stage IV showed currently no evidence of disease during 15 months after last chemotherapy (total survival duration TSD 34 months). Another case of stage IIIC showed 39 months of survival after last chemotherapy (TSD 75 months). One patient of the other case of stage IIc is currently alive with disease during 65 months after recurrence and have been managed with chemotherapy (TSD 87 months).

The role of adjuvant chemotherapy in malignant Brenner tumor is unclear because of its rarity. But our data showed the systemic chemotherapy have some therapeutic role in these patients even in the recurrent setting.
P-157 Prognostic factors, recurrence and fertility outcome in borderline ovarian tumours: Experience from a regional cancer centre

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Objective: To evaluate the prognostic factors, recurrence and fertility outcome in borderline ovarian tumors. This retrospective study included 56 patients with borderline ovarian tumors treated at the Regional Cancer Centre (RCC), Trivandrum from 2005 to 2010. Median follow up was 32.5 months and mean age at diagnosis was 33.5 years. There were 28 (50%) complete surgeries, 13 cystectomies and 15 ovariectomies. Histopathology was 23 (41%) serous, 32 (57%) mucinous and 1 (1.8%) endometrioid. 48 (85.7%) had stage I disease, 2 (3.6%) had Stage II and 6 (10.7%) had stage III disease at diagnosis. 26.8% had microinvasive disease and 14.3% micropapillary disease. 9 (16.1%) had peritoneal implants, 8 of which were noninvasive. 17 (30.4%) had recurrence, 9 serous and 8 mucinous. Mean time to recurrence was 32.9 months. 62.5% with micropapillary disease, 46.7% with microinvasive disease and 77.8% with peritoneal implants recurred. 69.2% of cystectomies, 26.6% ovariectomies and 14.2% complete surgeries recurred. Among recurrences 9 (100%) cystectomies and 2 (50%) ovariectomies involved ipsilateral ovary while 2 (50%) ovariectomies involved contralateral ovary. Following complete surgery, 1/4 recurred in ipsilateral ovary and 3/4 in pelvic peritoneum. There were no tumour related deaths, 10 of 16 (62.5%) patients who attempted conception after surgery had successful childbirth. Micropapillary disease, peritoneal implants and conservative surgeries had a significant association with recurrence.

Conclusion: Borderline tumours have a very good prognosis. Fertility sparing surgery may be considered even in advanced stages. Fertility outcome is good. Close follow up is needed to detect recurrences especially in patients with high risk factors who had conservative surgeries.

P-158 Malignant mixed mesodermal tumour of the ovary: A case series of 19 patients treated in KKII, Singapore from 2001 to 2011

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Introduction:
Malignant Mixed Mesodermal/Müllerian Tumour (MMMT) of the ovary is a rare form of ovarian cancer which is aggressive and has poor overall survival. Prognosis and predictive factors remain unclear. The optimal combination chemotherapy of choice is still controversial and our current knowledge depends on small retrospective case series. We present our experience from KK Women’s and Children’s Hospital, Singapore (KKII).

Methods:
Between 1 Jan 2000 to 28 Feb 2011, a retrospective review of the medical records of 19 patients diagnosed with MMMT of the ovary at KKII, Singapore was conducted. Case records of the patients were reviewed to determine the demographics, symptoms on presentation, co-morbidities, pathology and clinical information regarding the chemotherapeutic regimes, response, toxicity, complications and survival.

Results:
The age at diagnosis ranged from 36 to 82 years with a mean of 60.9 years. The majority of the patients were Chinese, parous and post-menopausal. At presentation, there were 2 patients in stage I (10.5%), 6 in stage II (31.6%), 6 in stage III (31.6%), 3 in stage IV (15.8%) and 2 patients whose stage was unknown (10.5%). Overall median survival for the 19 patients was 6 months. For patients that had paclitaxel/carboplatin adjuvant chemotherapy post optimal debulking surgery, their median survival was 12 months compared to 42.5 months for those who had cisplatin/ifosfamide.

Conclusion:
Although survival from MMMT ovary is poor, from our experience, adjuvant chemotherapy post optimal debulking surgery improves survival duration. An aggressive approach to surgery and combination chemotherapy of cisplatin/ifosfamide appears to be an effective treatment.
Malignant mixed Mullerian tumor of the ovary

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Malignant mixed Mullerian tumor or carcinosarcoma of the female genital tract is a rare neoplasm. It is a highly aggressive tumor, which usually originates in the uterus, and MMMT of the ovary is very rare. The median survival of patients with MMMT is around 8-16 months, and more than 70% of patient die when the disease at 1 year despite the treatment. The optimal treatment for ovarian MMMT is also debatable partly though the histogenesis of MMMT is controversial. Due to the aggressive nature of this tumor, systemic chemotherapy is usually recommended. However, there is a few consensus about the optimal combination chemotherapy for the ovarian MMMT as a result of its rare occurrence. Debulking surgery followed by chemotherapy is the treatment of choice for this type of malignancy. However, studies supporting this approach are extremely limited.

The patient is a 67 year old, G6P5 (3015) who presented with hypogastric mass. She underwent exploratory laparotomy, total hysterectomy with bilateral salpingo-oophorectomy, infracolic omentectomy under regional anesthesia. Intraoperatively, there was minimal ascites.

The right ovary was converted into a multiloculated, multiseptated predominantly cystic mass with solid areas, measuring 16×10×12 with timorous implants on the serosal surface. Residual tumor measured 3×4 cm at the rectosigmoid colon and 2×2 cm at the cul de sac areas. Histologic examination of the left ovary showed malignant mixed Mullerian tumor, homologous type. The final diagnosis was mixed Mullerian tumor, left ovary stage IV.

Ovarian carcinosarcoma: Contrasting outcomes from two cases

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Objective:
Ovarian carcinosarcoma (OCS) is rare, consisting of malignant epithelial and mesenchymal components. Because of the aggressiveness and poor prognosis of this condition, a standard therapeutic approach has not been established. Here, we report two contrasting outcomes of OCS treatment.

Cases:
Case 1: A 49 year old, G3P1 woman presented at our institution with abdominal pain. Imaging examination revealed a swollen left ovary and intra-abdominal dissemination. We first performed surgery, and the postoperative diagnosis was stage IIIb homologous OCS. There was no sign of residual tumor after surgery. Six cycles of adjuvant chemotherapy consisting of paclitaxel and carboplatin (TC therapy) was administered.

Case 2: A 67 year old, G3P2 woman presented with worsening abdominal fullness. CT revealed a huge pelvic mass, intra-abdominal dissemination, and a large amount of ascites. To determine the pelvic mass characteristics, the patient underwent surgery. Unfortunately, we could not remove the tumor completely; suboptimal surgery was performed. The postoperative diagnosis was stage IIIc heterologous OCS. Follow-up adjuvant TC therapy was administered.

Results:
Case 1 has survived for 4 years after surgery without further treatment and she is still intact. In contrast, the postoperative course of Case 2 was not smooth because of the poor chemotherapeutic response. She has survived for 8 months after surgery with rapid residual tumor growth and needs further treatment.

Conclusions: We present two OCS cases with the same therapeutic approach and similar postoperative stages, but different outcomes. Pathologically, rhabdomyosarcomatous tissue was the major tumor component in Case 2, which was possibly responsible for the poor prognosis.
P-161  Dysgerminoma in gonadal dysgenesis: A case report
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This is a case of 24 year old, phenotypically female, single, nulligravid with primary amenorrhea and sexual infantilism who presented with abdominal enlargement of 8-month duration. Work up including ultrasound revealing large abdomino-pelvic mass. Further diagnostic examinations were also done to investigate the cause of primary amenorrhea, which lead to the diagnosis of pure gonadal dysgenesis also known as Swyer syndrome. Karyotyping showed 46XY. On Exploratory laparotomy, both ovaries were converted to predominantly solid mass which was adherent to the cul de sac, posterior uterine wall and sigmoid colon. Histopathologic report revealed Germ cell tumor, dysgerminoma and embryonal carcinoma were both considered, with extension to the cervical stroma. The risk for malignancy in such cases will be discussed.

P-162  A case of ovarian immature teratoma with gliomatosis peritonei and pseudo-Meigs’ syndrome complicated with cerebral venous thrombosis during cisplatin-based chemotherapy
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Gliomatosis peritonei and pseudo-Meigs’s syndrome are well known but do not frequently arise from ovarian immature teratoma. We present a case of ovarian immature teratoma in 25-year-old Japanese woman. The patient was admitted to our hospital because of cough and abdominal enlargement for two months. Magnetic resonance imaging, computed tomography and ultrasonography showed a predominantly solid tumor about 20 × 15 cm in size occupied in whole pelvic cavity, massive ascites and pleural effusion. The patient underwent laparotomy under malignant ovarian tumor as preoperative diagnosis. The patient had a large amount of ascites, which was negative for malignancy on cytology. Surgical procedures were performed included right salpingo-oophorectomy for right ovarian tumor weighing 3340g, left ovarian cystectomy, partial omentectomy and peritoneal sampling. Microscopic examination revealed immature teratoma grade 2 in the right ovarian tumor, mature cystic teratoma in left ovarian tumor and gliomatosis peritonei. The surgical stage was stage IC (b). Following surgery, ascites and pleural effusion promptly disappeared and these findings are in agreement with pseudo-Meigs’s syndrome. During adjuvant cisplatin-based chemotherapy consisting of cisplatin, etoposide and bleomycin, the patient developed cerebral venous thrombosis. Cisplatin-based chemotherapy is known as a risk factor for coagulation disorders and thrombosis. After anticoagulant therapy, the patient was enabled to resume chemotherapy.
Yolk sac tumor of 46XY female, suspected sex chromosome abnormality during an operation: A case report

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Introduction:
Yolk sac tumor (YST) of the ovary is a rare germ cell tumor comprising 1% of all ovarian malignancy. Although YST has a high grade malignancy, the recent progress of chemotherapy has improved its prognosis and made ovarian function and fertility preserved. But pure gonadal dysgenesis increases a risk developing gonadoblastoma and dysgerminoma. Therefore, prophylactic gonadectomy is recommended.

Case presentation:
A 15-year-old girl with a one-month history of abdominal distension was admitted to our department. MRI revealed a giant polycystic tumor, small uterus, and absent opposite ovary. A level of alpha fetoprotein was elevated to 43 million (ng/ml).

She underwent a laparotomy. The tumor had grown up to hypochondrium, and formed in the left ovary. The right ovary was atrophic. The left adnexectomy, omentectomy and biopsy of the right ovary were performed. A histological examination revealed a yolk sac tumor, stage Ia. The biopsy specimen of the right ovary showed germ cells. Sex chromosome abnormality was suspected by absence of menstruation and her immature ovary and uterus. As a result, her sex chromosome was XY.

Post-operatively, she underwent 3 courses of chemotherapy (BEP). Her clinical course is uneventful for 5 years without recurrence or metastasis. Although her parents were notified the necessity of the right gonad removal, our proposal is not accepted.

Discussion and conclusion:
In this case, prophylactic gonadectomy should be recommended to avoid the risk of malignancy. Our proposal to perform prophylactic gonadectomy was not accepted by her family. We will continue to give possible efforts.

A pure non-gestational ovarian choriocarcinoma in a 40-year-old women: DNA polymorphism analysis after hand assisted laparoscopic surgical (HALS) staging

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Pure primary ovarian choriocarcinoma is a extremely rare germ cell tumor that can be of gestational or non-gestational origin. Non-gestational choriocarcinoma of ovary (NGCO) accounts for 0.6% or less of all ovarian neoplasm. Non-gestational choriocarcinoma (NGCO) has been found to be resistant to single-agent chemotherapy and has a worse prognosis than gestational choriocarcinoma, but it is difficult to determine the two types by routine histologic examination.

We describe a pure NGCO of a 40-year-old multigravida woman. After frozen section diagnosis of left ovarian choriocarcinoma, HALS staging operation (Laparoscopic assisted vaginal hysterectomy, bilateral salpingo-oophorectomy, pelvic & paraaortic lymphadenectomy, omentectomy, both paraaortic gutter biopsy) was performed. We confirmed its non-gestational origin by DNA polymorphism analysis. All tested microsatellite markers had identical DNA profiles with same allelic sizes between the tumor and the myometrium of the patient, indicating that both tissues were originated from the same person. This result supported non-gestational origin. The patient had four cycles of combination chemotherapy (BEP regimen) after HALS staging. The patient’s β-hCG level has been maintained below the normal range, and there has been no recurrence 32 months after the completion of treatment.

This case demonstrates the usefulness of HALS staging and DNA polymorphism analysis for extraterine choriocarcinoma.
P-165 Peptide YY-positive ovarian carcinoid tumors associated with constipation: Report of two cases

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Of the primary ovarian carcinoid tumors, insular carcinoid tumor is the most common type and associated with typical carcinoid syndrome caused by serotonin production in Western countries. In contrast, strumal and trabecular carcinoid tumors are primarily reported in Asian countries. They are clinically related to constipation induced by peptide YY (PYY), an inhibitor of intestinal mobility. We report two Japanese cases of PYY-positive ovarian carcinoid tumors relieving constipation after tumor removal.

Case 1: A 24-year-old pregnant woman who had suffered from constipation was found to have a right adnexal solid mass with high intensity components on T1-weighted magnetic resonance imaging (MRI) and exhibited transient serum carcinoembryonic antigen elevation. The patient underwent a right salpingo-oophorectomy at 13 weeks of gestation and a pathological diagnosis confirmed a strumal carcinoid tumor with mucinous cystadenoma. Case 2: A 70-year-old woman with habitual constipation was detected to have a right adnexal mass by a follow-up computed tomography while undergoing breast cancer treatment. MRI revealed a solid mass with high signal components on T2-weighted image. Hysterectomy, bilateral salpingo-oophorectomy, and omentectomy were performed and an insular carcinoid with component of trabecular carcinoid was histologically determined. In respective carcinoid types, all neuroendocrine tumor cells similarly showed immunoreactivity with PYY. Each patient had a bowel movement every day soon after the surgery and was clinically diagnosed as stage Ia.

The expression of PYY was first observed in insular carcinoid tumor of the present Japanese case, indicating that racial differences may contribute to diverse peptide production in ovarian carcinoid tumors.

P-166 Evaluation of squamous cell carcinoma arising from mature cystic teratoma

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Aim: To investigate squamous cell carcinoma arising from mature cystic teratoma, we performed retrospective case study.

Materials and methods: Medical records including pathological reports were analysed from January, 2007 through September 2013 in our department. Age, value of tumor marker (SCC, CEA, CA125, CA19-9), maximum tumor diameter, and pathological stage were analysed.

Results: Eight patients with squamous cell carcinoma arising from mature cystic teratoma were retrieved. The value of average and standard deviation of the each factors in patients were as follows: age, 56.9±9.6; SCC, 12.9±10.8 ng/mL; CEA, 9.8±11.3 ng/mL; CA125 56.3±59.2 U/mL; CA19-9 997.9±1795.1 U/mL; maximum tumor diameter 15.5±3.9 cm. The stage of patients were as follows: pT1 4 patients; pT3 4 patients.

Conclusions: Characteristics of the patients with squamous cell carcinoma arising from mature cystic teratoma were old age of the patient, large sized tumor and high value of tumor markers of SCC, CEA, CA125, CA19-9, Especially preoperative value of SCC was useful for the differential diagnosis from benign mature cystic teratoma of the ovary.
P-167 Squamous cell carcinoma arising in a mature cystic teratoma
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Up to twenty five percent of ovarian masses originate from germ cells, and most of these are mature cystic teratomas. The development of malignancy from the various tissue components of dermoid cysts is rare and typically occurs in postmenopausal women. Here we present a case of a 42 year old with a huge abdominopelvic mass detected on ultrasound. The patient underwent exploratory laparotomy, left salpingo-oophorectomy. Intraoperatively, the left ovary measured $20 \times 22 \times 8$ centimeters and was inadvertently ruptured revealing serous yellowish fluid with sebum and hair. Thus, the intraoperative diagnosis was ovarian new growth, probably dermoid cyst. Histopathologic examination of the specimen however revealed squamous cell carcinoma, well-differentiated, arising from a mature cystic teratoma. Patient was then referred to the Gynecologic Oncology section and is currently undergoing weekly external beam radiation therapy with weekly Cisplatin.

P-168 Two cases of paraneoplastic limbic encephalitis for ovarian immature teratoma
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Paraneoplastic limbic encephalitis (PLE) is one of many conditions that is representative of paraneoplastic neurological syndrome (PNS). PLE presents with symptoms such as impressibility and recognition disorder, hallucinations, character changes, convulsions and disturbance of consciousness. We are reporting the following two cases: After the impressibility and convulsions appeared we removed an ovarian tumor and it appears that the symptoms have receded. Antibodies against NMDA receptor was positive in both cases.

One case is a 22 year old, non-gravida female. She experienced disturbance of consciousness and was admitted to our hospital psychiatry unit. She had a head CT and blood test, findings were no abnormal results. A pelvic CT confirmed a $8.8 \text{cm (diameter)}$ right ovarian tumor. We suspected PLE and conducted a right adnexectomy. The pathological diagnosis was a grade 3 immature teratoma. Her confusion receded after surgery and 3 courses of BEP (Bleomycin, Etoposide, Cisplatin) was administered.

Another case is a 21 year old, non-gravida female. She experienced convulsions and obstacles with her memory, and was admitted to our hospital neurological unit. She had an electroencephalography and an examination of spinal fluid, the findings were no abnormal results. A pelvic MRI confirmed a $9 \text{cm (diameter)}$ left ovarian tumor. We suspected PLE and conducted a left adnexectomy. The pathological diagnosis was a grade 3 immature teratoma. Post operation, 3 courses of BEP was administered. After the first round of BEP was administered her impressibility symptoms receded. The Miyake type note signature test and the WMS-R test were used as an objective index of impressibility.
P-169  Ovarian lymphoma in pregnancy: Case report in Dr Cipto Mangunkusumo General Hospital Jakarta

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Objective: Improving skill and knowledge in managing a rare case of ovarian lymphoma

Method: Case report

Results: A 31 y.o female Gravida 1 with history of primary infertility 4 years came with abdominal and epigastric pain. She admitted 5 mo of pregnancy and according to 1st trimester Ultrasound was 23 wga. In physical exam, we found abdominal pain and defens muscular. Obstetrical examination revealed that the fetal heart rate was undetectable. On US examination we suspected a pregnancy with IUFD and a torsion of uterine fibroid and performed emergency laparotomy. Intraoperatively, we found ascites, gravid uterus, torsion on right ovarian tumor, lobulated mass from left ovary; hydrosalphing of the left tube, omental cake and suspected a bilateral malignancy of ovaries. Hysterotomy was then performed and baby IUFD not macerated 550 gram was delivered. We decided to do a HTO - SOB and omentectomy. The histopathological showed infiltration of lymphoid in left and right ovaries, fallopian tube and omentum. Tumor cells spreaded diffusey with big cells pattern and hyperchromatic nucleus and starry sky appearance. These correspond to Lymphoma malignum of internal genitalia. Immunohistochemistry correspond to non Hodgkin B cell Burkitt lymphoma.

Conclusion: Lymphoma can involve all genitourinary organs. Most pregnant women with NHL have aggressive and advanced stage disease. Because lymphomas presenting as ovarian tumors carry a poor prognosis, standard chemotherapy should not be delayed. Given the uncommon presentation of ovarian lymphoma a differential list should be thought for ovarian mass. Pathologically, germ cell tumors, undifferentiated carcinoma, and metastatic cancer are potential differential diagnoses.

P-170  Hemoperitoneum caused by spontaneous intratumoral bleeding of small bowel stromal tumor mimicking rupture of ovarian mass: A case report

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Background and aims: To present a rare case of hemoperitoneum caused by rupture of small bowel stromal tumor, initially diagnosed as ovarian mass rupture with internal bleeding.

Case report: A 47-year-old female went to our emergency department with abdominal fullness and pain for four days. The pain had progressively increased over the four days and accompanied by progressive abdominal distension with unstable hemodynamic condition. At emergency room, the laboratory data showed WBC 11220/ul Hb: 6.6 gm/dl and hsCRP: 15.32 mg/dl. Ultrasound and pelvic CT revealed left ovarian mass (7*8 cm) and large amount of ascites. After counseling gynecologist, this patient accepted emergent operation under the impression with ovarian mass rupture with internal bleeding. During operation, 1600 ml blood was suctioned and an invasive mass (10*8 cm) over distal jejunum with rupture and bleeding and carcinomatosis were found. Segmental resection and anastomosis of small bowel was performed by general surgeon. After operation, the patient had well recovery during hospitalization. The pathology report revealed malignant gastrointestinal stromal tumor (GIST) of small intestine with metastatic to omentum and strong membranes staining to CD117 and DOG-1.

Conclusion: Bleeding is a common presentation of GIST. For women with pelvic mass with abdominal pain and internal bleeding, clinician should be alerted to the unusual manifestation of intratumoral bleeding in small bowel stromal tumor.
**P-171** Ovarian cyst

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**Background:** In 2011-2012, totally 386 ovarian cyst surgeries were performed and out of them 100 cases were held by laparoscopic surgery in First maternity hospital.

**Materials and Methods:** In this study, were involved 100 ovarian cyst laparoscopic surgery cases which conducted in 2011-2012, women’s surgical ward of the First Maternity Hospital. Study was conducted using questionnaire including 24 questions.

**Results:** Education level of the women who involved in this study, 36% were middle, 12% were with low education level. Average age of the women was 31 years old, 38% or most percent from them was 18-25 year old women. Menarche was 14 years old. During menstruation 12 (24%) had pain and 38 (76%) no pain. And 8% of the women were with infertility, 4% were happened ectopic pregnancy. 4% of the women had used contraceptive drug.

**Clinical sign:** Abdominal pain was 21 (42%) patients, pain through leg was 15 (30%), no sign 5 (10%), and pain with back were 9 (18%) patients.

Regarding to this result 56% cases were endometroid cyst, it has shown that endometroid cyst has been increasing.

**Conclusion:** Late menarche and late pregnancy and delivery are influencing factors for ovarian cyst. Endometroid cyst is estimated most common cause of ovarian cyst. During post surgery period Laparoscopic cystectomy patient had less pain, quick recovery and a less in hospital days.

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**P-172** Prediction of non-malignant and malignant ovarian tumours by morphological sonographic evaluation

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The aim of this study was prediction of malignancy in clinically diagnosed ovarian tumours by using the ultrasonographic scores devised by Schillinger (1989), a prospective hospital based, analytical study was performed on patients with ovarian tumours in Central Women Hospital, Yangon from 1st July 2006 to 30th June 2008. One hundred and twenty patients who underwent laparotomy for ovarian tumour were included in the study.

Ultrasound assessment was done on every patient with ovarian tumour and scorings were given based on the ultrasound findings using the scoring system of Schillinger (1989). Laparotomy was performed and histopathological report was taken as the gold standard for the diagnosis.

The relationship of ultrasound score and malignancy status was statistically significant (P<0.001). If score III was used as an indicator of benign tumour, the sensitivity was 97.3%, specificity was 80%, PPV was 74.19% and NPV was 94.74%. If score IV was regarded as an indicator of malignant tumour, the sensitivity was 80%, specificity was 97.3%, PPV was 94.7% and NPV was 89.0%. The overall sensitivity and specificity of the ultrasound diagnosis by Schillinger score for ovarian tumour in the present study was 80% and 97% respectively.

The present study was able to prove that preoperative assessment of ovarian tumour by ultrasonographic scoring (Schillinger score) could predict whether it was a malignant or non-malignant.
P-173 Comparison of RMI, CA125, HE4, ROMA and ultrasound score for prediction of malignant ovarian tumor in patients with pelvic mass

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Introduction: Pre-surgical distinction of benign and malignant pelvic masses is critical role in ovarian cancer management. Several diagnostic test have been reported.

Objectives: To evaluate of RMI, CA125, HE4, ROMA and Sassone ultrasound score for the prediction of malignant ovarian tumor in women presenting with pelvic mass.

Materials and Methods: Women clinically diagnosed ovarian or pelvic masses undergoing elective surgery at Rajavithi Hospital between January 1, 2012 and December 31, 2012 were prospectively enrolled. Pelvic ultrasonography, CA125 and HE4 levels were examined preoperatively. The Sassone score, RMI and ROMA values were determined.

Results: A total of 260 women were evaluated. The resultant accuracy values using the AUC of ROC curve for RMI, CA125, HE4, ROMA and Sassone score to distinguish between epithelial ovarian cancer versus benign diseases showed 88.7%, 82.3%, 84.9%, 89.1% and 77.3%, respectively. The ROMA values had the highest accuracy in premenopausal women, whereas RMI values had the highest accuracy in postmenopausal women. Patients with borderline ovarian tumors and clear cell carcinoma revealed a high number of false negative cases in all of five parameters.

Conclusions: ROMA was the most accurate method, nevertheless ultrasound depending RMI had not significantly different in accuracy with ROMA in distinguish between benign and epithelial ovarian cancer. Moreover, the benefit of ROMA value revealed obviously in premenopausal women. However, borderline ovarian tumor and clear cell carcinoma were the defect of all five parameters.

Key words: pelvic mass, malignant ovarian tumor, RMI, CA 125, HE 4, ROMA, Sassone score

P-174 Comparison between CA-125, HE4 and combination of both CA-125 and HE4 to predict epithelial ovarian carcinoma

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Background: Ovarian cancer caused the most gynecologic cancer related death in the world. Better diagnostic triage will give earlier, better treatment and prognosis. CA-125 (Cancer Antigen) 125 has good sensitivity but low specificity. HE (Human Epidymis) 4 has been found to be sensitive and specific to predict EOC (epithelial ovarian carcinoma). HE4 and CA-125 have potential not only to predict EOC, but also for monitoring and screening in the future.

Objective: To evaluate the role of HE4, CA-125, and combination of HE4 and CA-125 as predictor for EOC.

Method: This research is a cross-sectional analysis observation study. 42 ovarian tumor patients who underwent surgery in dr. Soetomo Hospital were followed. HE4 and CA-125 serum concentration were examined 1 day prior to surgery. Pathology result were obtained 3 days after surgery, the result comprises of 17 EOC and 25 benign tumors. Then we analyze the result of CA-125, HE4, and Pathology.

Result: CA-125 has significant difference with pathology result (p = 0.001), meanwhile HE4 (p = 1.000) and combination of HE4 and CA-125 (p = 0.344) does not in establishing EOC diagnosis. Combination of HE4 and CA-125 has the best specificity (88.00%) compared to HE4 (80.00%), or CA-125 (20.00%). HE4 has the best sensitivity (76.47%) compared to CA-125 (70.59%), or combination of HE4 and CA-125 (38.82%)

Conclusion: Combination of HE4 and CA-125 has the best diagnostic value compared with HE4 or CA-125 in predicting EOC. There is a correlation between CA-125 with HE4 serum concentration in EOC patients, although any proof of pathophysiological connection between both have not been established yet.
P-175 Change in CA-125 levels during primary therapy between early relapsed versus late or non-recurrent Stage III/IV serous ovarian carcinoma

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Objectives: This study was conducted to compare change in CA-125 levels during primary therapy (debulking surgery followed by platinum based chemotherapy) between group I: shortly relapsed (disease free survival DFS<12mo) versus group 2 late or non-recurrent (DFS>60mo) stage III/IV serous ovarian carcinoma.

Methods: In a retrospective analysis, the CA-125 level in 99 patients with stage III/IV serous ovarian cancer who had achieved complete remission (CR) after primary therapy was determined and evaluated statistically in Asan medical center in Korea, from 2000 to 2010.

Results: Among 196 patients with stage III/IV serous ovarian carcinoma who had achieved CR after primary therapy from 2000 to 2010, 63 patients are assigned to group 1 according to DFS, 36 patients to group 2. Of 36 patients in group 2, CA-125 level of 34 patients was normalized (<35 IU/mL) at the end of the 2nd course of CT (94.4%). On the contrary, of 63 patients in group 1, CA-125 level of only 37 patients was normalized after 2nd course of CT (58.7%, p = 0.000). Up to 97% of both group reach normal CA-125 level at the end of 5th course of. Preoperative CA-125 was irrelevant between two groups (p = 0.610).

Conclusions: The CA-125 level of long-term survivors tend to normalize after second course of induction CT. This result can be used as favorable prognostic factor to expect long-term DFS in advanced serous ovarian cancer.

P-176 High plasma D-dimer level is associated with poor prognosis in ovarian carcinoma

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Objectives: Recent study has reported that increased plasma DD levels are associated with poor prognosis in patients with breast, lung, stomach, lower gastrointestinal tract, pancreas, prostate, brain and lymphatic cancers. The objective of the present study is to determine whether pre-treatment plasma DD levels are associated with the prognosis of EOC patients.

Methods: Subjects were 189 patients first treated at the University of Tsukuba Hospital and pathologically diagnosed with EOC. (November 2004 ~ December 2010) Survival rates were determined by the Kaplan-Meier method and log-rank test analyses. Multivariate analysis was performed using the Cox hazard model.

Results: Results of univariate analysis showed that pre-treatment DD ≥2.0µg/ml, stage IV, serous cystadenocarcinoma, LN swelling>10 mm (CT), CA125≥200 IU/ml were significantly associated with poor prognosis. When all these five variables were included in the multivariate model, DD ≥20µg/ml and stage IV were independent predictors of the poor prognosis.

Conclusion: In conclusion, our study demonstrates that pre-treatment increased plasma DD levels is an independent factor that predicts the poor prognosis in EOC patients. We suggests the assessment of pre-treatment plasma DD level is useful for the estimation of EOC prognosis.
P-177 Meta-analysis of the effects of beta blocker on survival time in cancer patients
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Background: Knowledge of the role of beta blockers on cancer survival may be helpful for cancer patients. This study was to elucidate the potential benefit of beta blockers on cancer survival.

Patients and Methods: We comprehensively searched PubMed, Embase, and the Cochrane Library from their inception to April 2013. Two authors independently screened and reviewed the eligibility of each study and coded the participants, treatment, and outcome characteristics. The primary outcomes were overall survival (OS) and disease-free survival (DFS).

Results: Twelve studies published between 1993 and 2013 were included in the final analysis. Four papers reported results from 10 independent groups, resulting in a total of 18 comparisons based on data obtained from 20,898 subjects. Effect sizes (hazard ratios) were heterogeneous and random effects models were used in the analyses. The meta-analysis demonstrated that beta blocker use can improve OS (HR = 0.79, 95% CI 0.67 - 0.93; p = 0.004) and DFS (HR = 0.69, 95% CI 0.53 - 0.91; p = 0.009). Although statistically not significant, the effect size was greater in patients with low stage cancer or cancer treated primarily with surgery than in patients with high stage cancer or cancer treated primarily without surgery (HR = 0.60 vs. 0.78, and 0.60 vs. 0.80, respectively). Although only two study codes were analyzed, the studies using nonselective beta blockers showed that there was no overall effect on OS (HR = 0.52, 95% CI 0.09 - 3.04).

Conclusion: This meta-analysis provides evidence that beta blocker use can prolong the survival of cancer patients, especially patients with early stage cancer treated primarily with surgery.

P-178 Accuracy of intraoperative frozen section in the diagnosis of ovarian neoplasm in Cipto Mangunkusumo General Hospital
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Introduction: There are three forms of ovarian neoplasm; benign, borderline, and malignant. Diagnosis is crucial to determine extent of surgical management. This study aims to evaluate the accuracy of intraoperative frozen section in the diagnosis of ovarian neoplasm in Cipto Mangunkusumo General Hospital.

Methods: A retrospective evaluation was conducted on records of patients who underwent a frozen section laparotomy between the years 2008-2013. Results of frozen section were then compared to their corresponding paraffin histopathology results.

Results: Of 139 records found, 91 had both frozen section and paraffin block results. Sensitivity of frozen section for benign, borderline and malignant neoplasms were 81.8%, 76.9%, and 91.0% respectively, while specificity were 91.0%, 95.8%, and 91.6% respectively. The overall accuracy was 87.9%.

Conclusion: The accuracy of intraoperative frozen section in our facility is adequate to diagnose ovarian neoplasm and can be used to assist in determining extent of surgical management.
Malignant pleural effusion: Is it the real factor for stage and prognosis in epithelial ovarian cancers?

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Objectives: We aimed to define the prognosis and clinical patterns of disease according to site-specific spread of advanced ovarian cancer.

Methods: Data from all consecutive patients with stage IIIC and IV epithelial ovarian cancer from 2001 through 2010, were collected and analyzed retrospectively. The patients underwent primary cytoreductive surgery and platinum-based chemotherapy. Survival rates were compared among the patients with peritoneal, pleural, and other distant organ metastases. Statistical analyses included the χ² test and Kaplan-Meier curves with log-rank tests.

Results: Review of our patient database identified 325 patients with stage IIIC and IV ovarian cancer, and 246 of them were evaluable without follow-up loss: mean age, 54.7 years (range, 18-84 years). The group with extrapelvic disease was presented as follows: extrapelvic intraperitoneal metastases (75%), exclusive pleural effusion (7%), other extraperitoneal metastases (18%). Age, tumor histology, grade, and rate of optimal surgery were similar in the 3 groups. The median progression-free survival (PFS) was better in the patients with stage IIIC (p = 0.04). However, patients having stage IV disease by pleural cytology only had PFS benefit compared with patients having other distant metastases (median survival 13 months vs. 7 months, p = 0.009). Meanwhile, there was no significant difference of PFS between patients with stage IIIC and ones with exclusive pleural effusion (median survival, 13 months vs. 14 months, p = 0.76).

Conclusions: The PFS was not significantly different between the patients with stage IIIC and ones with exclusive pleural effusion, while, PFS was shorter when patients had extraperitoneal solid metastases.

Rectal lymph node metastasis in recurrent ovarian carcinoma: Essential role of 18F-FDG PET/CT in treatment planning

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Although uncommon, ovarian cancer cells may spread to the rectal lymph nodes. However, few reports have described how to detect and treat such metastases. We report a case of a 59-year-old woman with mesorectal and pararectal lymph node metastases in recurrent ovarian carcinoma; detected conclusively using 18F-fluorodeoxyglucose (¹⁸F-FDG) positron emission tomography/computed tomography (PET/CT), and treated by low anterior resection with total mesorectal excision aiming for macroscopic complete resection. The treatment goals for the patient were gradually changed from curative to palliative chemotherapy; she survived for 45 months without rectal obstruction after secondary debulking surgery, and was followed up until autopsy. Thus, ¹⁸F-FDG PET/CT may be valuable for detecting rectal lymph node metastasis and can play an essential role in planning treatment for recurrent ovarian carcinoma.
Fbxw7 is involved in acquisition of the malignant phenotype in epithelial ovarian tumors
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Fbxw7 is a ubiquitin ligase that mediates ubiquitylation of oncoproteins, such as c-Myc, cyclin E, Notch, and c-Jun. Fbxw7 is a known tumor suppressor gene, and mutations in Fbxw7 have been reported in various human malignancies. In this study, we examined the sequences of the Fbxw7 and p53 genes in 58 ovarian cancer clinical samples. Interestingly, we found no Fbxw7 mutations associated with amino acid changes. We also investigated Fbxw7 expression levels in 126 epithelial ovarian tumors. Fbxw7 expression was negatively correlated with the malignant potential of ovarian tumors. Fbxw7 expression levels in ovarian cancer samples were significantly lower than those in borderline and benign tumors (p < 0.01). Moreover, Fbxw7 expression levels in serous adenocarcinoma samples were the lowest among 4 major histological subtypes. Fbxw7 expression was significantly lower in the p53 mutation group than in the p53 wild-type group (p < 0.001). Methylation arrays and bisulfite sequencing revealed hypomethylation of the 5' untranslated region of Fbxw7 in high Fbxw7 expression samples and hypermethylation of the same region in low Fbxw7 expression samples. Finally, knockdown of Fbxw7 by siRNA resulted in abnormal accumulation of c-Myc and cyclin E in ovarian cancer cell lines. This is the first report demonstrating that Fbxw7 expression was downregulated in ovarian cancer and was associated with the DNA methylation status of the 5'UTR.
P-183 Overexpression of glucose transporter-1 (GLUT-1) predicts poor prognosis in epithelial ovarian cancer

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Purpose: Glucose transporter-1 (GLUT-1) was identified as highly differentially expressed in epithelial ovarian cancer (EOC) cell lines by cDNA microarray analyses. We further analyzed the expression of GLUT-1 in EOC to evaluate its clinical significance in the progression of epithelial ovarian cancer.

Methods: Illumina microarray platforms were used to identify genes that are differentially expressed between 3 EOC cell lines and 3 human ovarian surface epithelial (HOSE) cells. To validate the microarray data, mRNA level of GLUT-1 was examined by SYBR Green real-time PCR in 11 EOC cells and 12 clinical specimens. Subsequently, GLUT-1 protein expressions were assessed by immunohistochemistry (IHC) and the data were compared with clinicopathological parameters such as tumor stages, grades, lymph node (LN) metastases, and survival rates of EOC patients.

Results: GLUT-1 had an EOC cell lines/HOSEs ratio of 5.6 based on cDNA microarray results. The PCR and IHC demonstrated that GLUT-1 expression was significantly increased in EOC (P=0.029 and P<0.001, respectively) compared to normal ovarian epithelial cells or tissues. GLUT-1 immunoreactivity was significantly associated with histologic type, as serous type tumors demonstrated the highest GLUT-1 expression (P=0.036). On survival analysis, GLUT-1 overexpression [HR=4.80 (95% CI, 1.02-22.65), P=0.027] and LN metastases [HR=8.35 (95% CI, 1.05-66.21), P=0.016] conferred a significantly worse overall survival.

Conclusions: These data indicate that the expression of GLUT-1 is remarkably up-regulated in EOC and predicts a poor overall survival for EOC patients. This implies that GLUT-1 might be a novel prognostic factor in EOC.

P-184 Differences in LINE-1 methylation between endometriotic ovarian cyst and endometriosis-associated ovarian cancer

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Objectives: Endometriosis of Endometriosis-Associated Ovarian Cancer (AOEC) is a lesion derived from endometrium that may transform to ovarian cancer. Hypomethylation of Long Interspersed Element-1 (LINE-1 or L1) is a common epigenetic change in cancer and strongly associated with ovarian cancer progression. This study aims to evaluate LINE-1 methylation alteration in endometriosis and AOEC.

Methods: First LINE-1 methylation of 19 normal endometrium, 29 solitary ovarian endometriotic cyst (SOE), 35 ovarian clear cell carcinoma (OCC) and 22 ovarian endometrioid adenocarcinoma (OEA) tissue of unrelated samples were compared. Then, eutopic endometrium, contiguous endometriosis and cancer from 16 AOEC were collected by laser capture microdissection and analyzed for LINE-1 methylation status.

Results: The total LINE-1 methylation level were significantly different among endometrium, endometriosis and ovarian cancer (P<0.001). A stepwise decrease in LINE-1 methylation can be observed as following normal endometrium, SOE, OEA and OCC. Interestingly, endometriosis of AOEC of both OEA (P=0.016) and OCC (P=0.003) possessed higher percentage number of LINE-1 unmethylated loci than SOE.

Conclusion: LINE-1 hypomethylation is an early molecular events involved in OEA and OCC malignant transformation. To measurement in LINE-1 methylation may have potential role in clinical application in distinguishing SOE and endometriosis of AOEC. *OCC: Ovarian Clear Cell carcinoma, OEA: Ovarian Endometrioid Adenocarcinoma, EOAC: Endometriosis-Associated Ovarian Cancer, mCuC: partial methylation, uCuC: unmethylation. Keywords: Endometriosis Associated Ovarian Cancer (EOAC): methylation, Long Interspersed Element-1s (LINE-1s)
P-185 Decreased ARID1A expression is correlated with chemo-resistance in epithelial ovarian cancer

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Objective: Loss of ARID1A is related with oncogenic transformation of ovarian clear cell adenocarcinoma. The present study was conducted in epithelial ovarian cancer of all tissue types to investigate whether an increased or decreased expression level of ARID1A can be a prognostic factor for ovarian cancer or can influence the sensitivity to anticancer drugs.

Methods: The expression level of ARID1A was investigated in 111 patients with epithelial ovarian cancer who received initial treatment at the Hirosaki University Hospital between 2006 and 2011. The expression level of ARID1A was immunohistochemically graded using staining scores, which were calculated by multiplying the staining intensity of the nuclei by the stain-positive area.

Results: The level of ARID1A was significantly lower in clear cell adenocarcinoma than in serous, mucinous, and endometrioid adenocarcinomas. No significant correlation was found between the level of ARID1A and the clinical stage or retroperitoneal lymph node metastasis. Among the patients with stage III/IV cancer (n = 46), the level of ARID1A was significantly lower (P = 0.026) in patients who did not achieve complete response (CR) (n = 12) than in patients who achieved CR (n = 34). The level of ARID1A was relatively lower (P = 0.07) in patients who relapsed after achieving CR (n = 21) than in patients who did not relapse (n = 13).

Conclusion: The result suggests that decreased ARID1A expression is correlated with chemo-resistance and may be a predictive factor for the risk of relapse of advanced cancer after achieving CR.

P-186 SWI/SNF complex is a novel prognostic factor in clear cell carcinoma (CCC) of the ovary

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Introduction: Recently, SWI/SNF complex has been recognized as tumor suppressor in many types of cancers including pancreatic, renal and ovarian cancer. Mutations of ARID1A, SWI/SNF complex subunit, were reported to occur in 57% of CCC representing the most frequent genetic mutation in CCC. However, the status of other subunits and their implications on CCC clinical course have not been explored.

Objectives: To study the expression of SWI/SNF subunits in CCC and their relation to CCC clinical & pathologic features.

Methods: 46 CCC specimens were collected from ovarian cancer patients treated in Kyoto University Hospital in the period from 1995 to 2010. They were examined for SWI/SNF subunits by immunohistochemistry after an informed consent from patients. These include ARID1A, ARID1B, BRG1, BRM, BAF170, BAF155, PBRM1, BCL11A and SNF5. Also, HNF1B was stained as CCC marker and Ki67 as proliferation index. This study was approved by the Institutional Review Board of Kyoto University.

Results: Expression of tested subunits were lost in 63% (29/46). ARID1A was unstained in 45.7% representing the major subunit is lost followed by BRM (19.6%) and BRG1 (10.9%). 55.2% of the 29 cases without complex expression showed loss of one subunit only, while the remaining showed loss of 2 subunits or more.

Ki67 index was higher in loss of SWI/SNF subunits (p = 0.002).
Complex loss has significantly less Overall and Progression free survival rates (p<0.005).

Conclusion: SWI/SNF complex is a major prognostic factor in CCC, which may be a good candidate for developing targeted therapy.
miR-10b accelerates migration and invasion activities of ovarian cancer cells
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Small and large noncoding RNAs (ncRNA) contribute to the acquisition of aggressive tumor behaviors in diverse human malignancies. Two types of ncRNAs, miRNA-10b (miR-10b) and homeobox (HOX) transcript antisense RNA (HOTAIR), can suppress the translation of HOXD10 gene, an mRNA encoding a transcriptional repressor that inhibits expression of cell migration/invasion associated genes. In epithelial ovarian cancer cell lines and primary tumors we investigated that miR-10b and/or HOTAIR can regulate the HOXD10 expression, and that it permit gain of pro-metastatic gene products, matrix metalloproteinase 14 (MMP14) and ras homolog family member C (RHOC). Overexpression of miR-10b induced decrease of HOXD10 protein, and upregulated migration/invasion activities in ovarian cancer cell lines (P < 0.05). In these cells, significant increase of MMP14 and RHOC protein was observed. No significant upregulation of HOXD10 protein was observed in cells with the treatment of HOTAIR siRNA. Positive signals for HOXD10 and MMP14 proteins were observed in 47 (69%) and 25 (37%) of 68 patients with epithelial ovarian cancers. Inverse correlation between HOXD10 and MMP14 immunoreactivities was observed (P < 0.05), and miR-10b expression was also inversely correlated with HOXD10 protein expression (P < 0.05). These results suggested that downregulation of HOXD10 expression by miR-10b overexpression might induce increase of pro-metastatic gene products, such as MMP14 and RHOC, and contribute to the acquisition of metastatic phenotypes in epithelial ovarian cancer cells.

microRNA-21 overexpression through the 17q23-25 amplification regulates PTEN tumor suppressor gene expression in ovarian clear cell carcinoma
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Purpose: Amplification of chromosome 17q23-25 was frequently observed in ovarian clear cell carcinoma (CCC). However, the driver gene of the region is not identified. MicroRNA-21 (miR-21) located on 17q23-25 has been frequently observed to be aberrantly overexpressed miRNA in many types of cancers. The aim of this study was to investigate the role of miR-21 that might be a potential candidate for 17q23-25 amplification in CCC oncogenesis.

Methods: We determined 17q23-25 copy number changes among 28 primary CCC tumors by means of aCGH. We measured expression levels of candidate target gene miR-21 and PPM1D mRNA for 17q23-25 amplification by real-time PCR and compared those data with copy number status either clinicopathological data or patients outcome. Furthermore, IHC of PTEN that might be a potential target for miR-21 was performed using the same CCC cases.

Results: Nine out of 28 patients showed chromosomal amplification in 17q23-25 region. The overexpression of miR-21 and PPM1D were found in 60% and 57% of 28 CCC tumors, respectively. Loss of PTEN protein was observed in 42% of patients. In total, 17q23-25 amplification cases with both miR-21 overexpression and PTEN protein loss were detected in 4/28 (14.2%). The patients with 17q23-25 amplification had significantly poor prognosis than that without this amplification in CCC tumors. There was significant correlation between miR-21 overexpression and endometriosis.

Conclusion: miR-21 was a possible driver gene other than PPM1D for 17q23-25 amplification in CCC.
P-189 Lipocalin2 enhances migration, invasion and tolerance against oxidative stress of ovarian clear cell carcinoma cells

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**Background:** Lipocalin2 (LCN2), a secretory protein, is known to be involved in various events such as blocking of bacterial infection, cell invasion and proliferation. We reported that LCN2 was strongly expressed in ovarian endometriosis and related cancers, and the overexpression of LCN2 was associated with poor outcome. In this study, we examined the role of LCN2 in ovarian clear cell carcinoma (OCCC) cells in vitro.

**Materials and Methods:** ES2 and Tov21G, the LCN2-low expressing OCCC cell lines, were used. ES2- and ES2-mock were established by transfection of lentiviral LCN2 overexpressing vector and empty vector, respectively. The recombinant LCN2 (rLCN2) was used to enhance the effect of LCN2. The effects of LCN2 on proliferation, migration, invasion, MMP-9 activity and H2O2 tolerance of these cells were analyzed using a WST-1 assay, wound healing assay, Matrigel invasion assay and gelatin gel zymography.

**Results:** The effect of LCN2 on cell proliferation was negligible; however, the migration and invasion were significantly increased in ES2-LCN2 (P = 0.03 and P < 0.001, respectively) and rLCN2-treated TOV21G (P = 0.002 and P < 0.001, respectively) compared with control cells. Increased MMP-9 activity was also observed in ES2-LCN2 (34% increased) and LCN2-treated Tov21G (55% increased). The cell viability under H2O2 treatment was significantly increased in ES2-LCN2 (P < 0.001) and LCN2-treated Tov21G (P < 0.001).

**Conclusions:** These findings revealed that LCN2 enhances cell migration, invasion, MMP-9 activity and tolerance against oxidative stress of OCCC cells, suggesting LCN2 to be involved in the progression of OCCC.

P-190 CDX2 and MDR1 protein expression in ovarian mucinous adenocarcinoma

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**Objectives:** In ovarian cancer, resistance for chemotherapy from the first-time treatment and the recurrence cases is often observed. It has been reported that Multidrug Resistance 1 (MDR1) gene is overexpressed in drug-resistant cells, and its protein, P-glycoprotein, seems to play a critical role in drug resistance. The CDX2 homeobox transcription factors have been reported to have critical functions in intestinal development, differentiation, and maintenance of the intestinal phenotype. In colon cancer, it has been demonstrated that CDX2 regulates expression of MDR1. We therefore have examined expression of the CDX2 and MDR1 protein in ovarian mucinous adenocarcinoma.

**Methods:** We applied immunohistochemistry staining to the clinical specimens and examined correlation between the histological type, differentiation degree and expression of CDX2 and MDR1. In addition, we examined expression of CDX2 by western blotting.

**Results:** In ovarian mucinous adenocarcinoma, overexpression of CDX2 was observed, but in the other histological types, its expression was weakly observed. Expression of CDX2 was well correlated with differentiation degree, being most intense in well differentiated mucinous adenocarcinomas and low in poorly differentiated ones.

**Conclusion:** In ovarian cancer, particularly mucinous adenocarcinoma, expression of CDX2 and MDR1 was well correlated with differentiation degree. These data suggest that the expression of both CDX2 and MDR1 may be associated with drug resistance.
The expression pattern and biologic function of toll-like receptors (TLRs) in ovarian cancer cell lines

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Purpose: The objective of this study was to confirm the expression of TLRs, which play a critical role in tissue repair, are also key regulators in cancer progression as well as chemoresistance, in ovarian cancer cell lines.

Methods: OVCAR3, SKOV3, SNU-8 and SNU-25 are cultured. In order to evaluate the expression of TLRs (TLR 1-9), total RNA is purified from cell lines, and RT-PCR is performed for 30 cycles under standard conditions using 2 ul of cDNA. Cells were plated and added by TLR agonists. After 20h of exposure, cell supernatants are collected and assayed by ELISA for expression of cytokines.

Results: The expression of TLR-1,2,3,4,5,6,7,8 were confirmed in OVCAR3, SKOV3, SNU-8 and SNU-251 cell lines. TLR-9 was expressed with very small amount in only SNU-8 cell line. In OVCAR3, SKOV3, and SNU-251, TLR-2,3,5 were expressed with relatively large amount and TLR-6,7,8 were expressed with relatively small amount. In SNU-8, TLRs were evenly expressed regardless of the subtype. The concentration of IL-6 and IL-10 was elevated in all cell lines after adding TLR-5 agonists. The TNF-α concentration was high in three cell lines, except for SNU-251. The IL-12p70 was increased in all cell lines after adding TLR-9 agonists, however, IFN-γ was increased in SKOV3 and OVCAR3.

Conclusion: It was confirmed that TLRs were expressed in ovarian cancer cells. However, the degree of expression and their biologic function, expressed by the cytokine secretion, are thought to vary depending on the type of ovarian cancer cells.

Targeted gene silencing using follicle-stimulating hormone peptide-conjugated nanoparticles improves its specificity and efficacy in ovarian clear cell carcinoma in vitro

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Background: RNA interference technology has shown high therapeutic potential for cancer treatment. However, serum instability, poor tissue permeability and non-specific uptake of siRNA limit its administration. To overcome these limitations and improve the specificity for ovarian cancer, we developed a targeted nanoparticle delivery system. This system included follicle-stimulating hormone (FSH) β33-53 peptide as a targeting moiety that specifically recognized FSH receptor (FSHR) expressed on ovarian cancer. Growth regulated oncogene α (gro-α) has been reported to be involved in ovarian cancer development and progression. Thus, siRNA targeted to gro-α was used as an antitumor drug in this system.

Methods: FSH β33-53 peptide-conjugated gro-α siRNA-loaded polyethylene glycol-polyethylenimine nanoparticles (FSIII3-G-NP) were prepared. Gro-α expression was detected by real-time quantitative RT-PCR, immunocytochemistry and ELISA. The proliferation, migration and invasion of ovarian clear cell carcinoma cell line ES-2 were further evaluated.

Results: A siRNA sequence that is effective in silencing gro-α expression was obtained and loaded into the delivery system. Compared with gro-α siRNA-loaded nanoparticles without FSH peptide modification (G-NP), FSIII3-G-NP significantly down-regulated gro-α expression in ES-2 cells at mRNA and protein levels. Consequently, the aggressive biological behaviors of ES-2 cells, including proliferation, migration and invasion, were suppressed after silencing gro-α expression, and the addition of the FSH β33-53 peptide enhanced the suppressive effects.

Conclusions: This study indicated that a FSHR-mediated delivery system could mediate the highly selective delivery of siRNA into ovarian cancer cells and that silencing gro-α expression could be a potential choice for ovarian cancer treatment.
P-193 COL11A1 promotes tumor progression and predicts poor clinical outcome in ovarian cancer

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We investigated the role of collagen type XI alpha 1 (COL11A1) in cell invasiveness and tumor formation and the prognostic impact of COL11A1 expression in ovarian cancer. Microarray analysis suggested that COL11A1 is a disease progression-associated gene. Small interference RNA-mediated specific reduction in COL11A1 protein levels suppressed the invasive ability and oncogenic potential of ovarian cancer cells and decreased tumor formation and lung colonization in mouse xenografts. Real-time RT-PCR, casein zymography and chromatin immunoprecipitation (ChIP) assays, showed that COL11A1 knockdown attenuated MMP3 expression and suppressed binding of Ets-1 to its putative MMP3 promoter binding site, suggesting that the Ets-1-MMP3 axis is upregulated by COL11A1. Transforming growth factor (TGF)-beta (TGF-β1) treatment triggers the activation of smad2 signaling cascades, leading to activation of COL11A1 and MMP3. Pharmacological inhibition of MMP3 abrogated the TGF-β1-triggered COL11A1-dependent cell invasiveness. Furthermore, the NF-YA binding site on the COL11A1 promoter was identified as the major determinant of TGF-β1-dependent COL11A1 activation. Analysis of 88 ovarian cancer patients indicated that high COL11A1 mRNA levels are associated with advanced disease stage. The 5-year recurrence-free and overall survival rates were significantly lower (p = 0.006 and p = 0.018, respectively) among patients with high expression levels of tissue COL11A1 mRNA compared to those with low expression. We conclude that COL11A1 may promote tumor aggressiveness via the TGF-β1/MMP3 axis and that COL11A1 expression can predict clinical outcome in ovarian cancer patients.

P-194 Suppression of STAT1 signal pathways reduces ovarian cancer progression

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Objective: Immune escape and acquisition of tolerance by tumor cells are essential to cancer growth and progression. An immunoregulatory enzyme indoleamine 2,3-dioxygenase (IDO) overexpression in tumors seems to correlate with impaired clinical outcome, although its precise mechanism remains unclear. In addition, IFNγ is known to be an IDO inducer, and IFNγ induced gene expression has been closely linked to JAK/STAT signaling. In the present study, we examined the effects of STAT1 inhibition on ovarian cancer progression in a mouse model.

Methods: OV2944-HM-1 cells, the murine ovarian carcinoma cell line, were intraperitoneally/subcutaneously transplanted into syngeneic immunocompetent mice. Intraperitoneal injection of a specific STAT1 inhibitor (AG 490, 500 μg/mouse) was daily performed in mice transplanted with HM-1 cells. Subsequently, cancer progression, ascites volume, and the expression of IDO and cytokines were evaluated.

Results: Our in vitro study revealed that AG490 down-regulated IDO expression in IFNγ-stimulated HM-1 cells through inhibiting STAT1 phosphorylation. Supportingly, AG490 suppressed intratumorous IDO mRNA expression in vivo. Actually, the tumor weight of peritoneal dissemination, ascites volume and subcutaneous tumor volume were significantly reduced in AG490 treatment group compared with vehicle group. Moreover, AG490 treatment significantly enhanced the accumulation of anti-tumor leukocytes such as CD8+ T-cells, macrophages, and NK cells within disseminated tumors.

Conclusion: These observations indicate that suppression of IDO by the STAT1 inhibitor alleviated ovarian cancer progression through enhanced recruitment of CD8+ T-cells, macrophages, and NK cells, thus suggesting IFNγ/STAT1 signal pathways may be good molecular target for immunotherapy of ovarian cancer.
Sonic hedgehog signaling pathway regulates EMT in the crosstalk between mesenchymal stem cells and ovarian cancer cells

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Objective: The sonic hedgehog (Shh) pathway has been shown to be activated in numerous malignancies as well as in cancer stem cells. This study aimed to determine the importance of the Shh pathway in epithelial-to-mesenchymal transition (EMT) by the interaction between ovarian cancer cells and human mesenchymal stem cells in the tumor microenvironment.

Methods: Ovarian cancer cell line (IGROV-1) and bone marrow derived human mesenchymal stem cells (BM MSCs) were used. The expressions of EMT markers were analyzed using quantitative RT-PCR, immunofluorescence, and western blot analysis in the IGROV-1 monoculture and cocultured with BM MSCs. Western blot analysis was used to determine the expression of Shh pathway proteins GLI1. Co-culture was treated with an Shh inhibitor (cyclopamine) to determine changes in growth and migration through EMT.

Results: IGROV-1 directly co-cultured with BM MSCs had contact-dependent altered morphology and growth patterns in response to BM MSCs. EMT markers were remarkably observed in the co-culture than monoculture. Compared to monoculture, co-culture with BM MSC demonstrated significant activation of the Shh pathway as defined by increased expression of GLI1. In addition inhibition of the Shh pathway with cyclopamine prevented EMT process and decreased migration.

Conclusions: In this study, EMT was induced in ovarian cancer cells directly co-cultured with BM MSCs. This process was regulated by sonic Shh signaling which activated in the interaction between both cells. The Shh pathway appears to be important in the growth, invasion, and migration of ovarian cancer.

Interaction between peritoneal mesothelial cells and ovarian cancer cells in peritoneal dissemination

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Objective: Recently tumor stroma has been highlighted as a powerful supporter of tumor progression. In peritoneal dissemination of ovarian cancer, it has been reported that cancer-associated fibroblasts and adipocytes are the major components of the microenvironment. The aim of this study was to determine whether peritoneal mesothelial cells (PMCs) play an important role in peritoneal dissemination of ovarian cancer. We focused on morphological and functional changes of PMCs by carcinomatous ascites.

Methods: We isolated primary cultured peritoneal mesothelial cells from surgical specimens. We examined the morphological changes of PMCs by carcinomatous ascites, conditioned medium of ovarian cancer cell line and TGF-β. We performed microarray analysis of activated PMCs compared to the normal cells. Then we compared the capacity for migration toward conditioned medium of normal and activated PMCs.

Results: When PMCs were cultured with either carcinomatous ascites, conditioned medium of ovarian cancer cell line or TGF-β, PMCs were dramatically changed from cobblestone-like to fibroblast-like morphology, demonstrating epithelial-mesenchymal transition by E- and N-cadherin expression using western blot analysis. Microarray analysis of PMCs activated by TGF-β revealed that some of the genes, IGF-1, HB-EGF, PDGF, VEGF and SDF-1 were up-regulated. Ovarian cancer cells showed a greater capacity for migration toward activated PMCs than toward normal PMCs.

Conclusions: Our data suggest that PMCs were changed morphologically and functionally by carcinomatous ascites. The changed PMCs may have effect on ovarian cancer cells. Further investigations of the interaction between PMCs and ovarian cancer cells may lead to a new strategy in ovarian cancer therapy.
P-197 The significance of lymphatic endothelial progenitor cells and vascular endothelial growth factor-C in tumor lymphangiogenesis of ovarian cancer

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We investigated the significance of lymphatic endothelial progenitor cells (LEPCs) and vascular endothelial growth factor-C (VEGF-C) in tumor lymphangiogenesis and lymph node metastasis of ovarian cancer. We first examined the circulating LEPCs (defined as CD34+VEGFR3+ cells) in ovarian cancer patients by flow cytometry. Using a mouse model, we next examined whether VEGF-C increases LEPCs level in bone marrows and peripheral blood. We also investigated the association between tumor VEGF-C expression and the extent of lymphvascular space invasion (LSI) or the number of lymph node metastasis. Moreover, by performing immunofluorescence, we investigated whether LEPCs contributes to lymphangiogenesis in ovarian cancers. The level of LEPCs (defined as CD34+ VEGFR3+ cells) in the peripheral blood was increased in ovarian cancer patients with lymph node metastasis compared with those without lymph node metastasis. Administration of VEGF-C increases the number of LEPCs in bone marrows and peripheral blood in mice. The tumor VEGF-C expression was significantly associated with the extent of LSI or the number of lymph node metastasis in ovarian cancer specimens. CD34+ VEGFR3+ cells were more frequently observed in ovarian cancers derived from patients with lymph node metastasis than tumor specimens derived from patients without lymph node metastasis. In conclusion, VEGF-C induced LEPCs play an important role in tumor lymphangiogenesis and lymph node metastasis of ovarian cancer.

P-198 Clinical and immunological analysis in a phase II trial of the Glypican-3 peptide vaccine for ovarian clear cell carcinoma patients

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Compared with other epithelial ovarian carcinoma subtypes, ovarian clear cell carcinoma (OCCC) is associated with a poorer prognosis and increased chemoresistance. Thus, there is an urgent need to further our understanding of the pathogenesis of OCCC, particularly with respect to the expression of proteins, which confer chemoresistance, for the development of a novel therapeutic strategy. Glypican-3 (GPC3) is useful not only as a novel tumor marker, but also as an oncofetal antigen for immunotherapy. We previously reported that GPC3 could be an effective target for immunotherapy against OCCC. In this study, we describe the effect of vaccination with the HLA-A24 or A2-restricted GPC3 peptide on patients with OCCC. Forty-eight OCCC patients were entered into clinical trial. The patients were divided into three groups such as adjuvant therapy group, combined therapy group (combined to second-line chemotherapy) and recurrence or advanced group (single of vaccine treatment). The dose of GPC3 peptide injected was 3 mg per body. Patients received the intradermal injection of GPC3 peptide emulsified with incomplete Freund's adjuvant. Vaccinations were carried out biweekly from the first until the 6th and repeated at 6-week intervals after the 7th. Immunological responses were analyzed by ex vivo IFN-γ enzyme-linked immunospot assay. In adjuvant group, nineteen of twenty-three patients have no recurrence. Two of thirteen patients with refractory OCCC achieved a significant clinical response. Our current data provide preliminary evidence of clinically meaningful benefit for GPC3 peptide vaccines in OCCC and support further evaluation of this approach in these patient populations.
P-199 Down regulation of HLA Class I expression is a risk factor of poor prognosis in ovarian cancer of Japanese female
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Background: Down regulation of HLA Class I expression of is a major mechanisms for cancer cells to escape from cytotoxic T lymphocytes and may be a poorer prognostic factor. And down regulation of HLA Class I have been described to be related to poorer prognosis in several malignancies.

Aim: The aim of this study is to analyze the relation of HLA class I down regulation and clinical parameters in Japanese epithelial ovarian cancer.

Method: Sections of 122 cases of epithelial ovarian cancer, who underwent surgical operation in Sapporo Medical University from 2001 to 2011, were immunohistochemically stained with EMR 8.5 anti-HLA class I antibody established by us. The reactivity for EMR 8.5 was evaluated as 0 to + 3 according to staining intensity. And we classified them into HLA high group and HLA low group, scored +2/3 and 0/1. Log rank test was used for identifying difference of survival rate with these two groups.

Result: Seventy nine cases were grouped HLA high and 43 cases were grouped HLA low. In total cases, significant difference belong HLA high and low group was observed in overall survival rate (P = 0.004). And each histological type also showed significant difference, serous adenocarcinoma (P = 0.045), endometrioid adenocarcinoma (P = 0.039) and mucinous adenocarcinoma (P = 0.025). But only in clearcell adenocarcinoma, there was no statistical difference in two groups (P = 0.407).

Conclusion: HLA Class I down regulation can be a novel poor prognostic marker for epithelial ovarian cancer.

P-200 Chemotherapy induces PD-L1 overexpression via NF-kB signal pathway in ovarian cancer cells
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Ovarian cancer is the leading cause of death among gynecological malignancies. We previously demonstrated that overexpression of PD-L1, an immunosuppressive co-factor, in cancer cells is a poor prognostic factor in ovarian cancer patients, and novel therapy against PD-L1/PD-L1 signal has received much attention. Recently, growing evidences suggest that the response to chemotherapy is modulated by immune system. The aim of this study was to analyze the chemotherapy-induced immuno-modulation in ovarian cancer. First, we analyzed a public microarray dataset and found that PD-L1 and NF-kB were upregulated after carboplatin treatment. In vitro, treatment with carboplatin, paclitaxel, or gemcitabine resulted in upregulation of both PD-L1 and NF-kB p65 protein in mouse and human ovarian cancer cell lines. PD-L1 expression was not elevated when NF-kB p65 was knocked down. Next, using in vivo mice model of peritoneal carcinoma with mice ovarian cancer ID8 cells, PD-L1 overexpressed cells (ID8 PD1), and PD-L1-depleted (ID8 mirPD1) cells, we examined the survival under intraperitoneal injection of paclitaxel. The ID8 PD1 mice without paclitaxel showed the worst, while ID8-mirPD1 mice with paclitaxel showed the best prognosis (p < 0.01). In conclusion, since chemotherapy upregulates PD-L1 via NF-kB, combination of chemotherapy with PD-L1/PD-L1 blocking is a promising treatment modality against ovarian cancer.
P-201 Salinomycin induces apoptosis via death receptor 5 up-regulation in cisplatin-resistant ovarian cancer cells
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Background: Chemo-resistance to cisplatin-centered cancer therapy is a major obstacle to the effective treatment. Recently, salinomycin was proven to be highly effective for the elimination of cancer stem cells both in vitro and in vivo. The objective of the present study was to evaluate the antitumor properties of salinomycin in cisplatin-resistant ovarian cancer cells (A2780cis).

Materials and Methods: The tetrazolium dye (MTT) assay was performed to determine cell viability. Flow cytometric analysis was performed to analyze the effect on cell cycle and apoptosis. The expression of apoptosis-related proteins was evaluated by western blot analysis.

Results: Cell viability was significantly reduced by salinomycin treatment in a dose-dependent manner. Flow cytometry showed an increase in sub-G1 phase cells. Salinomycin increased the expression of death receptor 5 (DR5), caspase-8 and Fas-associated protein with death domain (FADD). A decline in expression of FLICE-like inhibitory protein (FLIP), activation of caspase-3 and increased poly ADP-ribose polymerase (PARP) cleavage triggered apoptosis. Furthermore, annexin V staining also revealed the apoptotic induction.

Conclusion: These findings provide important insights regarding the activation of caspase-8 and DR5, to our knowledge, for the first time in salinomycin-treated cisplatin-resistant ovarian cancer and demonstrate that salinomycin could be a prominent anticancer agent.

P-202 Salinomycin inhibits Akt/NF-κB and induces apoptosis in cisplatin resistant ovarian cancer cells
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Background: Despite advances in treatment, ovarian cancer is the most lethal gynecologic malignancy. Therefore significant efforts are being made to develop novel strategies for the treatment of ovarian cancer. Salinomycin has been shown to be highly effective in the elimination of cancer stem cells both in vitro and vivo. The present study focused on investigating important cell signaling molecules such as Akt and NF-κB during salinomycin-induced apoptosis in cisplatin resistant ovarian cancer cells (A2780cis).

Methods: MTT assay was performed to determine cell viability. Flow cytometry and DNA fragmentation assay were performed to analyze the effect on cell cycle and apoptosis. The expression of apoptosis-related proteins was evaluated by western blot analysis.

Results: The cell viability was significantly reduced by salinomycin treatment in a dose-dependent manner. The flow cytometry result showed an increase in sub-G1 phase. Salinomycin inhibited the nuclear transportation of NF-κB and downregulated Akt expression. Declined Bel-2, activation of caspase-3 and increased PARP cleavage triggered apoptosis. Moreover, DNA fragmentation assay also revealed apoptotic induction.

Conclusion: The result suggested that salinomycin-induced apoptosis in A2780cis was associated with inhibition of Akt/NF-κB. It may become a potential chemotherapeutic agent for the cisplatin resistant ovarian cancer therapy.
**P-203** Synergistic effect of COX-2 inhibitor on paclitaxel-induced apoptosis in the human ovarian cancer cell

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**Objective:** In vitro studies have revealed that treatment of various human cancer cell lines with specific cyclooxygenase inhibitor regulates apoptotic cell death. It is currently proposed that the combination of celecoxib (COX-2 inhibitor) with paclitaxel improves the efficacy of cancer treatment.

**Methods:** Three ovarian cancer cell lines, OVCAR-3, SKOV3 and A2780, were exposed to paclitaxel and celecoxib. Cell viability was evaluated using a cell counting kit-8 assay. Apoptosis was evaluated using Annexin-V/7-AAD staining and cellular DNA fragmentation ELISA. Caspase-3 was examined by the Caspase-3 Colorimetric Assay kit. Caspase-9 and cleavage of poly ADP-ribose polymerase were determined by western blotting. Expression of nuclear factor-kB was assessed using Trans AM kits and immunochemistry. Vascular endothelial growth factor and Akt activation were studied by RT-PCR and western blotting.

**Results:** A combination of celecoxib with paclitaxel augments anticancer effects more efficiently than paclitaxel alone as evidenced by decreased cell viability and enhanced apoptosis in OVCAR-3, SKOV3 and A2780 cells. Pretreatment with celecoxib also increased activation of caspase-9, 3 and cleaved PARP following paclitaxel treatment. NF-kB activity assay revealed that activation of NF-kB induced by paclitaxel is downregulated by celecoxib. We also noted that celecoxib inhibited paclitaxel induced VEGF expression. Furthermore, combining celecoxib and paclitaxel inhibited phosphorylation of Akt.

**Conclusion:** OVCAR-3 cells were sensitized to paclitaxel-induced apoptosis by celecoxib through downregulation of NF-kB and Akt activation, suggesting that celecoxib may work synergistically with paclitaxel to inhibit different targets and ultimately produce anticancer effects. Combining celecoxib with paclitaxel may represent a anti-ovarian cancer strategy.

**P-204** Overall treatment time and disease free interval in primary debulking advance stage epithelial ovarian cancer with carboplatin-paclitaxel chemotherapy

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**Background:**
Given the longer intervals between cycles and longer total duration of treatment, the impact of repopulation is likely to be greater following chemotherapy. Limited data from experimental models suggest that, after chemotherapy, there is a 'lag period', followed by variable but rapid rates of repopulation of tumour cells, possibly accelerating between cycles.

**Aim:**
Evaluate overall chemotherapy treatment time correlated with disease free interval in advance stage ovarian carcinoma.

**Patients and method:**
We evaluate OTT and disease free survival, 11 patients with stage III-IV epithelial ovarian carcinoma from October 2012-August 2013, with primary debulking continued 6 cycles carboplatin-paclitaxel chemotherapy of patients with OTT less and more than 4.2 months. OTT refers to the interval between first and last complete chemotherapy (6 cycles; 42 months).

**Results:**
Overall chemotherapy treatment time were 3.5-10.1 months, with median 3.8 and mean 3.46 months. Recurrence occurred in 1 of 2 clear cells (OTT: 5.4 months, with disease free interval 6 months). There were 2 of 9 patients with non clear cell had recurrent disease (OTT 4.8 and 4.9 months disease free interval 9.5 months and 9.7 months)

**Conclusion:**
There is no difference in recurrence between group with OTT>4.2 months and OTT<4.2 months (p = 0.182) even if we categorized this group into clear cell and non clear cell
P-205  Phrenic nerve sparing cardiophrenic lymph node dissection in the surgical management of ovarian cancer

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Objectives:
Cardiophrenic lymph node dissection could be performed by video-assisted thoracic surgery and trans-diaphragmatic incision with acceptable morbidities.

Methods: Surgical procedures will be presented.

Results: Primary cytoreductive surgery composed of hysterectomy, bilateral salpingooophorectomy, omentectomy, pelvic and para-aortic lymph node dissection, diaphragmatic stripping and resection, appendectomy, and cardiophrenic lymph node dissection via resected diaphragm (left upper figure) was performed in a 41-year-old woman with advanced ovarian cancer. Cardiophrenic lymph node was extended to posterior pericardium of right ventricle. Phrenic nerve was identified and saved during lymph node dissection near pericardium of right ventricle (right upper and left lower figures). Resected diaphragm was primarily repaired (Right lower). Postoperative recovery course of uneventful related to this surgical procedure.

Conclusions:
Cardiophrenic lymph node dissection requiring phrenic nerve preservation was safely performed as parts of cytoreductive surgery in ovarian cancer.

P-206  Study for 43 cases of primary ovarian cancer with resection of the intestine

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Introduction: According to the ovarian cancer treatment guidelines in 2010 edition in Japan, the surgery for ovarian cancer should be maximum debulking surgery with the aim of complete resection, due to the correlation the residual tumor after surgery with the prognosis. There may need the case such as resection of intestine and peritoneum for removal of tumor as possible. We have examined 43 cases of ovarian cancer surgery needed intestinal resection.

Methods: The subjects are complete reductive surgery and optimal surgery cases including resection of tumor adhesion or disseminated tumor to intestine. The analysis is perioperative management, complications, and progression.

Result: The majority is epithelial cancer (serous: 44.2%, endometrioid: 20.9%, clear cell: 11.6%), advanced cancer (stage III: 53.5%, stage IV: 18.6%), colon resection (Sigmoid colon resection: 37.2%, low anterior resection: 30.2%). In 31 cases of advanced ovarian cancer (stage III: 67.8%, stage IV: 25.8%), median survival time and five-year survival rate of IIIc is 32.0 months, 36.0% and IV is 27.0 months, 25.0%.

Conclusion: All surgery for ovarian cancer with intestinal removal was performed successfully with no complications of anastomotic insufficiency. Tumor removal as possible including intestinal resection is assumed to be important in the strategy of ovarian cancer treatment.
P-207 The role of cytoreductive surgery in the relapse of gynecological cancer

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Objectives:
The standard treatment of recurrent gynecological cancer remains unsettled. The purpose of this study was to investigate the significance of cytoreductive surgery for the relapsed gynecological cancers.

Methods:
Retrospective study using medical record was conducted. Surgical treatment for relapsed diseases was performed for 35 patients at our hospital between 2005 January and 2013 May.

Results:
Mean age was 56.3 years old (range: 29–81 years). Disease free interval was 41.7 months. The 35 patients included 24 Mullerian carcinomas, 4 uterine cervical cancers, 1 vaginal cancer, 3 endometrial cancers, and 3 vulva cancers. Two histologic types consisted of approximately 70%, serous adenocarcinoma (46.0%) and squamous cell carcinoma (23.0%). Nineteen had local recurrence, 6 had intra-abdominal cavity recurrence, and 10 had distant recurrence. Surgical frequency was once in 71%, twice in 12%, and three times or more in 17%. After surgery, 15 achieved no evidence disease (NED), 3 were alive with disease, and 17 had died of disease. Complete resection of relapsed lesions was achieved in 76%. All of the cases with NED were completely resected. The duration between surgical treatment for relapse and the last contact or death in primary Mullerian carcinoma, endometrial cancer, uterine cervical cancer and vulva cancer were 1096, 1580, 377, 479 days respectively.

Conclusions:
This study was preliminary. Complete resection of relapsed lesions might improve the prognosis. Primary Mullerian carcinoma and endometrial cancer were more beneficial in the surgery for relapse than in uterine cervical cancer and vulva cancer. It is suggested that histological type such as SCC might be detrimental in surgical treatment for relapse.

P-208 Recurrent sites of ovarian, fallopian tube, and peritoneal cancers after interval debulking surgery

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Background and aims:
In the therapeutic procedure for advanced ovarian cancer, neoadjuvant chemotherapy (NAC) can induce downstaging of the tumor and improve operability during interval debulking surgery (IDS). However, the majority will develop recurrent disease even after complete cytoreduction at IDS. This study aims identify recurrence pattern in the ovarian, fallopian tube, and peritoneal cancer patients who underwent complete cytoreduction at IDS.

Methods:
We reviewed the data of stage III or IV ovarian, fallopian tube, and peritoneal cancer patients who underwent IDS following NAC at our institution from January 1, 2005 to December 31, 2011 retrospectively.

Results:
Among 105 patients who underwent complete cytoreduction in IDS, recurrence was documented in 70 patients (66.7%). As first recurrence patterns, 42 (60.0%) patients had peritoneal dissemination, 47 (52.9%) had lymphnode metastases, and 16 (22.9%) had organ metastases. The median progression free and overall survivals were 17.7 and 45.8 months, respectively. Survivals in the patient group with recurrence of peritoneal dissemination and those in the group without peritoneal dissemination were not significantly different.

Conclusions:
As a recurrence pattern in ovarian, fallopian tube, and peritoneal cancer patients who had undergone complete cytoreduction at IDS, peritoneal dissemination was most common. There were no differences in the time to recurrence and prognosis depending on recurrence pattern.
P-209  Long-term survival of recurrent ovarian cancer

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Objective: To reveal the factors associated with long-term survival of recurrent ovarian cancer in the cases which had survived in 5 years or more after the first relapse.

Methods: We analyzed 12 patients with ovarian cancer, who performed first treatment from 1996 to 2006 and survived in 5 years or more after recurrence, retrospectively.

Results: There were 4 stage I patients, 3 stage II, 5 stage III, and no stage IV (FIGO stage). Histological type was 5 serous adenocarcinoma, 5 endometrioid adenocarcinoma, 1 clear cell adenocarcinoma, and 1 unknown. Median of disease-free interval after the first treatment was 24 months and range was 2 to 110 months. The distribution of the first relapse was 4 intrapelvic, 4 intraperitoneal, 2 para-aortic lymph node, 1 epiphenal, and 1 subcutaneous, then 10 cases had solitary lesion and 2 cases had multiple lesions. The prognosis was 5 no evidence of disease, 1 alive with disease, 4 dead of disease, and 2 untrackable. Treatments of first relapse were 7 surgery and chemotherapy and 5 only chemotherapy. 4 of no evidence of disease performed complete cytoreductive surgery and chemotherapy at the first relapse.

Conclusion: Complete secondary cytoreductive surgery for recurrent ovarian cancer has the possibility of the favorable prognosis and that has been reported in some literatures. Adaptation of secondary debulking surgery in recurrent ovary cancer should be determined carefully, but it also needs to consider a possibility that the improvement of the prognosis by complete reduction can be expected.

P-210  Eight cases of ovarian tumor treated by laparoscopic surgery and diagnosed malignant postoperatively

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Objective: Laparoscopic conservative surgery become popular for the treatment of benign ovarian tumors. Sometimes we encounter the cases diagnosed malignant tumors by the pathological examination after the laparoscopic surgery. The purpose of this study was to evaluate our operative outcomes of malignant ovarian tumor patients treated with laparoscopic surgery.

Methods: 945 cases of ovarian tumors were treated laparoscopically under the diagnosis of benign tumors between July 2000 and June 2013. Seven out of 945 cases turned out to be malignant tumors. We retrospectively reviewed the medical record of these patients.

Results: In 8 cases, 3 were mucinous borderline tumor, 1 was serous borderline tumor, 1 is clear cell adenocarcinoma, 2 are immature teratoma G1, and 1 is mixed germ cell tumor with yolk sac tumor. We found suspicious malignant findings such as wall thickness in 3 out of 7 cases by the retrospective review of ultrasonography and MRI imaging. Five cases were treated by laparoscopic surgery alone and 2 cases were treated by additional open surgery and chemotherapy. One case was died of cancer.

Conclusions: In some cases, it is difficult to point out malignant findings preoperatively. We should consider about malignancy for the ovarian tumor diagnosed as benign.
Underwent excision of the residual tumor, sigmoidectomy, left ureterectomy, omentectomy, resection of a 1.5 cm umbilical metastatic tumor involving the trocar tract and pelvic paraaortic lymphadenectomy. Peritoneal washing cytology proved negative for malignant cells. Lymph nodes, omentum and the other lower three ports proved no metastasis. One month after she was treated with 6 cycles of adjuvant chemotherapy, she underwent resection of recurrent tumor of right cardinal ligament, ureteral anastomosis following right ureterectomy. Five months after she was treated with 3 cycles of adjuvant chemotherapy, she still proves no recurrence.

Conclusion: Port site metastasis after laparoscopic surgery is usually associated with poor outcome. Further investigations are necessary to reveal the mechanisms and management to prevent this serious complication as laparoscopic surgery become more common.

P-212 Current role of single port gasless laparoscopy-assisted mini-laparotomic ovarian resection (SP-GLAMOR)

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Objectives: Recent improvements to both optical and laparoscopic instruments have enabled the use of laparoscopic surgery for gynecological procedures as opposed to laparotomic surgery. However, laparoscopic surgery has several potential limitations, including tumor rupture, spillage, incomplete resection of lesions, and trocar insertion site metastasis in surgeries involving large ovarian masses with suspicion of malignancy. Here, we report some cases of large ovarian cystic tumors that were successfully removed by Single Port Gasless Laparoscopy-assisted Mini-laparotomic Ovarian Resection (SP-GLAMOR).

Methods: We reviewed the medical records of 39 women who visited St. Vincent Hospital from April 2006 until August 2013 and were diagnosed with a large cystic ovarian mass with suspicion of malignancy based on imaging studies and tumor markers. After diagnosis, all of the women underwent SP-GLAMOR.

Results: The median maximal diameter of cysts, median incision size, median surgical duration and median volume of blood loss were 20 cm (range 10.7-45 cm), 3 cm (range 2.5-4cm), 100 minutes (range 45-270 minutes) and 100 mL (range 30-500mL), respectively. Four cases were diagnosed as malignant disease on frozen sections obtained during the operation, and were converted to open abdominal surgery. No major complications were observed. The four patients diagnosed with malignant disease also underwent adjuvant chemotherapy. All patients were followed up to the time of this report.

Conclusions: The results of our study suggest that the SP-GLAMOR procedure is feasible, with potentially decreased perioperative morbidity and blood loss, faster recovery and better cosmetic satisfaction.

Key Words: Large ovarian cystic tumors; Single port; Gasless laparoscopy; Mini-laparotomy
Recurrence of a granulosa cell tumor resected by laparoscopic surgery: Case report

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Management of a recurrent ovarian tumor often requires multiple surgical procedures. However, repeated abdominal surgery can be a burden for the patient both physically and psychologically. A 46-year-old nulligravida underwent a left abdominal salpingo-oophorectomy due to an ipsilateral ovarian cystic tumor; the tumor was subsequently diagnosed histologically as a granulosa cell tumor (GCT). She was referred to our hospital due to an incidentally detected right ovarian cystic tumor one year after the first surgery. A laparoscopic right salpingo-oophorectomy and hysterectomy was performed out because a recurrent GCT was suspected. However, the right ovarian cyst was found to be benign. One year and 10 months after the second surgery, a solid peritoneal tumor was found on the right abdominal wall. The tumor was well-demarcated, and was resected laparoscopically. One year and four months after the third surgery, a well-demarcated tumor was detected anterior to the rectum. The tumor was located at the vaginal cuff, and was resected laparoscopically. The third and fourth tumors were histopathology confirmed as a GCT recurrence. She is currently undergoing three consecutive chemotherapy cycles. It is known that ovarian GCT can recur repeatedly over a period of years, and the standard treatment is surgery. Therefore, recurrent GCT patients often endure multiple surgical procedures and are exposed to the risk of acute and chronic surgical complication. Laparoscopic surgery is usually not recommended for ovarian tumors suspicious of malignancy; however, adopting a laparoscopic approach to minimize surgical damage might be appropriate for selected cases, such as recurrent GCT.

Port site metastasis in laparoscopic surgery for gynecological cancer: Our experience and literature review

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With widespread application of laparoscopic surgery in gynecological oncology, relevance of port-site metastasis (PSM) is increasing.

We report three different case scenarios of PSM in patients treated at our center. Two occurred in our series of 140 Ca cervix patients who underwent laparoscopic surgery between 2004-2013 for Stage IB cervical cancer, giving an incidence of 1.4%.

Another patient was referred after laparoscopic adnexectomy for a unilateral ovarian mass. Histology was immature teratoma. She presented with widespread disease and bulky PSM at manipulation ports. She underwent post-NACT optimal cytoreduction and adjuvant chemotherapy and remains disease free at 2yrs. This is probably the second only reported case of GCT ovary presenting with PSM.

Potential risk factors for PSM are CO2 insufflation-associated turbulence and tissue acidosis, the “chimney effect” of rapid gas efflux during desufflation, local immune factors, poor case selection and surgical technique. In most cases the metastasis is diagnosed at the tissue manipulation port.

Appropriate case selection and adherence to standard oncological principles is essential while dealing with suspicious adnexal masses keeping the possibility of unexpected malignancy. Also, PSM could be a surrogate for underlying advanced disease rather than solely a complication of surgery and should not be used as an argument against laparoscopic surgery in gynecologic malignancies.


P-215  Neoadjuvant chemotherapy in advanced stage carcinoma ovary

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Optimal cytoreduction followed by adjuvant chemotherapy is the standard treatment for advanced stage epithelial ovarian cancer. Supra-radical surgeries to achieve R0 dissection are associated with high morbidity rates. Neoadjuvant chemotherapy reduces the morbidity associated with ultra-radical surgical resections, longer median survival, improved quality of life, de novo tumor sensitivity to chemotherapeutic drug sand is cost effective.

From Jan 2004-Dec 2012, 61 patients with advanced epithelial ovarian cancer were included in the study. The diagnosis was confirmed by cytological examination of ascitic fluid or FNAC of abdominal/pelvic mass. 71.8% were more than 50 yrs of age. Massive ascites was present in 93.7% cases. Malignant pleural effusion was present in 4 (6.25%) patients. Pre-treatment CA-125 was more than 500IU/ml in 93.7% cases. Platinum based chemotherapy was administered for 2-4 cycles. Surgery was done in 62 Patients. R0 dissection was possible in 74.1% (46) patients. R1 dissection with residual disease of 1-2cm could be done in 10 (16.1%) patients. R2 dissection with residual disease of more than 2 cm-6 (9.37%) patients 6 (9.6%) patients required small/large bowel resection.

Follow up ranged from 6 months to 8 yrs. The median disease free survival was 18.2 months. 15 patients (24.19%) are disease free with no recurrence. 47 (75.8%) developed recurrence. 10 patients refused further treatment. 10 patients died. 8 are disease free. 19 patients are living with disease. Neoadjuvant chemotherapy followed by surgery seems to be a good alternative to standard care of upfront surgery.

P-216  The use of polymeric micellar Paclitaxel in the management of epithelial ovarian cancer

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Polymeric micellar Paclitaxel is a new formulation of taxane, proposed to provide better therapeutic benefit with minimal toxicities, as compared to the standard formulation of Paclitaxel. This study determines the Philippine experience with the use of polymeric micellar Paclitaxel in the management of epithelial ovarian carcinomas, particularly determining its efficacy and safety.

Fourteen patients diagnosed with epithelial ovarian carcinoma, who underwent primary complete surgical staging and/or debulking surgery and subsequently received polymeric micellar Paclitaxel 175 mg/m² in combination with Carboplatin AUC 5-6 were evaluated. Demographic, clinical and surgical-pathologic characteristics were determined; symptomatology, clinical and laboratory parameters during the course of chemotherapy were evaluated and analyzed.

Of the 13 patients evaluated for treatment response, 10 (71%) were able to complete treatment with no evidence of disease. One (7%) only received 4 cycles of chemotherapy but had no evidence of disease at the end of evaluation. Two (14%) developed tumor progression. Toxicities identified included grade 3/4 neutropenia (6 patients, 46.15%), grade 3/4 hypomagnesemia (8 patients, 61.54%), and grade 3 hypersensitivity reaction (1 patient, 7%).

Polymeric micellar Paclitaxel may be an effective treatment option of epithelial ovarian carcinoma. Precautions and monitoring for adverse reactions remains mandatory.
P-217 Development of a mathematical model with differential equations of intraperitoneal/intravenous infusion of taxanes

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Background: It remains unclear whether paclitaxel (T) or docetaxel(D) should be administered intraperitoneally (IP) or intravenously (IV) for ovarian cancer patients. Because it is impossible to measure the actual tissue concentration in most of organs, we have developed a three-compartment model for both IP and IV administration to estimate the pharmacological information in the serum (S), the peritoneal cavity (CV), and the rest, which is defined as peripheral space (PRII) in this study.

Methods: A model with simultaneous differential equations was solved to fit the data based on reports of in vivo pharmacokinetics in both S and CV regarding T and D, respectively.

Results: The rate constants of \( |T|D| \) for CV to S, S to CV, S to PRII, PRII to S, CV to PRII, PRII to CV, and elimination were \( |0.01, 0.095| \), \( |0.0001, 0.00005| \), \( |25, 7| \), \( |0.101, 0.2| \), \( |150, 161| \), \( |0.1, 70| \), \( |21, 45| \) (hr\(^{-1}\)), respectively. Calculation revealed that the are under the time concentration curve (AUC) value in S was identical both IP and IV, and the values in both CV and PRII were higher than IV. The AUC ratio of T/D in S was 64. The AUC ratios of T/D in CV was 0.03 and 0.08 by IP and IV, respectively. The ratios of total amount of T/D in PRII was 13.5 and 54.7 by IP and IV, respectively.

Conclusions: A mathematical model of IP/IV administration of taxanes demonstrated the feasibility of T/IP for the extraperitoneal lesions, and D/IP for the intraperitoneal lesions.

P-218 High cumulative dose of pegylated liposomal doxorubicin induce left ventricular eccentric hypertrophy

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Objectives: High cumulative doses pegylated liposomal doxorubicin (PLD) is reported not to be harmful in cardiac function. But the cardiac function was assessed by left ventricular ejection fraction (LVEF) in echocardiogram in all of these reports. Since doxorubicin is thought to induce left ventricular eccentric hypertrophy, we assessed whether high cumulative doses of PLD cause myocardial morphological change or LVEF change.

Methods: Retrospective study was performed. Seven patients of recurrent epithelial ovarian cancer were performed echocardiogram pre- and post- PLD treatment from May 2009 to July 2011. The relationship between cumulative doses of PLD and percentage change of LVEF, left ventricular mass index (LVMI) and relative wall thickness (RWT) was statistically analyzed in Speaman’s correlation test.

Result: A median dose of PLD was 435mg/body (minimum: 65mg, maximum: 1280mg). Speaman’s correlation coefficient between the cumulative dose and LVMI percentage change was under 0.05. There was no significant correlation between cumulative dose and LVEF percentage change, and it’s of RWT.

Conclusion: High cumulative dose of PLD does not affect LVEF. LVMI percentage change has correlation with cumulative dose, its of RWT does not. It means high cumulative PLD doses induce left ventricular eccentric hypertrophy, which is associated with cardiovascular risk.
**P-219** Efficacy of intraperitoneal chemotherapy with cisplatin during staging surgery in epithelial ovarian cancer

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**Objectives:** To assess the effect of single-dose cisplatin that was intraperitoneally administered during surgery in epithelial ovarian cancer

**Method:** Data from the patients who underwent surgical management with intravenous (IV) adjuvant chemotherapy for epithelial ovarian cancer from 2007 to 2012 were retrospectively reviewed. Subjects were divided into two groups: no intraperitoneal (NIP) and intraperitoneal (IP) group according to the administration of IP cisplatin 100 mg during surgery. Clinical factors such as survival outcomes and chemotherapeutic toxicity were compared between the two groups.

**Results:** During the period, 69 patients in NIP group and 56 in IP were identified. There were no significant differences in the basic characteristics such as age, parity, initial CA 125, surgical procedures, and histologic type, but IP group had a higher rate of advanced stage. After adjusting the stage by multivariate analysis, the tumor recurrence showed no significant association with IP chemotherapy with cisplatin ($p = 0.252$). Disease free survival (DFS) was 45 months in NIP and 63 months in IP with no statistical significance ($p = 0.09$). Although a grade 3 anemia was more common in IP group before IV chemotherapy, there was no difference in the rate of neutropenia or gastrointestinal trouble, as well as the rate of incompletion of IV chemotherapy.

**Conclusion:** IP chemotherapy with single-dose cisplatin during surgery seems to have no definite benefit in the tumor recurrence and survival, and can cause the transient hematotoxicity without serious effect on IV chemotherapy.

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**P-220** Efficacy of pegylated liposomal doxorubicin (PLD) for recurrent epithelial ovarian cancer

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**Objectives:** To evaluate the treatment outcomes and adverse effects of pegylated liposomal doxorubicin (PLD) for the treatment of recurrence epithelial ovarian cancer or PPA.

**Methods:** Medical records of patients with recurrent ovarian cancer or PPA who were treated with pegylated liposomal doxorubicin (PLD) in Bhumibol Adulyadej Hospital, Thailand between January 2007 and April 2013 were reviewed. Demographic data, stage, pathology, chemotherapy response, survival rates, and toxicities were evaluated. Months of survival were calculated by the method of Kaplan-Meier from the date after initiation of chemotherapy to death or the last date of follow-up.

**Results:** Forty-nine patients were included in the study. Forty-eight with recurrent ovarian cancer and one PPA. The majority of patients 85.7% had platinum resistant/refractory status. The mean age of the patients was 55 years (range 31-76). The overall response rate was 24.5%. There was 10 complete response and 2 partial responses. The median progression-free and median overall survival was 8 months and 17 months respectively. The mean number of cycles delivered was 4.4 cycles (total 215 cycles). The incidence of grade 3, 4 hematologic toxicity were 40.9% (anemia, neutropenia and thrombocytopenia was 46%, 20% and 16.3%, respectively). Only 0.1% (4/49) was suffered from febrile neutropenia and no drug toxicity-related death. About non-hematologic toxicity such as grade 3, 4 PPE, mucositis were found only 0.02% (1/49).

**Conclusions:** PLD chemotherapy appears to have promising activity in recurrent epithelial ovarian cancer with an acceptable toxicity profile.
P-221 Clinical usefulness of CPT-11 as a single agent for recurrent ovarian cancer


Cancer Institute Hospital, Japan

Objective: This study aims to evaluate the efficacy of Camptothecin (CPT-11) as a single agent for recurrent ovarian cancer.

Methods: We retrospectively reviewed all patients with recurrent ovarian cancer treated with CPT-11 at a single institution between August 2009 and March 2013. Twenty-one patients treated with CPT-11 were confirmed.

Results: With respect to FIGO staging, one was in stage 2B, 2 in 2C, 12 in 3C, and 6 in 4. Median age was 63 years old (23-77). With respect to histologic subtypes, 19 were in serous, 1 in endometrioid, and 1 in adenocarcinoma. Otherwise, Median regimens number before CPT-11 was one (1-5). Median cycle numbers before CPT-11 was 17 (4-44). With respect to regimen number treated by single agent before administration of CPT-11, 15 patients had received no single agent, 3 had received one regimen, and 3 had received two regimens. With respect to response by RECIST, all patients except one SD patient showed PD. With respect to response, none of responder was recognized by RECIST, but 2 responders (10%) were recognized by Rustine’s criteria using CA125. Median OS was 16 months (4-40). With respect to adverse effect (AE), no hematologic AE greater than grade 3 was recognized. But nausea in 2 patients and diarrhea in 2 were recognized as AE more than grade 3.

Conclusion: Our results suggest that CPT-11 is administered safely for patients of recurrent ovarian cancer.

P-222 Four-day oxitecan hydrochloride schedule in heavily pretreated recurrent ovarian carcinoma patients

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Objective: The prognosis of patients with recurrent ovarian carcinoma is poor after first line platinum-based chemotherapy. In these patients, the goals of chemotherapy include palliation of symptoms and preservation of quality of life. We investigate the efficacy and safety of lower dose oxitecan hydrochloride (Hycamin) chemotherapy for 4 days in heavily pretreated patients with recurrent ovarian carcinoma for palliative treatment.

Methods: Seven patients of recurrent ovarian carcinoma treated with Hycamin from July 2012 to July 2013 were reviewed from medical records. Hycamin was administered at the doses of 0.72 mg/m²/day, on day 1 to 5 or day 1 to 4 of a 4-week schedule.

Results: The median age of the patients was 62 years (range 46-70 years). The median numbers of prior lines of chemotherapy was 5 lines (range 3-6 lines). All patients were received paclitaxel carboplatin or docetaxel carboplatin regimen. A median of three courses (range, 1-7 courses) of Hycamin was administered. We evaluated total 23 courses of Hycamin therapy (2 of day1-5 and 21 of day1-4). Four of 7 patients, ten of 23 courses experienced Grade2/3 neutropenia. Two of Grade2 thrombocytopenia was observed in two of 5 days schedule. Platelet nadirs were about 50,000/mm² in both Grade2 cases. No Grade2/3/4 thrombocytopenia was observed in 4-days schedule. One patient was stable disease and 5 were progressive disease.

Conclusion: Administration of reduced doses (1mg/m²/day) Hycamin in 4-days regimen may be safe and feasible for heavily pretreated recurrent ovarian carcinoma patients for palliative treatment.
P-223 Efficacy and limitations of single-agent gemcitabine in patients with taxane/platinum-resistant recurrent ovarian cancer: A single institutional experience

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Background: Single-agent gemcitabine (GEM) is used as a chemotherapeutic regimen for taxane/platinum-resistant recurrent ovarian cancer. The response rate is not high, and the limit of treatment must also be recognized. However, in clinical practice, GEM is commonly selected for 2nd and 3rd line or more therapies. There is no evidence regarding the significance of GEM administration as a 4th line or more therapy. The purpose of this study was to clarify the antitumor effects of GEM for taxane/platinum-resistant recurrent ovarian cancer with respect to treatment lines.

Methods: The subjects were patients with taxane/platinum-resistant recurrent ovarian cancer who underwent 2 cycles or more of GEM therapy between June 2007 and June 2012. As a rule, GEM was administered at 1000 mg/m² on days 1, 8, and 15 of a 28-day cycle. This was a retrospective study.

Results: The subjects were 55 patients. The median number of previous chemotherapeutic regimens was 3 (range 1-7), and that of GEM administration cycles was 3 (range 2-11). Concerning the antitumor effects, a partial response was achieved in 3 patients, the disease was stable in 17, and disease progression was noted in 35. The response rate was 5% (3/55). The disease control rate (DCR) was 36% (20/55). With respect to the number of previous chemotherapeutic regimens, the DCRs in patients who had received 1, 2, 3, and 4 or more regimens were 75 (3/4), 47 (8/17), 32 (6/19), and 20 (3/15) %, respectively.

Conclusions: The DCR decreased with an increase in the number of previous chemotherapeutic regimens. This data are valuable for both physicians and patients, providing a clue to the adequate use of GEM in patients with an extensive treatment history.

P-224 Survival impact of Stage I clear cell ovarian carcinoma

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We analyzed Stage I clear cell carcinoma of the ovarian patients and evaluated what the survival impacts are. 60 ovarian clear cell carcinoma patients are collected from clinicopathologic data in our hospital between 2005 and 2013. 31 patients with complete surgical staging belong to Stage I (Stage IA n = 8, Stage IC (b) n = 10, Stage IC (other) n = 13). All Stage IA and IC (b) and 5 of 13 IC (other) patients did not receive adjuvant chemotherapy. 1 patient from each Stage IA and IC (b) experienced recurrence. Among Stage IC (other) patients, 4 of 5 patients without adjuvant chemotherapy and 4 of 8 with adjuvant chemotherapy died within 5 years. We can see Stage IA and IC (b) have no significant difference between disease free and overall survival but IC (other) has significantly poorer prognosis. Adjuvant chemotherapy for Stage IC (other) is suggested to suppress recurrence but effectiveness is unclear with our limited study.
**P-225 Combination chemotherapy with itraconazole for patients with recurrent or persistent ovarian clear cell carcinoma**

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**Background and aims:** Recurrent or persistent ovarian clear cell carcinoma (CCC) rarely responds to cytotoxic agents. Itraconazole (ITCZ), a commonly used antifungal agent, is a potent inhibitor of the P-glycoprotein (Pgp) efflux pump, angiogenesis, and the Hedgehog pathway. We evaluated the efficacy and feasibility of chemotherapy with ITCZ for CCC.

**Methods:** Medical charts of CCC patients who had received chemotherapy with ITCZ were retrospectively reviewed. Adverse events were graded according to the National Cancer Institute common toxicity criteria, version 4.0. Efficacy was evaluated according to the 2010 criteria of the Gynecologic Cancer InterGroup (GCIG).

**Results:** Between 2008 and 2013, 9 patients with recurrent or persistent CCC were referred to our institution. Five patients had a history of progression through paclitaxel and carboplatin, and none had received prior treatment with bevacizumab or other targeted therapy. Eight patients received docetaxel (35 mg/m\(^2\), day 1) and carboplatin-based (area under the curve, 4 mg·min \(^{-1}\)·mL\(^{-1}\); day 1) chemotherapy with an oral ITCZ solution (400 mg, days 2 to 2), repeated every 2 weeks. One patient received non-platinum combination chemotherapy with ITCZ. The response rate was 41% (95% CI 12.7%–77%) according to the GCIG criteria. Median progression-free survival and overall survival were 544 days (95% CI, 82–544 days) and 1047 days (95% CI, 462–1332 days), respectively. None of the patients experienced febrile neutropenia or required platelet transfusion.

**Conclusions:** Chemotherapy with ITCZ is promising for prolonging overall survival in CCC patients.

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**P-226 Gene therapy by the polymer multiplex-coated oncolytic adenovirus using the chondroitin sulfate and polyethyleneimine for ovarian cancer**

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Ovarian cancer is easy to disseminate intraperitoneally. Many new treatment methods have been developed but the sufficient survival rate is yet to be obtained. Recently, replication competent oncolytic viral vectors have been developed to improve antitumor activity. We constructed midkine promoter-introduced oncolytic adenovirus, AdE3 midkine and are studying the antitumor effect for ovarian cancer. However, the cytotoxic effect of oncolytic adenovirus is insufficient by generation of neutralizing antibodies. Antiadenovirus neutralizing antibodies inhibited repetitive oncolytic adenovirus infection and antitumor effect of oncolytic adenovirus. In order to overcome adenoviral immunogenicity, we coated oncolytic adenovirus with layer-by-layer deposition of ionic polymers and produced the multilayer-coated virus particles. AdE3 midkine was coated in multilayers by positively charged PEI (polyethylenimine) and negatively charged CS (chondroitin sulfate). Multilayer polymer forming adenovirus was demonstrated by the electron microscope from the virus only to 12 polymer layers. Intratumoral and intraperitoneal injections of polymer-coated AdE3 midkine induced respectively 100% and 70% of complete tumor reduction. From these results, layer-layer deposition of the ionic polymer coated oncolytic adenovirus completely overcome the adenovirus induced immunogenicity and might be the promising therapeutic tool for ovarian cancer.
The effect and adverse events of radiation therapy for chemotherapy-resistant recurrent epithelial ovarian cancer

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Backgrounds/Aims: While radiation therapy is administered as palliative therapy for recurrent ovarian cancer, it remains unclear whether it improves prognosis. Methods: Effects and adverse events for patients with recurrent epithelial ovarian cancer who underwent radiation therapy in our hospital from 2002 to 2010 were investigated using medical records. Results: A total of 46 subjects comprising 33 patients whose recurrent lesions were limited to inside the irradiation field (therapeutic radiation group: TRG) and 13 patients with some recurrent lesions outside the irradiation field (palliative radiation group: PRG) were included. The TRG demonstrated a response rate (RR) of 63%, disease control rate (DCR) of 97%, progression-free survival (PFS) of 10 months and overall survival (OS) of 20 months. The PFS of radiation therapy was significantly longer than that of chemotherapy received just before radiation therapy. The PFS of the patients with recurrent intrapelvic lesions was more favorable than that of the patients with some extrapelvic recurrence. Duration of previous chemotherapy response or histologic type did not significantly affect PFS of radiation therapy. The RR, DCR, PFS, and OS of the PRG were 30%, 90%, 2 months, and 6 months, respectively. Acute toxicities in the TRG and PRG combined included grade (G) 1–2 diarrhea and anorexia both in 26% of patients, nausea in 17%; there were no G3 or higher acute toxicities. Late toxicities included radiation enterocolitis (G1) and ileus (G3) in 1 patient each (2%). Conclusion: Radiation therapy is a potential option for chemotherapy-resistant, localized recurrent ovarian cancer.

A prospective observational study on chemotherapy-induced nausea and vomiting (CINV) for gynecologic cancer patients by CINV study group of Japan

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Background: There has been no nationwide survey on CINV or validation of the guideline in Japan. The aim of the study is to investigate occurrence of CINV in gynecologic cancer patients on the first cycle of their chemotherapy. Method: Between April 2011 and December 2012, 2068 cancer patients who underwent systemic chemotherapy with high (IEC) or moderate emetogenic agents (MEC) were registered with CINV study Group consisting of 21 medical institutions specializing in cancer in Japan. Two-hundred fifteen patients with gynecologic cancer were observed. We investigated the relationship between CINV, clinical factors, and the CINV prediction by medical staffs, among the acute phase (within 24 hours after administration) and the late phase (24 hours after). Vomiting was evaluated with its frequency, and nausea was evaluated with a 100 mm horizontal VAS on days 1–7. Result: Median age was 56 (27–81) years, and 50 patients were treated with IEC and 165 with MEC. In the acute phase, nausea (>25mm) was observed in 98% (IEC 12%, MEC 89%, p = 0.053). In the late phase, nausea and vomiting were observed in 46.5% (56%, 44.2%, p = 0.18) and 13% (14%, 126%, p = 0.07) respectively. In the multivariate analysis, independent relative factors of delayed nausea were age of per year (odds ratio = 0.97, 95% CI 0.94-0.996, p = 0.025) and history of morning sickness (2.762, 1.518–5.099, p = 0.0009). The actual occurrence of CINV was different from the prediction before chemotherapy by gynecologists. Conclusion: CINV seems to be controlled by combining antiemetics according to the guideline; however delayed nausea was frequently observed not only in IEC but also in MEC. Thus further investigations are needed to alleviate nausea.
**P-229** Protective effect of goshajinkigan against peripheral nerve disorder induced by paclitaxel

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**Objective:** Paclitaxel induces “numbness” and significantly reduces QOL of patients. This study aimed to evaluate the protective effect of goshajinkigan against peripheral nerve disorder induced by paclitaxel and elucidate the mechanisms.

**Methods:** Using the rats of paclitaxel-induced peripheral neuropathy, we performed studies. The rats were assigned to 3 groups: (a) control group, (b) paclitaxel group, and (c) paclitaxel plus goshajinkigan group and the allodynia pain threshold was evaluated. Portions of the dorsal root ganglion were processed for electron microscopy. The gene expression of transient receptor potential (TRP) family relating to transmission of sensory irritation in the dorsal root ganglion was compared by the DNA microarray and RT-PCR. The location of TRP and its complex was investigated by tissue microarray.

**Results:** The threshold of paclitaxel-treated rats was significantly decreased compared with the paclitaxel plus goshajinkigan group. Electron microscopic observation showed that almost all cells were normal in the paclitaxel plus goshajinkigan group, but nerve degeneration was marked in the paclitaxel group. The expression of TRPV4 gene of the paclitaxel group increased compared with other two groups. TRPV4, α2δ integrin, and Src tyrosin kinase were expressed strongly in the dorsal root ganglion in the paclitaxel group and they were expressed weekly in the paclitaxel plus goshajinkigan group.

**Conclusion:** These results suggest that paclitaxel causes hypersensitivity to pain through degeneration of the dorsal root ganglion and the expression of TRPV4, α2δ integrin, and Src tyrosin kinase, and that goshajinkigan prevents the degeneration of nerve cells and suppressing complex formation of TRPV4.

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**P-230** Usefulness of the Palliative Prognostic Index for terminally ill patients with gynecologic cancers

Keiichiro Nakamura, Tomoko Haruma, Chikako Fujishima, Tomoyuki Kusumoto, Noriko Seki, Yuji Hiramatsu

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**Objective:** We investigated the prognostic accuracy of the palliative prognostic index (PPI) for patients with terminal gynecologic cancer.

**Study design:** In our hospital, 67 patients with terminal gynecologic cancers (23 cervical cancer patients, 18 endometrial cancer patients, and 26 ovarian cancer patients) underwent palliative care. We examined the prognostic accuracy of their PPI scores (palliative performance status, dyspnea at rest, oral intake, edema and delirium) without clinical prediction of survival (CPS) or laboratory dates. Survival rates were analyzed using the Kaplan-Meier method; differences between were examined using the log-rank test.

**Results:** Median PPI scores of patients with terminal gynecologic cancer were 3.43 ± 3.89 (cervical cancer: 2.39 ± 3.17; endometrial cancer: 3.80 ± 4.60; ovarian cancer: 4.09 ± 3.89). For predictions of survival of less than 3 weeks, patients with higher PPI (PPI > 6.0) had significantly shorter survival than those with lower PPI (PPI ≤ 6.0) for gynecologic, cervical, endometrial, and ovarian cancers (P < 0.001, P = 0.009, P < 0.001, and P < 0.001, respectively).

In particular, the survival of less than 3 weeks of PPI > 6.0 was predicted with sensitivity 88.23%, 75.0%, 100.0%, and 87.5%, specificity 78.0%, 84.21%, 76.92%, and 72.22% on gynecologic, cervical, endometrial, ovarian cancers.

**Conclusions:** PPI is a useful predictor for patients with terminal gynecologic cancer.
A comparison of clinical features and other lifestyle on survival in Stage III/IV serous ovarian cancer


Asan Medical Center, Korea

Objective:
Ovarian cancer is the No.1 killer among gynecologic malignancy in the United States and No.2 in Republic of Korea. Age, tumor grade, size, and number of residual lesions after primary cytoreductive surgery are significant prognostic factors in advanced ovarian carcinoma. On the other hand there are limited studies about lifestyle as prognostic factor of EOC. The objective of this study was to define clinical feature and lifestyle pattern associated with favorable outcome in patients with advanced serous ovarian cancer.

Method:
All patients with stage III/IV serous ovarian carcinoma who received primary cytoreductive surgery between 2001 and 2011 at Asan Medical Center, Korea were retrospectively reviewed. Of these 298 patients, 30 patients lived more than 60 months without evidence of disease and 20 patients had been recurrent in 6 month from initial debulking surgery. Clinical features and life style of two groups were identified and compared statistically.

Result:
Presence of residual disease (p = 0.012), less BMI before first course of chemotherapy (p = 0.009) and higher CA-125 level after completion of first course of chemotherapy (p < 0.001) were associated with poor outcome. Age, Parity, Stage, initial BMI, initial CA-125 level were not statistically different in both groups. In lifestyle aspect, having a religion (p = 0.026) and more number of supportive family members (p = 0.033) are associated with better survival.

Conclusion:
Having a religion and many supportive family members and keeping in weight after operation may be helpful to prolong survival. In further study, correcting compounding factor and more consideration of other socioeconomic characteristics should be regarded.

Lymphomas of female genital tract: A clinical dilemma

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Malignant lymphomas of the female genital tract are rare and the ovary is the commonest site. Diagnosis is often incidental to routine evaluation for gynecologic symptoms. They present diagnostic dilemmas for treating physicians and pathologists not familiar with their clinicopathologic features. The aim of this study is to highlight the importance of thorough diagnostic workup as there is always a rare possibility of encountering these uncommon malignancies in female genital tract.

In this study, we describe 20 cases of NHL involving the female genital tract treated at our institution, a major tertiary referral cancer center, from 2003-Sept 2013. They have been classified into two groups: (a) Presumed primary NHL (2) classified as localized to female genital organs (b) Secondary NHL (14) involving the gynecologic tract as a part of systemic disease, based upon clinical exam, imaging and bone marrow biopsy. Of 204 could not be classified due to unavailability of adequate details. This classification of the cases will be further elucidated in the presentation. We report the clinicopathologic features and results of immunohistochemical studies in these cases.

The patients ranged in age from 20-73 yrs (Median: 48 yrs). Vaginal bleeding and pelvic pressure were the commonest presenting symptoms. The ovaries were the commonest site (10) followed by uterine cervix (5), uterus (3), and vagina (2). Each tumor was classified according to the WHO Classification for lymphomas as follows: Diffuse large B cell lymphoma (10), Burkitt lymphoma (6), Follicular lymphoma (1), Plasmablastic lymphoma (1), Lymphoblastic lymphoma (1), NK/T cell type (1). 3 patients were immunocompromised, HIV-seropositive patients (15%). All were subsequently referred to our Lymphoma Group for further management.

We will briefly review the available literature on lymphomas of the female genital tract.

1. Mod Pathol 2000; 13 (1) : 19-28
Speakers

A

Cheung, Annie NY
Educational Lecture on Endometrial Cancer
Cho, Chi-Heum
Educational Lecture on Endometrial Cancer,
P-116,
P-201,
P-202
Cho, Hanbyoul
P-038
Choi, Chel Hun
P-177
Choi, Eun-Jeong
WS6-07
Chou, Cheng-Yang
P-193
Chou, Hung-Hsueh
P-019
Chuang, Chi-Mu

The 3rd ASGO Evening Symposium[2]

B

Baasankhuu, Dashdemberel
P-171
Bae, Hyo Sook
P-102
Baek, Min-Hyun
WS2-05,
WS3-06,
WS6-03,
WS7-07,
P-098
Bhatla, Neerja
The 3rd ASGO Asia-Oceania Symposium,
P-017
Bilkod, Jimmy A.
WS2-10,
P-051
Butsuhara, Yusuke
P-059

C

Cahyono, Endy
P-076
Chang, Cheng-Chang
WS8-07
Chang, Chih-Long
The 3rd ASGO Evening Symposium[1]
Chang, Min Young
P-183
Chang, Suk-Joon
Educational Lecture on Gynecologic Cancer Surgery[2]
Chang, Ting-Chang
Educational Lecture on Gynecologic Cancer Surgery[2]
Chen, Chao-Yu
P-113
Chen, Chi-An
Educational Lecture on Gynecologic Cancer Surgery[1]
Chen, Chunling
Educational Lecture on Gynecologic Cancer Surgery[1]
Chen, Tze-Chien
WS7-09
Chen, Xiaojun
Educational Lecture on Endometrial Cancer
Cheng, Wen-Fang
P-118
Cheng, Ya-Min
P-083

D

Daimon, Emiko
P-108
Dangaa, Likhagadulam
P-131
Denny, Lynette A.
The 3rd ASGO Opening Luncheon Symposium, Palliative Care for Women with Gynecological Cancer
Dhanya, Dinesh
P-157
Dong, Peixin
WS8-02
Dy Echo, Ana Victoria V.
P-216

E

Eto, Takako
Round Table Discussion for High-Risk Endometrial Cancer

F

Febrianty, Paulina
P-151
Friadi, Andi
WS7-01
Fujii, Takuma
Educational Lecture on Gynecologic Cancer Surgery[3]
Fujiiwara, Keiichi
The 3rd ASGO Evening Symposium[1]
Fujiiwara, Kiyoshi
The 3rd ASGO Evening Symposium[6]
Fukagawa, Fumiko
P-090
Fukuda, Takeshi
P-146
Funamoto, Hiroshi
The 3rd ASGO Luncheon Symposium[5]
Futagami, Masayuki
P-207

G

Gaddi, Andrea M
P-159
Germar, Maria Juliesta V
P-025

H

Hamanishi, Junzo
The 55th JSGO Grant Seminar
Han, Ji Hyun
P-153,
P-156
Han, Woo-Suk
P-023,
P-127
Hanada, Tetsuro
P-069
Haruma, Tomoko
P-035
Hayama, Tomonari
WS5-09
Hayashi, Hirohito
P-168
Hayashi, Takuma
WS8-09
Hidayat, Yudi Mulyana
WS8-10
Higashi, Teppei
WS3-02
Hiraoka, Masahiro
The 3rd ASGO Opening Plenary: Welcome from Japan
 Hirata, Kimiko
P-073
 Hirata, Yukihiro
P-188
Hisamatsu, Takeshi
P-197
Hong, Shanshan
P-192
Hongo, Atsushi
WS6-10
Horikawa, Naoki
P-063
Hsiao, Sheng-Mou
P-120
Hsu, Keng-fu
WS2-08
Huang, Chia-Yen
WS2-07
Huntsman, David G.
The 3rd ASGO Evening Symposium[1]. The 3rd ASGO Morning Lecture[2]

I

Ichikawa, Go
P-107
Ida, Tsutomu
P-147
Ihalagama, Himali, P
WS1-05,
P-152
Ikeda, Masae
WS7-08
Inokuchi, Haruo
P-142
Inoue, Kayo
P-225
Ishikawa, Masako
WS5-06
Ishikawa, Takahisa
P-110
Iskandar, Jasmine
WS2-04
Isonishi, Seiji
The 3rd ASGO Evening Symposium[1]
Ito, Fuminori
P-135
Ito, Ikuro
P-222
<table>
<thead>
<tr>
<th>Authors</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iura, Ayaka</td>
<td>Kinoe, Yasuto, P-155</td>
</tr>
<tr>
<td>Jacinto, Elizabeth K.</td>
<td>Kitae, Shoko, P-182</td>
</tr>
<tr>
<td>Jain, Satish</td>
<td>Ko, A.R., P-088</td>
</tr>
<tr>
<td>Jain, Tanushree</td>
<td>Kobayashi, Aya, Y.</td>
</tr>
<tr>
<td>Jain, Veena</td>
<td>Kobayashi, Hiroaki</td>
</tr>
<tr>
<td>Jiang, Hong</td>
<td>Educational Lecture on Gynecologic Cancer Surgery[3]</td>
</tr>
<tr>
<td>Jini, Tomoatsu</td>
<td>Kong, Tae Wook, P-041</td>
</tr>
<tr>
<td>Kaga, Hiroshi</td>
<td>Koo, Yu-Jin, WS1-09</td>
</tr>
<tr>
<td>Kampan, Nirmala Chandrakega</td>
<td>Korkmaz, Mehmet, P-021</td>
</tr>
<tr>
<td>Kamura, Toshiharu</td>
<td>Kwang, John Chia Whay, Round Table Discussion for High-Risk Endometrial Cancer</td>
</tr>
<tr>
<td>Kanao, Hirooki</td>
<td>Kudo, Risa, P-141</td>
</tr>
<tr>
<td>Kanda, Rinka</td>
<td>Kumagai, Koji, P-180</td>
</tr>
<tr>
<td>Kaneda, Hiroshi</td>
<td>Kumarasamy, Suresh</td>
</tr>
<tr>
<td>Kandathavorn, Nuttavat</td>
<td>Educational Lecture on Gynecologic Cancer Surgery[2]</td>
</tr>
<tr>
<td>Kashiyama, Tomoko</td>
<td>Kurosaki, Akira, WS0-05</td>
</tr>
<tr>
<td>Kataragi, Hiroshi</td>
<td>Kurosue, Keisuke, P-128</td>
</tr>
<tr>
<td>Kata, Kazuyoshi</td>
<td>Kurosue, Hiroyuki, P-011</td>
</tr>
<tr>
<td>Kato, Seiko</td>
<td>Kusunoki, Soshi, P-119</td>
</tr>
<tr>
<td>Kato, Tatsuya</td>
<td>Kwon, Yong-Soon, WS4-07</td>
</tr>
<tr>
<td>Kawano, Mahiru</td>
<td>Lai, Choyng-Huey, The 3rd ASGO Asia–Oceanica Symposium</td>
</tr>
<tr>
<td>Kawano, Yasuhisa</td>
<td>Lai, Hung-Cheng, WS5-03</td>
</tr>
<tr>
<td>Kesic, Vesna</td>
<td>Latap, Ronald R., P-077</td>
</tr>
<tr>
<td>Kharma, Budiman</td>
<td>Lau, Hei-Yu, P-129</td>
</tr>
<tr>
<td>Khonsa, Oni</td>
<td>Lay, Sanine, P-053</td>
</tr>
<tr>
<td>Kim, Dae–Yeon</td>
<td>Lee, Chul Min, Round Table Discussion for Serious Ovarian Cancer(SOC)</td>
</tr>
<tr>
<td>Kim, Rae Won</td>
<td>Lee, Chyi–Long, WS3-01</td>
</tr>
<tr>
<td>Kim, Jae–Hoon</td>
<td>Lee, Jeon–Won, Educational Lecture on Gynecologic Cancer Surgery[3]</td>
</tr>
<tr>
<td>Kim, Kidong</td>
<td>Lee, Jeon–Won, Educational Lecture on Gynecologic Cancer Surgery[3]</td>
</tr>
<tr>
<td>Kim, Min Kyu</td>
<td>Lee, Jung–Yun, WS4-02</td>
</tr>
<tr>
<td>Kim, Seung Jo</td>
<td>Lee, Keun Ho, WS3-07</td>
</tr>
<tr>
<td>Kim, Tae–Jin</td>
<td>Lee, Shin–Wha, WS5-08</td>
</tr>
<tr>
<td>Kim, Young–Tak</td>
<td>Lim, Peter C., Role of da Vinci in Gynecological Cancer Surgery</td>
</tr>
<tr>
<td>Kim, Yun Hwan</td>
<td>Lim, Peter C., Role of da Vinci in Gynecological Cancer Surgery</td>
</tr>
<tr>
<td>Kuni, Beatriz</td>
<td>Lumachi, Maria Margarita M., Montinina–Moraes, Merind M.</td>
</tr>
<tr>
<td>Kurokawa, Tetsuji</td>
<td>Lupton, Paul, Role of da Vinci in Gynecological Cancer Surgery</td>
</tr>
<tr>
<td>Kurosaki, Akira</td>
<td>Liu, Yuantao, WS1-08</td>
</tr>
<tr>
<td>Kurosue, Keisuke</td>
<td>Lu, Chien–Hsing, WS1-10</td>
</tr>
<tr>
<td>Kurosue, Hiroyuki</td>
<td>Mabuchi, Yasushi, P-060</td>
</tr>
<tr>
<td>Kusunoki, Soshi</td>
<td>Machida, Shizuo, P-227</td>
</tr>
<tr>
<td>Kwong, Yong-Soon</td>
<td>Maeda, Goro, P-105</td>
</tr>
<tr>
<td>Kurosaki, Akira</td>
<td>Magibay, Paul, Role of da Vinci in Gynecological Cancer Surgery</td>
</tr>
<tr>
<td>Kusunoki, Soshi</td>
<td>Mano, Hirooki, The 3rd ASGO Opening Plenary: Welcome from Japan</td>
</tr>
<tr>
<td>Kwong, Yong-Soon</td>
<td>Mariya, Tatsuki, P-199</td>
</tr>
<tr>
<td>Kurosue, Hiroyuki</td>
<td>Maryan, Chhit, P-052</td>
</tr>
<tr>
<td>Kusunoki, Soshi</td>
<td>Mata, Divina Ghea B., P-092</td>
</tr>
<tr>
<td>Kwon, Yong-Soon</td>
<td>Matoda, Maki, P-079</td>
</tr>
<tr>
<td>Kurokawa, Tetsuji</td>
<td>Matsumoto, Koji, Educational Lecture on Ovarian Cancer</td>
</tr>
<tr>
<td>Kusunoki, Soshi</td>
<td>Matsumura, Satoko, P-160</td>
</tr>
<tr>
<td>Kwong, Yong-Soon</td>
<td>Matsumura, Yukiko, P-229</td>
</tr>
<tr>
<td>Kurosue, Hiroyuki</td>
<td>Meevasana, Vorachart, P-022</td>
</tr>
<tr>
<td>Kusunoki, Soshi</td>
<td>Mikami, Mikio, The 3rd ASGO Luncheon Symposium[1]</td>
</tr>
<tr>
<td>Kwon, Yong-Soon</td>
<td>Mikami, Yoshiki, Round Table Discussion for High-Risk Endometrial Cancer</td>
</tr>
<tr>
<td>Lai, Choyng-Huey</td>
<td>Mitsui, Hiroko, P-196</td>
</tr>
<tr>
<td>Lai, Hung–Cheng</td>
<td>Miyagi, Etsuko, The 3rd ASGO Asia–Oceanica Symposium</td>
</tr>
<tr>
<td>Lai, Choyng-Huey</td>
<td>Miyagi, Yasunari, P-217</td>
</tr>
<tr>
<td>Latap, Ronald R.</td>
<td>Miyamoto, Tsutomu, WS8-04</td>
</tr>
<tr>
<td>Lau, Hei-Yu</td>
<td>Miyata, Hiromi, WS3-04</td>
</tr>
<tr>
<td>Lay, Sanine</td>
<td>Mizuno, Mika, P-228</td>
</tr>
<tr>
<td>Lee, Chul Min</td>
<td>Montecillo, Maria Margarita M., Montinina–Moraes, Merind M.</td>
</tr>
<tr>
<td>Lee, Chyi–Long</td>
<td>Mori, Taisuke, P-134</td>
</tr>
<tr>
<td>Lee, Jeon–Won</td>
<td>Motok, Yoko, WS6-09</td>
</tr>
<tr>
<td>Lee, Jeon–Won</td>
<td>Mulawardhana, Pungky, P-174</td>
</tr>
<tr>
<td>Lee, Jung–Yun</td>
<td>Murakami, Midori, P-091</td>
</tr>
<tr>
<td>Author</td>
<td>Title and Details</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>-----------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Park, Sang-Yoon</td>
<td>The 3rd ASGO Evening Symposium[1]</td>
</tr>
<tr>
<td></td>
<td>P-084, P-087, P-205</td>
</tr>
<tr>
<td>Sudo, Satoko</td>
<td>P-043</td>
</tr>
<tr>
<td>Sueoka, Kotaro</td>
<td>P-096</td>
</tr>
<tr>
<td>Suga, Yasuko</td>
<td>P-154</td>
</tr>
<tr>
<td>Sugihara, Takeru</td>
<td>P-117</td>
</tr>
<tr>
<td>Sugiyama, Toru</td>
<td>The 55th JSGO Educational Seminar</td>
</tr>
<tr>
<td></td>
<td>Sugiyama, Yoko</td>
</tr>
<tr>
<td></td>
<td>WS2-01</td>
</tr>
<tr>
<td>Suh, Dong Hoon</td>
<td>Round Table Discussion for High Risk Endometrial Cancer.</td>
</tr>
<tr>
<td></td>
<td>WS4-06</td>
</tr>
<tr>
<td></td>
<td>P-018, P-031</td>
</tr>
<tr>
<td>Sukegawa, Akiko</td>
<td>P-218</td>
</tr>
<tr>
<td>Sumi, Akiko</td>
<td>P-148</td>
</tr>
<tr>
<td>Sun, Yi-Hang</td>
<td>Supakarapongkul, Wisit</td>
</tr>
<tr>
<td></td>
<td>The 3rd ASGO Asia–Oceania Symposium</td>
</tr>
<tr>
<td></td>
<td>P-112</td>
</tr>
<tr>
<td>Suzuki, Miwa</td>
<td>P-198</td>
</tr>
<tr>
<td>Suzuki, Shiro</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Tabuchi, Yuta</td>
</tr>
<tr>
<td></td>
<td>P-094</td>
</tr>
<tr>
<td>Tago, Koori</td>
<td>P-093</td>
</tr>
<tr>
<td>Takagi, Kazuko</td>
<td>P-226</td>
</tr>
<tr>
<td>Takai, Hiroshi</td>
<td>P-086</td>
</tr>
<tr>
<td>Takao, Yumi</td>
<td>P-145</td>
</tr>
<tr>
<td>Takatori, Eriko</td>
<td>P-081</td>
</tr>
<tr>
<td>Takaya, Hisamitsu</td>
<td>P-209</td>
</tr>
<tr>
<td>Takei, Yuji</td>
<td>P-223</td>
</tr>
<tr>
<td>Takeshima, Nobuhiro</td>
<td>The 3rd ASGO Morning Lecture[1]</td>
</tr>
<tr>
<td></td>
<td>Taketo, Makoto Mark</td>
</tr>
<tr>
<td></td>
<td>The 55th JSGO Educational Seminar</td>
</tr>
<tr>
<td></td>
<td>Taki, Mana</td>
</tr>
<tr>
<td></td>
<td>P-044</td>
</tr>
<tr>
<td>Tomate, Masato</td>
<td>P-137</td>
</tr>
<tr>
<td>Tanaka, Tomohito</td>
<td>P-064</td>
</tr>
<tr>
<td>Tanaka, Yoshimichi</td>
<td>WS8-05</td>
</tr>
<tr>
<td>Tanamas, Gregorius</td>
<td>WS1-02</td>
</tr>
<tr>
<td>Tanigawa, Terumi</td>
<td>P-030</td>
</tr>
<tr>
<td>Taniguchi, Tomoko</td>
<td>P-143</td>
</tr>
<tr>
<td>Tanizaki, Yuko</td>
<td>WS5-04</td>
</tr>
<tr>
<td>Tay, Sun Kuei</td>
<td>The 3rd ASGO Asia–Oceania Symposium</td>
</tr>
<tr>
<td></td>
<td>The 3rd ASGO Luncheon Symposium[3]</td>
</tr>
<tr>
<td>Terao, Yoshito</td>
<td>Teral, Yusuke</td>
</tr>
<tr>
<td></td>
<td>The 3rd ASGO Luncheon Symposium[5]</td>
</tr>
<tr>
<td>Teramoto, Mizue</td>
<td>P-106</td>
</tr>
<tr>
<td>Terao, Yasushika</td>
<td>Management of Malignant Asci in Gynecological Cancer</td>
</tr>
<tr>
<td></td>
<td>Terauchi, Fumitoshi</td>
</tr>
<tr>
<td></td>
<td>The 3rd ASGO Luncheon Symposium[6]</td>
</tr>
<tr>
<td>Thin, Khin, May</td>
<td>P-040</td>
</tr>
<tr>
<td>Tint, Aye</td>
<td>P-015</td>
</tr>
</tbody>
</table>

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Nagao, Shoji                    | Management of Malignant Ances in Gynecological Cancer                          |
|                                | P-014                                                                            |
| Nakagawa, Yoko                 | P-078                                                                            |
| Nakajima, Takahiro             | P-109                                                                            |
| Nakamura, Haruki               | P-066                                                                            |
| Nakamura, Keiichiro            | P-230                                                                            |
| Nakamura, Koji                 | WS2-09                                                                           |
| Nakayama, Ikue                 | P-187                                                                            |
| Nakayama, Kentaro              | The 3rd ASGO Morning Lecture[2]                                                  |
| Narayan, Kaishl                | The 3rd ASGO Luncheon Symposium                                                  |
| Ngan, Hextan YS                | P-115                                                                            |
| Nibe, Yuzuru                   | WS7-02                                                                           |
| Niimi, Miyuki                  | The 55th JSGO Educational Seminar                                               |
| Nilasari, Dewita               | WS4-01                                                                           |
| Nishida, Naoyo                 | P-144                                                                            |
| Nishimura, Masato              | P-075                                                                            |
| Nishiyama, Masahiko            |                                                                                |
| Noda, Shin-ei                  | P-072                                                                            |
| Noe, Eun Bee                   | WS3-09                                                                           |
| Noomura, Hitadaka              | P-004                                                                            |
| Nugroho, Hari                  | P-070                                                                            |
| Nuranna, Laila                 | Educational Lecture on Gynecologic Cancer Surgery[2]                             |
| Nyuunt, Thazin                 | P-016                                                                            |

---

Oda, Katsutoshi                 | The 3rd ASGO Evening Symposium[2]                                                |
| Odagawa, Hiroko                | P-163                                                                            |
| Obha, Takashi                  | The 3rd ASGO Morning Lecture[4]                                                  |
| Ohno, Tatsuya                  | WS7-03                                                                           |
| Okada, Yuki                    | P-104                                                                            |
| Okame, Shin-ichi               | P-048                                                                            |
| Okamoto, Sanshiro              | P-027                                                                            |
| Okimura, Hiroyuki              | P-024                                                                            |
| Okubo, Tomoharu                | P-033                                                                            |
| Omatu, Kohei                   | P-231                                                                            |
| Otsuka, Isao                   | P-149                                                                            |

---

Padhy, Ashok Kumar              | P-007                                                                            |
| Pariyar, Jitiendra             | P-046                                                                            |
| Pariyawateeukul, Piyawan       | P-220                                                                            |
| Park, Jin–Young                | P-028                                                                            |
| Park, Sang-Yoon                | The 3rd ASGO Evening Symposium[1]                                                |
|                                | P-084, P-087, P-205                                                              |
| Sudo, Satoko                   | P-043                                                                            |
| Sueoka, Kotaro                  | P-096                                                                            |
| Suga, Yasuko                   | P-154                                                                            |
| Sugihara, Takeru               | P-117                                                                            |
| Sugiyama, Toru                 | The 55th JSGO Educational Seminar                                               |
|                                | Sugiyama, Yoko                                                                  |
|                                | WS2-01                                                                           |
| Suh, Dong Hoon                 | Round Table Discussion for High Risk Endometrial Cancer.                         |
|                                | WS4-06                                                                          |
|                                | P-018, P-031                                                                     |
| Sukegawa, Akiko                | P-218                                                                            |
| Sumi, Akiko                    | P-148                                                                            |
| Sun, Yi-Hang                   | Supakarapongkul, Wisit                                                           |
|                                | The 3rd ASGO Asia–Oceania Symposium                                             |
|                                | P-112                                                                            |
| Suzuki, Miwa                   | P-198                                                                            |
| Suzuki, Shiro                  |                                                                                |
|                                | Tabuchi, Yuta                                                                    |
|                                | P-094                                                                            |
| Tago, Koori                    | P-093                                                                            |
| Takagi, Kazuko                 | P-226                                                                            |
| Takai, Hiroshi                 | P-086                                                                            |
| Takao, Yumi                    | P-145                                                                            |
| Takatori, Eriko                | P-081                                                                            |
| Takaya, Hisamitsu              | P-209                                                                            |
| Takei, Yuji                    | P-223                                                                            |
| Takeshima, Nobuhiro            | The 3rd ASGO Morning Lecture[1]                                                  |
|                                | Taketo, Makoto Mark                                                              |
|                                | The 55th JSGO Educational Seminar                                               |
|                                | Taki, Mana                                                                       |
|                                | P-044                                                                            |
| Tomate, Masato                 | P-137                                                                            |
| Tanaka, Tomohito               | P-064                                                                            |
| Tanaka, Yoshimichi             | WS8-05                                                                          |
| Tanamas, Gregorius             | WS1-02                                                                          |
| Tanigawa, Terumi               | P-030                                                                            |
| Taniguchi, Tomoko              | P-143                                                                            |
| Tanizaki, Yuko                 | WS5-04                                                                          |
| Tay, Sun Kuei                  | The 3rd ASGO Asia–Oceania Symposium                                             |
|                                | The 3rd ASGO Luncheon Symposium[3]                                               |
| Terao, Yoshito                 | Teral, Yusuke                                                                    |
|                                | The 3rd ASGO Luncheon Symposium[5]                                               |
| Teramoto, Mizue                | P-106                                                                            |
| Terao, Yasushika               | Management of Malignant Asci in Gynecological Cancer                             |
|                                | Terauchi, Fumitoshi                                                             |
|                                | The 3rd ASGO Luncheon Symposium[6]                                               |
| Thin, Khin, May                | P-040                                                                            |
| Tint, Aye                       | P-015                                                                            |
Z
Zaloudek, Charles
Round Table Discussion for Serous Ovarian Cancer(SOC)
The 3rd ASGO Luncheon Symposium
Zaw, Thin
P-172
Zayyan, Marliyya, Sanusi
WS7-10

Togashi, Kaori
Round Table Discussion for Serous Ovarian Cancer(SOC)
Tohya, Yoshimitsu
P-062
Toita, Takafumi
The 3rd ASGO Morning Lecture
Tokunaga, Hideki
P-067
Toyoshima, Masafumi
The 55th JSGO Grant Seminar
Tozawa, Akiko
Palliative Care for Women with Gynecological Cancer
Tsuda, Naotake
P-130
Tsuij, Natsuki
P-068
Tsukamoto, Kanako
P-234
Tuipae, Suphet
P-085

U
Ukita, Masayo
P-123
Usami, Tomoka
P-208
Ushioda, Norichika
P-029
Utami, Tofan W
WS6-05,
WS6-06,
P-008,
P-178

V
Veleso, Limavel Ann M.
P-161
Veluswamy, Arun Muthuvel
WS1-03
Vitantri, Fara
P-204

W
Wakatsuki, Masaru
P-071
Wang, Kung-Liahng
The 3rd ASGO Morning Lecture
Watari, Hidemichi
Round Table Discussion for High Risk Endometrial Cancer

Y
Yahata, Hideaki
P-047
Yahata, Tamaki
P-097
Yamada, Yasushi
P-189
Yamaguchi, Munekage
P-165
Yamamoto, Akiko
P-140
Yamanoi, Koji
P-034
Yanaranop, Marut
P-173
Yeh, Lian-Shung
P-170
Yokoyama, Yoshihito
P-185
Yoneyama, Koichi
P-166
Yoon, Aera
P-055
Yoon, Ji-Young
P-219
Yoon, Joo Hee
P-212
Yoshida, Kanako
P-126
Yoshida, Yoshio
The 3rd ASGO Luncheon Symposium
Yu, Eun Jeong
WS2-02
The 3rd Biennial Meeting of Asian Society of Gynecologic Oncology
The 55th Meeting of Japan Society of Gynecologic Oncology

"New Era of Gynecologic Oncology in Asia"

Date: December 13-15, 2013
Venue: The Westin Miyako Kyoto, Japan

Certificate

This is to certify that

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has attended
the 3rd Biennial Meeting of
Asian Society of Gynecologic Oncology
held conjointly with the 55th Meeting of
Japan Society of Gynecologic Oncology
on December 13-15, 2013
in Kyoto, Japan

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Toshiharu Kamura, M.D. Ph.D.
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Asian Society of Gynecologic Oncology
Japan Society of Gynecologic Oncology

Ikuo Konishi, M.D. Ph.D.
Congress President
The 3rd Biennial Meeting of ASGO
The 55th Meeting of JSGO