CONGRESS PROGRAM

CoBrCa

3rd World Congress on Controversies in Breast Cancer

Tokyo, Japan • October 26-28, 2017

www.cobrca.org

SHIMADZU
Excellence in Science

With Your Stories

SHIMADZU Breast Care

Elmammo Avant Class NEW

Dedicated Breast PET System

This new Elmammo series provides a gentle examination without breast compression. It can support detailed structural assessments and find small breast cancers that would be hard to detect with a whole body PET.
The ability to detect breast cancer has been heightened by reducing the blind area.

Manufacturing and sales certification number : 22600BZX00008000

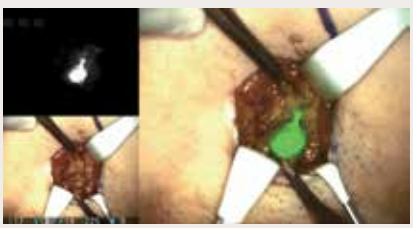
LIGHTVISION

Near-Infrared Fluorescence Imaging System

This system provides high definition ICG fluorescence imaging, which is used to perform accurate intraoperative sentinel lymph node mapping during breast cancer surgery.

Display Example :
Excision of Breast Cancer Sentinel Lymph Node

Near-infrared fluorescence image | Visible image + near-infrared fluorescence image



Visible image

• Clinical images provided by:
Kochi Medical School Hospital Breast Center

Manufacturing and sales notification number : 26B1X00003000264

• The products featured in this advertisement are intended for the Japanese market.

Shimadzu Corporation Medical Systems Division
1-3, Kanda Nishiki-cho, Chiyoda-ku, Tokyo 101-8448, Japan TEL 03-3219-5606 www.med.shimadzu.co.jp

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17:00-17:30	*Coffee break*
17:30-19:00	**Industry Symposium**
19:00	*Networking Reception*

Friday, October 27, 2017

	Hall 1	Hall 2
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09:00-10:00	**Plenary Session 3: Immunotherapy/TNBC**	
10:00-11:00	**Plenary Session 4: Adjuvant endocrine therapy**	
11:00-11:30	*Break*	
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12:45-13:45	**Luncheon Industry Symposium**	**Luncheon Industry Symposium**
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16:30-17:00	*Coffee break and poster viewing*	
17:00-18:30	**Industry Symposium**	

Saturday, October 28, 2017

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13:15-14:15	**Luncheon Industry Symposium**	**Luncheon Industry Symposium**
14:30-15:55	**Young doctors' summit in Asia**	
15:55-16:15	*Coffee break*	
16:15-18:25	**Young doctors' summit in Asia** cont.	

Welcome Letter

Dear Friends and Colleagues,

We are pleased to welcome you to the 3rd World Congress on Controversies in Breast Cancer (CoBrCa).

This CoBrCa congress will continue the tradition of directly addressing the key issues facing clinicians in their daily practice. In addition to the key issues in medical oncology, surgery and radiation oncology, CoBrCa will address controversial issues in radiology, genetics and breast reconstruction, with presentations, debates and discussions. The congress will provide a forum to effectively debate clinical dilemmas.

We would like to thank the supporters, without whose backing this congress could not take place, as well as all of you who have travelled from across the city or the world to attend the congress.

We look forward to your participation in the sessions and trust that it will be an informative and enjoyable experience.

Enjoy the exciting and modern city of Tokyo.

Sincerely,

Congress Chairpersons
Bruce Mann, *Australia*
Seigo Nakamura, *Japan*
Javier Cortes, *Spain*
Richard De Boer, *Australia*
Alastair Thompson, *USA*

Committees

Chairpersons

Bruce Mann, *Australia*

Seigo Nakamura, *Japan*

Javier Cortes, *Spain*

Richard De Boer, *Australia*

Alastair Thompson, *USA*

Local Organizing Committee

Sadako Akashi, Showa University School of Medicine
Jun Horiguchi, Gunma University Graduate School of Medicine
Shigeru Imoto, Kyorin University
Takashi Ishiakwa, Tokyo Medical University
Yoshinori Ito, The Cancer Institute Hospital of JFCR
Hiroji Iwata, Aichi Cancer Center Hospital
Hiromitsu Jinno, Teikyou University School of Medicine
Masafumi Kurosumi, Saitama Cancer Center
Shinobu Masuda, Nihon University School of Medicine
Yasuo Miyoshi, Hyogo College of Medicine
Takahiro Nakayama, Osaka International Cancer Center
Reiki Nishimura, Kumamoto Shinto General Hospital
Yasuhiro Ogawa, Hyogo Prefectural Kakogawa Medical Center
Shinji Ohno, The Cancer Institute Hospital of JFCR
Shigehira Saji, Fukushima Medical University
Akihiko Suzuki, Faculty of Medicine, Tohoku Medical and Pharmaceutical University
Nobuko Tamura, Toranomon Hospital
Masakazu Toi, Graduate School of Medicine and Faculty of Medicine Kyoto University
Hitoshi Tsuda, National Defence Medical College
Koichiro Tsugawa, St. Marianna University School of Medicine
Takayoshi Uematsu, Shizuoka Cancer Center Hospital
Yutaka Yamamoto, Kumamoto University
Hiroko Yamashita, Hokkaido University Graduate School of Medicine
Hideko Yamauchi, St. Luke's International Hospital

General Information

General Information

Congress Venue

Toranomon Hills Forum
5th Floor, Toranomon Hills Mori Tower
1-23-3 Toranomon
Minatoku, Tokyo

Language

The official language of the Congress is English. There will be simultaneous translation to Japanese.

Registration Desk

The registration desk will be open during the following hours:

Thursday, October 26, 2017	**12:00 – 19:30**
Friday, October 27, 2017	**07:30 – 18:00**
Saturday, October 28, 2017	**08:00 – 18:00**

Name badge

All participants are kindly requested to wear their name badges throughout the Congress in order to be admitted to the lecture halls and scheduled activities.

Certificate of attendance (non CME/CPD)

Certificates of attendance will be available for all participants and may be collected at the Registration Desk on Saturday, October 28, 2017.

Clothing

Business casual for all occasions

Smoking policy

This is a non-smoking event

Refreshments

A Networking Reception will be held on Thursday, October 26, 2017, 19:00.
Breakfast will be served in session halls prior to the morning symposia on Friday, October 27 and Saturday, October 28, 2017.
Coffee will be served during the coffee breaks throughout the congress.
Lunch will be served in session halls prior to the lunchtime symposia on Friday, October 27 and Saturday, October 28, 2017.

Speakers' Preview Room

Invited speakers and oral presenters are invited to visit the Speaker's Preview Room to upload their presentations.

Poster Display

Please check the Scientific Program for the board number on which you should display your poster(s). Posters should be mounted between 09:00-09:30 on Friday, October 27, 2017 and removed **by 13:00** on Saturday, October 28, 2017.

Photography

It is forbidden to take photographs, film or make recordings during the scientific program (sessions and posters).

Safety and Security

Please do not leave any bags or suitcases unattended at any time, whether inside or outside session halls.

Liability

The Congress Secretariat and Organizers cannot accept liability for personal accidents or loss or damage to private property of participants either during or directly arising from the 3rd World Congress on Controversies in Breast Cancer (CoBrCa). Participants should make their own arrangements with respect to health and travel insurance.

Congress Organizer

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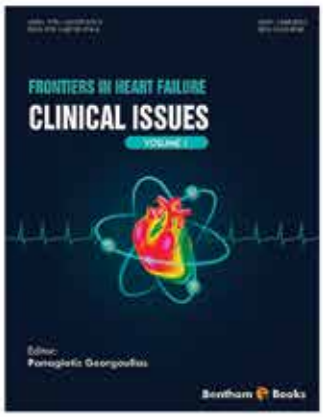
SCIENTIFIC PROGRAM

3rd World Congress on Controversies in Breast Cancer

Journal and eBooks from Bentham Science



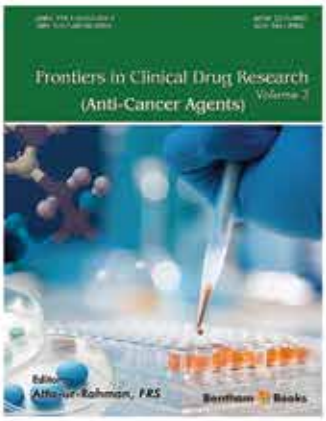
Topics in Anti-Cancer Research (Volume 5)

eISBN: 978-1-68108-333-9
ISBN: 978-1-68108-334-6
Price US$ 129.00

The fifth volume of this series entitled "Topics in Anti-Cancer Research" presents an overview of recent developments in the field of cancer. The topics covered include regulatory policies, cell based anticancer drug delivery systems, anticancer agents targeting heat shock proteins, and tumor homing peptides (THPs) for treatment of cancer.

Editors:
Atta-ur-Rahman
UK

Khurshid Zaman
USA

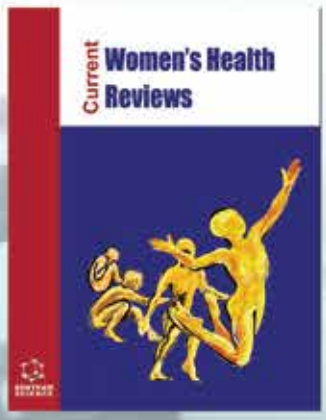


Frontiers in Clinical Drug Research - Anti-Cancer Agents (Volume 3)

eISBN: 978-1-68108-289-9
ISBN: 978-1-68108-290-5
Price US$ 99.00

The third volume of the eBook series begins with a detailed review of the molecular biology of inhibitors that target EGF-family receptors. This review is divided into two parts that covers extracellular and intracellular molecules. Other reviews cover targeted therapies for cancers such as melanoma, follicular lymphoma and topics such as cancer immunotherapy, apoptosis targeting and the Warburg Effect.

Editor:
Atta-ur-Rahman
UK



Volume 13, 2 Issues, 2017

Current Women's Health Reviews

ISSN (Print) : 1573-4048
ISSN (Online): 1875-6581

Current Women's Health Reviews publishes original research papers, frontier reviews, drug clinical trial studies and guest edited thematic issues written by leaders in the field covering a range of current topics on obstetrics and gynecology. The journal's aim is to publish the highest quality articles dedicated to research in the field. The journal is essential reading for all clinicians and researchers in the fields of obstetrics and gynecology.

Editor-in-Chief:
John Yeh
USA

Thursday, October 26, 2017

14:00-14:15 **Congress Opening** — Hall 1

14:15-15:30 **Plenary Session 1: Breast cancer genetics**

Chairpersons:
Hideko Yamauchi, *Japan*
Alastair Thompson, *USA*

14:15-14:45	**DEBATE:** That liberal use of genetic testing should be encouraged
14:15	**Yes: Arlene Chan,** *Australia*
14:30	**No: Nick Wilcken,** *Australia*

14:45-15:05 Management of genetic mutation carriers
Ava Kwong, *Hong Kong*

15:05-15:30 Panel discussion: Controversial cases
Arlene Chan, *Australia*
Nick Wilcken, *Australia*
Ava Kwong, *Hong Kong*

15:30-17:00 **Plenary Session 2: Neoadjuvant therapy** — Hall 1

Chairpersons:
Hiroji Iwata, *Japan*
Hitoshi Tsuda, *Japan*
Wolfgang Janni, *Germany*

15:30-16:05	**DEBATE:** That NAST choice should be based on more TN stage rather than on biological subtype
15:30	**TN stage: Louis Chow,** *Hong Kong*
15:42	**Biological subtype: Stacy Moulder,** *USA*
15:54	Discussion

16:05-16:40	**DEBATE:** That all patients with positive nodes pre-neoadjuvant therapy should have axillary dissection as part of cancer surgery
16:05	**Yes: Ian Campbell,** *New Zealand*
16:17	**No: Abigail Caudle,** *USA*
16:29	Discussion

16:40-17:00 The role of oral 5FU in the adjuvant setting after primary systemic therapy
Masakazu Toi, *Japan*

17:00-17:30 *Coffee break*

17:30-19:00 **Industry Symposium:**
The 21 Gene Assay: The Evidence in 2017
Supported by Genomic Health

Hall 1

Chairpersons: **Richard de Boer,** *Australia*
Seigo Nakamura, *Japan*

17:30-17:35 Introduction
Richard de Boer, *Australia*

17:35-17:50 Reproducibility of the Oncotype DX Breast Recurrence Score
Frederick Baehner, *USA*

17:50-18:15 The evidence driving the use of the Recurrence Score
Bruce Mann, *Australia*

18:15-19:00 Panel/discussion of cases where Oncotype DX Breast may/may not be useful

Moderators:
Richard de Boer, *Australia*
Seigo Nakamura, *Japan*

Panelists:
Bruce Mann, *Australia*
Stephen Chia, *Canada*
Frederick Baehner, *USA*
Shinobu Masuda, *Japan*
Hiroko Masuda, *Japan*

19:00 **Networking Reception**

Friday, October 27, 2017

08:00-09:00 **Morning Industry Symposium:**
Comprehensive genomic sequencing for breast cancer patients in Japan
Supported by Denka-KEW Genomics

Hall 1

Breakfast will be served prior to the session

Chairperson: **Seigo Nakamura,** *Japan*

Speaker: **Masayuki Nagahashi,** *Japan*

09:00-10:00 **Plenary Session 3:**
Immunotherapy/TNBC

Hall 1

Chairpersons: **Shigeru Imoto,** *Japan*
Arlene Chan, *Australia*

09:00-09:30 PARP inhibitors: Where do they fit in breast cancer management?
Wolfgang Janni, *Germany*

09:30-10:00 Is immunotherapy likely to be a game-changer in breast cancer?
Stephen Chia, *Canada*

10:00-11:00 **Plenary Session 4:**
Adjuvant endocrine therapy

Hall 1

Chairpersons: **Sadako Akashi-Tanaka,** *Japan*
Javier Cortes, *Spain*

10:00-10:30 **DEBATE:** That OFS + AI should be standard of care in young patients with high-risk HR+ve breast cancer
10:00 **Yes: Wolfgang Janni,** *Germany*
10:15 **No: Richard de Boer,** *Australia*

10:30-11:00 Duration of/choice of adjuvant endocrine therapy
Nick Wilcken, *Australia*

11:00-11:30 *Coffee break and poster viewing*

11:30-12:30 **Parallel Session 5: Imaging** — Hall 1

Chairpersons: **Chiun-Sheng Huang,** *Taiwan*
Bruce Mann, *Australia*

11:30-11:50 Breast ultrasound in cancer screening: The J-start experience
Akihiko Suzuki, *Japan*

11:50-12:10 Screening technologies: One size does not fit all
Elizabeth Morris, *USA*

12:10-12:30 What is the best way to assess response to neoadjuvant therapy?
Naoki Hayashi, *Japan*

11:30-12:30 **Parallel Session 6: Her2 +ve** — Hall 2

Chairpersons: **Hiromitsu Jinno,** *Japan*
Stacy Moulder, *USA*

11:30-12:00 **DEBATE:** That Neratinib should be offered as a standard of care in adjuvant therapy of Her2+ve breast cancer
11:30 **Yes: Arlene Chan,** *Australia*
11:40 **No: Stephen Chia,** *Canada*
11:50 Discussion

12:00-12:30 State of the art in metastatic Her2+ve breast cancer
Javier Cortes, *Spain*

12:30-12:45 *Break*

12:45-13:45 **Luncheon Industry Symposium: The tumor microenvironment in breast cancer progression: Clinical implications for OS benefit**
Supported by Eisai — Hall 1

Chairperson: **Takashi Ishikawa,** *Japan*

Speaker: **Junji Tsurutani,** *Japan*

12:45-13:45 **Luncheon Industry Symposium: Current situation and future perspective of HBOC practice in Japan**
Supported by AstraZeneca — Hall 2

Chairperson: **Teruo Yamauchi,** *Japan*

Speaker: **Hideko Yamauchi,** *Japan*

13:45-14:00 *Break*

14:00-15:30 **Plenary Session 7: Locoregional therapy** — Hall 1

Chairpersons: **Won Shik Han,** *Korea*
Shinobu Masuda, *Japan*
Ian Campbell, *New Zealand*

14:00-14:20 What is the optimal way to achieve clear margins in BCS?
Alastair Thompson, *USA*

14:20-14:55 **DEBATE:** That regional nodal radiotherapy is required in all early stage node positive breast cancer
14:20 **Yes: Sanjoy Chatterjee,** *India*
14:32 **No: Louis Chow,** *Hong Kong*
14:44 Discussion

14:55-15:30 **DEBATE:** That surgical axillary assessment should be routine for all patients with invasive breast cancer
14:55 **Yes: Koichiro Tsugawa,** *Japan*
15:07 **No: Abigail Caudle,** *USA*
15:19 Discussion

15:30-16:30 **Parallel Session 8: DCIS** Hall 1

Chairpersons: **Jin Zhang,** *China*
Abigail Caudle, *USA*

15:30-15:50 Biology of DCIS
Sunil R. Lakhani, *Australia*

15:50-16:30 **DEBATE:** That active surveillance for low risk DCIS should be considered
15:50 **Yes: Alastair Thompson,** *USA*
16:05 **No: Raghu Ram,** *India*
16:20 Discussion

15:30-16:30 **Parallel Session 9: Free Papers** Hall 2

Chairpersons: **Javier Cortes,** *Spain*
Hidetaka Kawabata, *Japan*

15:30-15:40 Comparison of prognostic performance of oncotype DX recurrence score versus EndoPredict (EPclin) in women with intermediate risk of recurrence by Nottingham Prognostic Index
Ivana Sestak, *UK*

15:40-15:50 The role of antibiotics in breast pocket irrigation and implant immersion during breast surgery: A systematic review and meta-analysis
Ashley Frois, *Australia*
Patrick Harbour, *Australia*

15:50-16:00 Targeting cancer metabolism enhances the effect of anti-cancer drug in breast cancer cells
Sung-Eun Hong, *Korea*

16:00-16:10 Rate and significance of extra-capsular extension in breast cancer positive sentinel lymph nodes
Oded Olsha, *Israel*

16:10-16:20 Hypo-fractionated radiotherapy (RT) schedule of 35Gy in 10 fractions in advanced incurable breast cancer: A prospective phase I/II study
Mandira Saha, *India*

16:20-16:30 Patient reported outcomes according to receipt of neoadjuvant or adjuvant systemic therapy for breast cancer: Results of a prospective longitudinal study
Nicholas Zdenkowski, *Australia*

16:30-17:00 *Coffee break and poster viewing*

17:00-18:30 **Industry Symposium:**
New treatment strategy for HR-positive and HER2 negative metastatic breast cancer patients
Supported by Pfizer Hall 1

Chairperson: **Masakazu Toi,** *Japan*

Speakers: **Kenji Tamura,** *Japan*
Shin-ichi Hayashi, *Japan*

Saturday, October 28, 2017

08:30-09:30 **Morning Special Lecture:**
Controversies on breast cancer screening: Adjunctive ultrasonography for women with dense breast (J-START)

Hall 1

Chairperson: **Takayoshi Uematsu,** *Japan*

Speaker: **Noriaki Ohuchi,** *Japan*

08:30-09:30 **Morning Industry Symposium:**
Treatment strategy for HER2-positive metastatic breast cancer
Supported by Chugai

Hall 2

Breakfast will be served prior to the session

Chairperson: **Tomoyuki Aruga,** *Japan*

Speaker: **Yutaka Yamamoto,** *Japan*

09:30-09:45 *Break*

09:45-10:45 **Parallel Session 10:**
Reconstruction/radiation

Hall 1

Chairpersons: **Yasuhiro Ogawa,** *Japan*
Alastair Thompson, *USA*

09:45-10:15 **DEBATE:** That chest wall radiotherapy prior to mastectomy and reconstruction is a good option
09:45 **Yes: Sanjoy Chatterjee,** *India*
09:55 **No: Ian Campbell,** *New Zealand*
10:05 Discussion

10:15-10:45 **DEBATE:** That fear and ignorance drive the rise in contralateral prophylactic mastectomy
10:15 **Yes: Hideko Yamauchi,** *Japan*
10:30 **No: Bruce Mann,** *Australia*

09:45-10:45 **Parallel Session 11:**
Free Papers

Hall 2

Chairpersons: **Richard de Boer,** *Australia*
Hiroko Bando, *Japan*

09:45-09:55 Is nipple-sparing mastectomy with immediate reconstruction safe for Asian women? An 11-year review
Yvonne Ng, *Singapore*

09:55-10:05 Clinical utility of adding 21-Gene Recurrence Score to standard treatment decisions in early-stage hormone receptor-positive breast cancer
Yasue Tsuchida, *Japan*

10:05-10:15 Surveillance of the reconstructed breast following breast surgery: To image or not to image?
Su Ang, *Australia*

10:15-10:25 Can contrast enhanced spectral mammography replace Magnetic Resonance Imaging in the detection and staging of breast lesions?
Mohamed Attia, *Egypt*

10:25-10:35 How realistic are published breast cancer overdiagnosis rates?
Carolyn Nickson, *Australia*

10:35-10:45 Improved breast cancer mortality in breast screened patients in New Zealand
Cameron Douglas, *Australia*

10:45-11:15 *Coffee break and poster viewing*

11:15-12:45 **Plenary Session 12: Breast cancer 2022** — Hall 1

Chairpersons: **Bruce Mann,** *Australia*
Seigo Nakamura, *Japan*

How will breast cancer management change by 2022 for the:

11:15-11:30 Pathologist
Sunil R. Lakhani, *Australia*

11:30-11:45 Radiologist
Elizabeth Morris, *USA*

11:45-12:00 Surgeon
Seigo Nakamura, *Japan*

12:00-12:15 Medical oncologist
Stacy Moulder, *USA*

12:15-12:30 Radiation oncologist
Sanjoy Chatterjee, *India*

12:30-12:45 Discussion

12:45-13:00 **Congress wrap-up and award presentation** — Hall 1

Chairpersons: **Bruce Mann,** *Australia*
Seigo Nakamura, *Japan*

13:00-13:15 *Break*

13:15-14:15 **Luncheon Industry Symposium: Future perspective of oral-FU drug in the management of breast cancer**
Supported by Taiho — Hall 1

Chairperson: **Reiki Nishimura,** *Japan*

Speaker: **Shigehira Saji,** *Japan*

13:15-14:15 **Luncheon Industry Symposium: What needs to perform chemotherapy for breast cancer in the current era?**
Supported by Kyowa Kirin — Hall 2

Chairperson: **Naoto Ueno,** *USA*

Speaker: **Yoshinori Ito,** *Japan*

14:30-18:25 **Young doctors' summit in Asia** — Hall 1

Chairpersons: **Sadako Akashi-Tanaka,** *Japan*
Takahiro Nakayama, *Japan*

14:30-15:10 **DEBATE 1:** Management of ductal carcinoma in situ: Is surgical resection needed or not?

Chairpersons:
Takashi Kuwayama, *Japan*
Kazuhiko Sato, *Japan*

Participants:
Yoko Takahashi, *Japan*
Miki Hasegawa, *Japan*
Sho Shiino, *Japan*
Keiichi Kinowaki, *Japan*
Joo Heung Kim, *Korea*
Mohamed Attia, *Egypt*
Yomna Galaa Sabry Abdelaziz, *Egypt*

15:15-15:55 **DEBATE 2:** Imaging modality for dense breast. Which is more effective: Ultrasonography or tomosynthesis?

Chairpersons:
Naoko Matsuda, *Japan*
Kazunori Kubota, *Japan*

Participants:
Miwa Yoshida, *Japan*
Yasuyuki Kojima, *Japan*
Yuki Matsunaga, *Japan*
Sang-Eun Nam, *Korea*
Lei Liu, *China*
Dapeng Lu, *China*

15:55-16:15 *Coffee break*

16:15-16:55 **DEBATE 3:** Position of gene testing; BRCA mutation test should be used as companion

Chairpersons:
Yoshimi Ide, *Japan*
Reiko Yoshida, *Japan*

Participants:
Yuko Tanabe, *Japan*
Takamichi Yokoe, *Japan*
Cheng-Ping Yu, *Taiwan*
Euitae Kim, *Korea*
Yan Liu, *China*
Vivian Man, *Hong Kong*
Jai Min Ryu, *Korea*

17:00-17:40 **DEBATE 4:** Predictive marker for hormone-receptor positive HER2 negative patients; Which do you use for your patients in the clinical management in selecting adjuvant therapy, multigene tests or IHC4?

Chairpersons:
Jeong Eon Lee, *Korea*
Nobuko Tamura, *Japan*

Participants:
Chiaki Nakauchi, *Japan*
Sakiko Tazawa, *Japan*
Masahiro Takada, *Japan*
Yuan-Ching Chang, *Taiwan*
Young Wook Ju, *Korea*
Weiling Feng, *China*
Yvonne Ng, *Singapore*

17:45-18:25 **DEBATE 5:** Treatment of hormone-refractory metastatic breast cancer; Which is more effective: CDK4/6 inhibitor or mTOR inhibitor?

Chairpersons:
Makiko Ono-Fuchiwaki, *Japan*
Akihiko Shimomura, *Japan*

Participants:
Jun Hashimoto, *Japan*
Nami Yamashita, *Japan*
Madoka Iwase, *Japan*
Hee Jun Choi, *Korea*
Xiuyan Yu, *China*

CoBrCa at Your Fingertips

Download the app and gain access to everything you need to know to plan a successful event.

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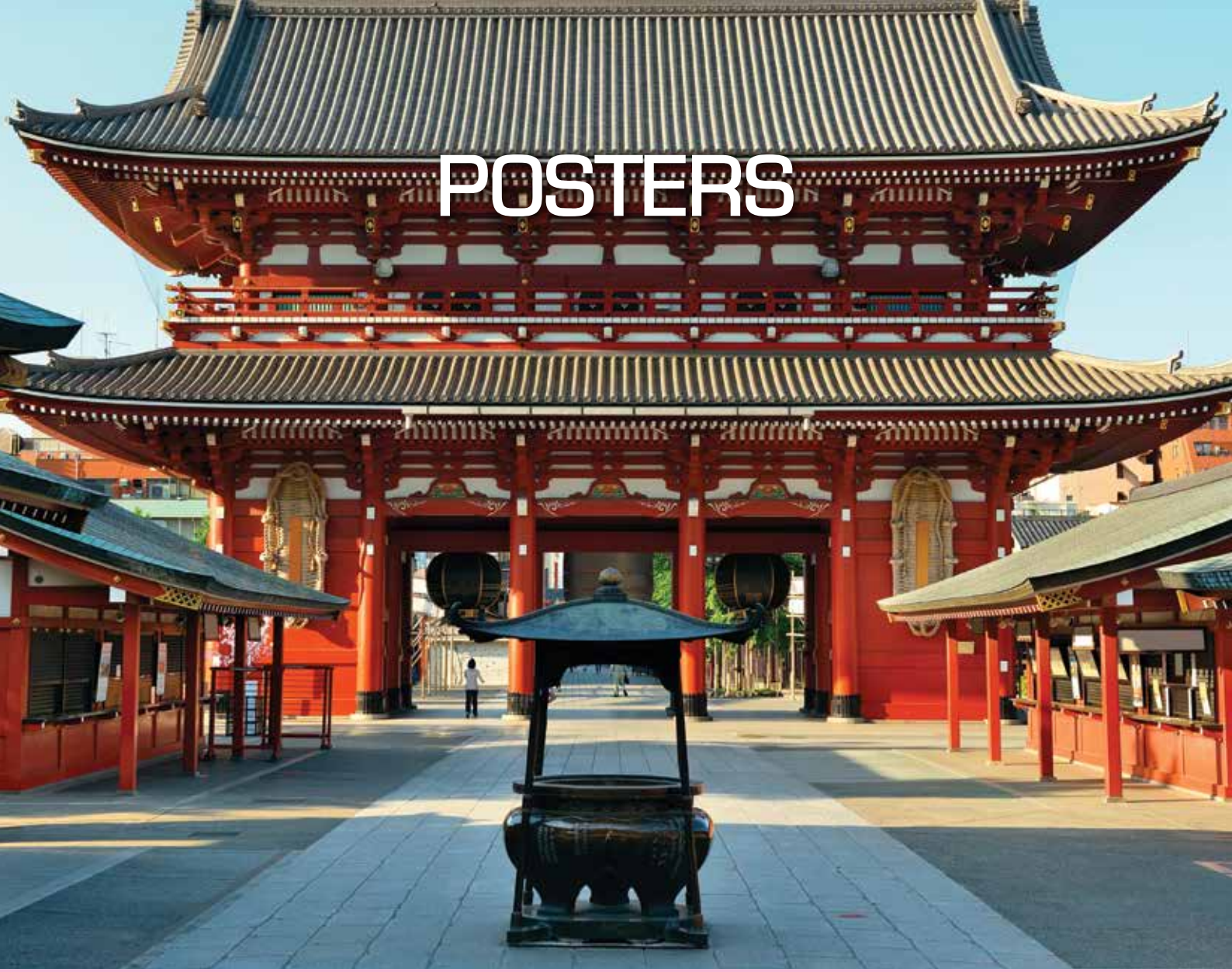

POSTERS

3rd World Congress

on Controversies in

Breast Cancer

Board No.

Breast cancer 2025

P01 Studying the effectiveness of psychotherapy based on acceptance and commitment on anxiety and depression and quality of parent-child relationship in mothers with breast cancer and their children
Leila Dehghanian, Iran

P02 Primary breast lymphoma: A single centre experience
Jaime Seah, Singapore

P03 Incidence of cancer related fatigue (CRF) in Indian women with breast cancer; an overview of psychosocial issues in breast cancer patients receiving chemotherapy
Vineet Talwar, India

Breast cancer genetics

P04 The efficacy of neoadjuvant chemotherapy for breast cancer in BRCA1 and BRCA2 mutation carriers
Arisa Ata, Japan

P05 Quality of life according to risk-reducing salpingo-oophorectomy in Korean BRCA carriers
Eunyoung Kang, Korea

P06 Clinical outcomes according to BRCA gene status in breast cancer patients. Can the BRCA gene mutation be used as a prognostic factor for breast cancer?
Jong Eun Lee, Korea

P07 BRCA1/BRCA2 mutations in Japanese women with ductal carcinoma in situ
Yan Liu, China

P08 Culturally cancer risk counseling and education for underserved Latinas
Lina Mayorga, USA

P09 Risk reduction mastectomy in BRCA mutation carriers
Junko Takei, Japan

Breast cancer screening

P10 Borderline lesions diagnosed on breast core biopsy: Frequency of atypia and carcinoma on surgical excision – local clinical experience
Henry Bevis, Australia

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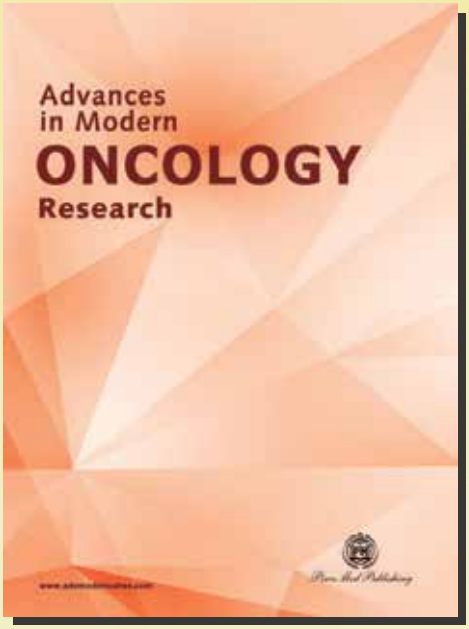

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INVITED SPEAKERS' ABSTRACTS

THAT CHEST WALL RADIOTHERAPY PRIOR TO MASTECTOMY AND RECONSTRUCTION IS A GOOD OPTION: NO

Ian Campbell, New Zealand

At first glance, what an appealing idea! Get the radiotherapy out of the way, and then do a reconstruction that will not subsequently be irradiated! But is this really good management? Answer: We do not know! Good quality evidence for this approach does not exist! Firstly, it presupposes that we know post mastectomy radiation therapy (PMRT) is definitely indicated without having pathology results. Current guidelines recommend PMRT for bad biology N0 tumours in size or with nodal involvement. The strongest evidence is for women with tumours over 5 cms in size, and 4 or more nodes involved. But how do you know what the pathology of the tumour was if you irradiate first? Many of these women are having neoadjuvant chemotherapy, which by downstaging already complicates decision making on need for PMRT. Recent trends are for our radiation oncology colleagues want to give more and more PMRT, and not only to chest wall, but to regional nodes. This is based on historical studies, like the Danish and British Columbian Trials, where the baseline population had unusually high rates of locoregional recurrence (LRR), and the EBCTCG meta analysis of these and other old studies (20% LRR at 10 years for women with 1-3 nodes positive and no PMRT). Radiotherapy, whether given before or after surgery, results in significant cost and morbidity. Women should not be subjected to this without clear evidence of need and benefit, and we need to reverse the trend to give more and more RT based on more recent evidence. More recent studies where women have received more consistent hormone therapy and chemotherapy that was generally doxorubicin or taxane based have typically shown LRR in the range of 5% at 5-10 years without PMRT. Without good pathology, we do not know where our patients sit in this spectrum of outcomes. The next problem with preoperative treatment, is that we have very little evidence on how to do it, and worse still, evidence that suggests higher operative complication rates with this approach. How long after RT should we wait before doing the mastectomy? Too early, and there is still an acute inflammatory response underway in the breast; too late, and the later radiation effects on blood supply, and poor healing are starting to kick in. Finally, when can we do sentinel node based management on these women? How will RT interfere with our ability to identify sentinel nodes with appropriately low false negative rates? Answer: No good quality data. In summary, we lack adequate evidence to adopt a RT before surgery, and what we do have suggests we will be encouraging more RT to be given, where it might have been avoided, and increasing complication rates for patients.

THAT ALL PATIENTS WITH POSITIVE NODES PRE-NEOADJUVANT THERAPY SHOULD HAVE AXILLARY DISSECTION AS PART OF CANCER SURGERY: YES

Ian Campbell, New Zealand

When it comes to regional nodal treatment, our radiation oncology colleagues are doing more and more based on RCT evidence of better outcomes. So why is it we surgeons are so keen to do less and less, based on much lesser quality evidence, or surrogate outcomes alone? The evidence base for sentinel node based management of women with positive nodes pre-neoadjuvant therapy (NAC) comes from retrospective series, and more recently, the SENTINA and ACOSOG Z1071, and SN FNAC studies. In women who are clinically node negative prior to NAC, meta analyses have shown false negative rates of 7-12%, and in the MD Anderson series, regional recurrence of 1.2% at only 4 years median follow up. For women known to be clinically or pathologically node positive prior to NAC, the SENTINA, ACOSOG Z1071, and SN FNAC studies, have shown some fairly consistent findings: False negative rates of 13-14%. This can be reduced to between 5 and 9% if at least 3 sentinel nodes are found – but many women do not have 3 sentinel nodes. The FN rate is also approximately halved using both radiotracer and blue dye to identify nodes. Marking of the involved node with a clip prior to NAC may also help. Unfortunately, there is always the temptation to proceed in spite of not meeting all these criteria and as with many local therapies we know little about influence of tumour biology on these surrogate outcomes. The main problem, however, is that there is no good quality data available on the most important outcomes - nodal recurrence and survival. On the other hand, we know that axillary dissection will accurately stage the axilla, and is the most effective surgical option to control disease in the axilla. Axillary recurrence after well performed dissection results in long term AR rates of less than 1%. We also know that in a modern setting, axillary dissection can be carried out with relatively low rates of morbidity, as shown in the recent results from the SNAC1 randomised trial, where careful 5 year follow up showed moderate lymphoedema rates of only 5%.

LIBERAL USE OF GENETIC TESTING SHOULD BE ENCOURAGED: YES

Arlene Chan, Australia

The primary purpose of genetic testing in women for the presence of a breast cancer-susceptible gene is ultimately to enable preventative interventions to be undertaken and avert an invasive breast cancer diagnosis. There has been rapid development in the field of gene panel testing for cancer-susceptible genes. As a result, the cost for this technology has reduced significantly over the past two decades and evidence exists for the efficacy of prophylactic breast surgery, oophorectomy in premenopausal women and chemo-prevention drug therapies. In addition, beyond BRCA1 and BCRA2, less common genes with high-penetrance such as PTEN, CDH1, TP53 and STK11 and moderate penetrance genes such as PALB2, CHEK2, ATM and RAD51Cand RAD51D – have all been identified as contributors to the 10% incidence of hereditary breast cancer in the general population. There is data supporting the efficacy of broader application of breast cancer –susceptible testing in certain ethnic groups with high frequency of founder mutations, as well as economic data supporting population-based testing of unaffected women for breast cancer-susceptible genes. Lastly, evidence exists to support the lack of psychological harm in performing genetic testing in younger women without a family history but who nevertheless would have the opportunity to undergo risk-reducing interventions if confirmed as a carrier of a known susceptible genetic mutation. In totality, these factors provide support for the role of wider population-based genetic testing.

NERATINIB SHOULD BE OFFERED AS A STANDARD OF CARE IN ADJUVANT THERAPY OF HER2+ BREAST CANCER: YES
Arlene Chan, Australia

Significantly improved patient outcomes with the use of adjuvant chemotherapy and trastuzumab was established in May 2005 and this is the current standard of care in HER2-positive early breast cancer. However, longer term follow-up of the outcomes of patients recruited to the pivotal trials have shown that 15% to 24% of patients may still develop an invasive recurrence. The ExteNET trial, commenced in 2009 was a large international Phase III study designed to evaluate the impact of 12-months of neratinib, (an oral tyrosine kinase inhibitor) versus placebo in women who had completed prior adjuvant chemotherapy and trastuzumab and who remained disease-free up to 12 to 24 months from completion of trastuzumab. The primary endpoint was invasive disease-free survival at 2 years from study randomisation. The primary analysis was reported in Lancet Oncology March 2016, in which a 33% reduction in invasive breast cancer event (p = 0.0091) was seen in patients randomised to 12-months of neratinib. Results favouring a significant benefit for patients on neratinib were maintained at the pre-planned 5yr analysis presented at ESMO 2017. The results of ExteNET demonstrates for the first time that neratinib can further statistically reduce the rate of clinically relevant recurrent breast cancer event after standard chemotherapy and trastuzumab has been received. The predominant and significant side effect from neratinib was a 40% incidence of grade 3 diarrhea, which occurred for a median duration of 5 days. Notably, patients in ExteNET did not receive anti-diarrheal prophylaxis. Early results from the PUMA6201 study indicate that the use of budesonide or colestipol with loperamide initiated at the time of neratinib commencement, will abrogate this adverse effect.

THAT NAST CHOICE SHOULD BE BASED ON MORE TN STAGE
Louis W.C. Chow, Hong Kong

Neoadjuvant systemic therapy is important in the treatment of breast cancer. While pathologic complete response (pCR) has been a surrogate marker of success of neoadjuvant chemotherapy (NACT), the choice or decision to start preoperative systemic treatment has not been fully evaluated. The aims of NAST are well known: to provide an in-vivo chemo-sensitivity test; to improve on survival; to reduce the size of cancer to make breast conservation surgery possible and thus improves on the quality of life; to treat the axillary nodal metastasis to reduce the extent of axillary surgery. The decision to start NAST is based on TN stage to achieve its aims, irrespective of biological subtypes. It has been suggested that HER-2 enriched and triple negative breast cancers may have higher pCR after NACT than luminal subtype and NACT should be reserved for patients in these circumstances. Yet it is common to use NACT in luminal cancers especially when the patients are young and the disease in an advanced stage with big tumors and lymph node metastases. It is not unusual to achieve pCR in 10-20% of these cancers. Also, 60-80% of patients will have significant reduction of tumor volumes. Thus, it is customary to start NAST basing on the TN stage rather than the biological subtypes, which provides more of a research tool than real clinical practice. NAST can serve as a chemo-sensitivity test to assess the efficacy of therapy in-vivo. The outcome of therapy is important, especially for higher TN stage patients, irrespective of the biological subtypes. Those patients who do not achieve a good response can be recommended to receive additional systemic therapy (before or after surgery) to improve on the outcome, a treatment option that adjuvant therapy cannot offer. The down staging of both primary cancer and nodal metastasis by NAST, again irrespective of biological subtypes, makes surgery easier and of lesser magnitude. Conservation surgery at the primary and nodal sites can be possibly performed, even for patients who do not achieve pCR. The improved outcome in the quality of life provides a long term benefit to patients. Thus, the decision to start NAST in common clinical practice is based on TN stage rather than the biological subtypes.

THAT REGIONAL NODAL RADIOTHERAPY IS REQUIRED IN ALL EARLY STAGE NODE POSITIVE BREAST CANCER: NO
Louis W.C. Chow, Hong Kong

The management of the axilla has always been a challenge. Axillary surgery shifts from axillary dissection to sentinel lymph node dissection to avoid complications of the procedure, namely lymphoedema and limb paresthesia. Because of the results of ACOSOG Z11 study, patients with nodal metastasis and fulfilling all the criteria were spared completion axillary dissection, on the notion that systemic therapy can provide adequate cancer control. Moreover, recurrence in the axilla has not been shown to jeopardise overall survival. Regional nodal radiotherapy has been researched in the past and studies for node positive disease were inconclusive. Local recurrence occurs only in 20-30% of patients with node positive disease without post-operative radiation. Thus, if radiotherapy is to be given to all patients, a large proportion of patients will be over-treated. In addition, nodal radiotherapy can only improve the overall survival by 3-5%. Nodal radiotherapy is also associated with adverse outcomes. Besides associated with lymphoedema, the procedure may also lead to lung and heart injuries that could be permanent. Gene signature test has been developed to address this issue. Recurindex which selected 28 out of 7000 genes can segregate low rick from high risk patients. While high risk patients may have loco-regional recurrences of over 40%, such recurrences occur only in less than 8% of low risk patients. This is irrespective of the nodal status. The disease-free and overall survival do not depend on the loco-regional treatment. It is the systemic therapy that improves the outcome and nodal status is merely one of the indicators of therapy. Thus, regional nodal radiotherapy is not required in all early stage node positive breast cancer.

THAT OFS + AI SHOULD BE STANDARD OF CARE IN YOUNG PATIENTS WITH HIGH-RISK HR+VE BREAST CANCER – YES
Wolfgang Janni
Dept. Obst & Gyn, Universitätsklinikum-Ulm, Germany

In the adjuvant situation, endocrine therapy is indicated in all patients with hormone receptor–positive breast cancer, and should be considered as well in those cases with low receptor levels (≥ 1–9%, LoE 1 / GR A / AGO ++). If chemotherapy is being administered, endocrine therapy starts after cytotoxic therapy. Endocrine adjuvant therapy is defined as “initial therapy” (years 0–5) and “extended adjuvant therapy” (EAT, years 6–15; AGO ++). A treatment duration of 5 years is standard of care. EAT should be indicated in accordance with individual risk–benefit considerations. In premenopausal and

perimenopausal patients, treatment with tamoxifen might be offered for 5–10 years (LoE 1a / GR A / AGO ++). In accordance with data from the ATLAS and ATTOM studies, tamoxifen therapy can be extended for up to 10 years. If the patient is postmenopausal after the initial 5 years of endocrine therapy, according to the data from the MA 17 study, endocrine therapy can be continued after 5 years of tamoxifen with 2.5–5 years of letrozole (LoE 1b / GR B / AGO +). If ovarian function has recovered within the first 8 months after chemotherapy treatment with a gonadotropin-releasing hormone (GnRH) analogue plus tamoxifen or in combination with the aromatase inhibitor (AI) exemestane for 5 years should be considered on an individual risk basis (LoE 1b / GR B / AGO +/). If the patient is younger than 35 years, according to the SOFT study, a combination of tamoxifen with a GnRH analogue should be recommended, (LoE 1b / GR B / AGO +). Increased side effects may impair compliance. This has to be thoroughly balanced. However, the benefits outweigh the side effects in young women with substantial risk for recurrence.

PARP INHIBITORS: WHERE DO THEY FIT IN BREAST CANCER MANAGEMENT?

Wolfgang Janni
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Dysfunction of DNA double-strand break (DSB) repair, in particular inactivation of the BRCA1/BRCA2-dependent (BRCA) homologous recombination pathway, has been connected with hereditary and a significant fraction of sporadic forms of breast cancer (triple-negative breast cancer, TNBC, 10-15% of cases). For TNBC prognosis is poor and targeted therapies are still unavailable, however, studies involving novel drug combinations including true poly (ADP-ribose) polymerase (PARP) inhibitors specifically targeting DSB repair-defective tumor cells have recently been initiated. Notably, reduced overall expression of the BRCA pathway antagonist 53BP1 was found in TNBC subsets, was associated with poor prognosis, partially rescued a BRCA pathway defect on the expense of DSB repair accuracy, and modulated therapeutic responsiveness. Present treatment regimens of TNBC patients include conventional chemotherapeutics like anthracyclines and taxanes, but hopefully in the near future more effective and/or better tolerable drugs like PARP inhibitors specifically targeting DSB repair-defective tumor cells will be available ("Brightness" TNBC-trial for neoadjuvant chemotherapy involving Carboplatin and PARP inhibitor Veliparib initiating in Ulm). After failure of a clinical phase III trial with the presumed PARP-inhibitor Iniparib in TNBCs, Iniparib was later on demonstrated not to or at best weakly inhibit PARP as compared to true PARP inhibitors like Olaparib or Veliparib (5,6). Indeed, the PARP inhibitor LYNPARZA™ (Olaparib) received first approval in the EU for monotherapy of patients with platinum-sensitive, relapsed, BRCA-mutated (germline and/or somatic), high-grade serous epithelial ovarian, fallopian tube, or primary peritoneal cancer, who are in complete or partial response to platinum-based chemotherapy. Anti-PARP agents have also been explored for over a decade in breast cancer - however, after initial success, several PARP inhibitors flamed out. At the ASCO 2017 meeting in Chicago it was reported that olaparib (Lynparza) improved progression-free survival (PFS) versus standard chemotherapy in patients with BRCA-positive breast cancer in the phase III OLYMPIAD study. The phase III multicenter OLYMPIAD trial included 302 patients with HER2-negative metastatic breast cancer who harbored germline BRCA1 or BRCA2 mutations. The study was conducted in 19 countries across Europe, Asia, North America, and South America. Patients were randomized to olaparib (300 mg twice daily) or physician's choice of standard chemotherapy (capecitabine, vinorelbine, or eribulin). The primary endpoint of the trial was PFS per a blinded independent review. All patients had up to two prior rounds of chemotherapy for metastatic breast cancer, and those with hormone receptor–positive cancer had received hormonal therapy. The researchers randomly assigned 302 patients to receive olaparib tablets or standard chemotherapy (either capecitabine, vinorelbine, or eribulin) until the cancer worsened or the patient developed severe side effects. Tumors shrank in about 60% of patients who received olaparib, compared with 29% of those who received chemotherapy. At a median follow-up of about 14 months, patients who received olaparib had a 42% lower chance of cancer progression than those who received chemotherapy. The median time to progression was 7 months with olaparib and 4.2 months with chemotherapy.
Beyond olaparib, veliparib has also shown promise in BRCA-positive patients. Findings from the phase II BROCADE trial presented at the 2016 San Antonio Breast Cancer Symposium showed that adding veliparib to carboplatin/paclitaxel chemotherapy induced a response rate of 77.8% in patients with advanced BRCA-positive breast cancer. The BROCADE study included 290 women with histologically or cytologically confirmed locally recurrent or metastatic breast cancer who harbored a deleterious BRCA1 or BRCA2 germline mutation. The 3-arm trial randomized patients in a 1:1:1 ratio to veliparib (120 mg twice daily on days 1-7) plus carboplatin (AUC 6)/paclitaxel (175 mg/m2) every 3 weeks (n = 97); the same chemotherapy regimen plus placebo (n = 99); or veliparib (40 mg twice daily on days 1-7) plus temozolomide (150-200 mg/m2 each day on days 1-5) every 4 weeks (n = 94). The findings at SABCS were from the first 2 arms of the trial. Tumor response was assessed in patients with measurable disease, which included 72 patients in the veliparib arm and 80 patients in the placebo arm.
The complete and partial response rates in the veliparib versus placebo arms were 5.6% (n = 4) versus 3.8% (n = 3) and 72.2% (n = 52) versus 57.5% (n = 46), respectively. The clinical benefit rate (progression-free rate at 18 weeks) was 90.7% versus 87.0%, respectively. The median duration of response was 11.7 months (95% CI, 8.5-14.1) in the veliparib arm and 11.1 months (95% CI, 9.5-15.7) in the placebo arm. The median PFS was 14.1 months (95% CI, 11.5-16.2) for the veliparib arm and 12.3 months (95% CI, 9.3-14.5) for the placebo group (HR, 0.789; 95% CI, 0.536-1.162; P = .231). The median overall survival (OS) was 28.3 months (95% CI, 26.9-NR) versus 25.9 months (95% CI, 20.4-31.8) with veliparib versus placebo, respectively (HR, 0.750; .503-1.117; P = 0.157). The OS data are not fully mature yet. However, the study did miss its primary endpoint, as the PFS improvement was numerically but not statistically significant; however, she still considers the trial to be a success. In early breast cancer, at ASCO 2017 the primary response data from a phase 3 randomized, placebo-controlled study (NCT02032277) evaluating the addition of veliparib and carboplatin (Cb) or Cb to neoadjuvant paclitaxel (P) followed by doxorubicin + cyclophosphamide (AC) were presented. Pts with histologically confirmed, invasive TNBC (T2–T4 N0–2 or T1 N1–2) amenable to surgical resection were randomized 2:1:1 to (Arm A) P 80 mg/m2 weekly + Cb AUC 6 mg/mL/min q3 weeks + V 50 mg PO BID; (Arm B) P + Cb + PO placebo; or (Arm C) P + IV placebo + PO placebo, for 12 weeks followed by AC (60 mg/m2 or 600 mg/m2 q2 or 3 weeks) × 4. Primary endpoint was pathologic complete response (pCR).

Unfortunately, the addition of veliparib to neoadjuvant Cb + P followed by AC did not increase pCR rate in breast and nodes in stage II–III. This trial underlines that both the identification of patients with the highest benefit by PARP-inhibition, as well as the identification of predictive markers and optimal treatment combination still represent fundamental challenges, as will discussed at the meeting.

MANAGEMENT OF HEREDITARY BREAST CANCER: ADVANCES AND CONTROVERSIES

Ava Kwong

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Women with a germline BRCA1 or BRCA2 mutation or other hereditary predisposition for breast and ovarian cancer have substantial increased risk of breast, ovarian and related cancer. Mutation carriers and families at risk benefit from individualized medical evaluation and risk management. Until recently, risk management has really been based on more intensive surveillance and screening programmes, prophylactic surgery and also chemoprevention. Standard Guidelines for testing and management options are available but practices may vary in different countries based on availability and resources. As we have more understanding of the mechanisms on carcinogensis of breast cancer, the identification of a mutation in susceptibility genes may also guide treatment decision–making by providing potential targets for biologic agents to help select treatment strategies. Hence genetic testing of hereditary breast and ovarian cancer syndromes(HBOC) has increasingly become the standard of care for high-risk patients and their family members. More advance diagnostic technologies such as Next- generation sequencing (NGS) in recent years have facilitated an unprecedented capability to gain a better understanding of the genetic complexity of many cancers including HBOC. Mutigene panels are increasingly being used but interpretation of the results in its application on clinical management maybe challenging. Hence, despite the advantages, new technologies may also create controversies and interpretation difficulties which may adversely affect clinical decisions. A review of supporting medical evidence of existing practice in management of these high risk individuals and the controversies which still exist will be discussed.

DCIS – MORPHOLOGY AND BIOLOGY

Sunil R. Lakhani

University of Queensland and Pathology Queensland, Australia

DCIS was infrequent prior to introduction of mammographic screening but now accounts for 20-25% of newly diagnosed breast cancers. It may present as a palpable mass, nipple discharge or Paget disease of the nipple; however, most cases (80%+) are detected in the screening program without a clinical presentation. Calcification is the most common mammographic finding. There is no universally agreed classification system but there has been a move away from traditional architecture based to a nuclear grade based system. In some systems, the nuclear grade is supplemented with necrosis +/- cell polarisation. This current grading system divides the DCIS into three grades – Low, Intermediate and High. Some degree of heterogeneity within the same duct or within the same breast is not uncommon. The division into the three grades is not intended to imply a progression from Low to High, in fact, the molecular data currently suggest that most (but not all) carcinomas evolve through either a low or high grade pathway from the outset rather than due to de-differentiation. This is important in thinking about refining the management of DCIS. Apart from the conventional forms of DCIS, a number of rare variants are also described including apocrine, neuroendocrine, signet ring, spindle and squamous cell type. The grading of these lesions remains controversial. The data derived from clinical, epidemiological and molecular studies show that DCIS is a precursor (albeit non-obligate) of invasive carcinoma. The time to progression is shorter for high grade DCIS (approx. 5 years) compared to low grade DCIS (>15 years). Following local excision, approx. 50% of recurrences are DCIS and 50% invasive. The rate of recurrence is markedly reduced by the use of adjuvant radiotherapy, but unfortunately, it is not clear how to identify patients who may be spared further adjuvant treatment. Some use adjuvant endocrine therapy in ER+ DCIS, as it also reduces recurrence by 50% in ipsilateral and contralateral breasts but has not gained widespread acceptance as no survival benefit has been demonstrated. The role of microenvironment in tumour development and progression is increasingly being recognised, however, there are little data at present for the role in DCIS progression. It will be important to incorporate this understanding in the management of DCIS.

CONTRALATERAL PROPHYLACTIC MASTECTOMY IS DRIVEN BY FEAR AND IGNORANCE: NO

Bruce Mann, Australia

There has been a progressive rise in the rate of contralateral prophylactic mastectomy, especially in the USA, but elsewhere as well. This has occurred despite strong evidence that there is no survival benefit from this procedure in the majority of cases, and a definite increase in complications of and side effects from more extensive surgery. This suggests that patients are suffering unnecessary harms, raising the prospect that fear and ignorance are driving the rise in prophylactic mastectomy. While this analysis is superficially appealing, the truth is different. There are many reasons why individuals may choose to undergo prophylactic mastectomy. Undoubtedly fear of a future cancer diagnosis plays a role in many cases, but this fear is usually based on personal experience and/or risk of future breast cancer, rather than on ignorance. Many patients seek symmetry after breast surgery. For those patients requiring a mastectomy for a cancer, symmetry is often best achieved with bilateral breast surgery – often contralateral prophylactic mastectomy with or without breast reconstruction. Such a choice is a result of a clear understanding of individual preference, rather than to either fear or ignorance. A recent study assessed opinion towards CPM in breast units across the UK from surgeons/ specialist breast care nurses when compared to views expressed by a cohort of breast cancer patients. Interestingly, 50% of the patient group didn't feel that all options regarding their primary operation were discussed while 40% of the surgical cohort would not remove a healthy breast under any circumstance. This suggests that fully informed consent and shared decision-making is not universal. In summary, rather than "fear and ignorance" it is reasonable and informed "patient choice" that is the main driver of the rise in contralateral prophylactic mastectomy.

CURRENT STATUS AND THE FUTURE PERSPECTIVES OF BREAST SURGICAL ONCOLOGY

Seigo Nakamura, Japan

Surgery for breast cancer has changed markedly during the past 30 years. Radical mastectomy, referred to as Halstead's operation, has been completely disappeared at present, while breast-conserving surgery (BCS) has become the standard therapy for early breast cancer. The role for axillary management including sentinel lymph node biopsy has been shifting from local control to determination of the strategy for systemic therapy. In the era of BCS, preoperative evaluation of tumor extension is extremely important. Three-dimensional magnetic resonance imaging(3D-MRI) is a promising diagnostic method to confirm tumor extension compared with other conventional methods (mammography and ultrasound). Therefore, 3D MRI can be used to assist image-guided surgery or abrasion for nonpalpable tumors, which are detected as clustered microcalcifications, or in clinical complete response cases after neoadjuvant chemotherapy including targeted therapy. Recently, primary therapies have been adapting not only for locally advanced breast cancers but also operable cases which might be necessary to get adjuvant therapies. There are two main reasons to propel the tendency. Firstly, the indication of breast conserving surgery could be widen if the tumor has shrunk centrally. Secondary, the survival benefit can be predicted if the primary chemotherapy has achieved pathological CR. The regimens for primary therapies have especially improved combining with novel targeting therapies such as anti-HER2 therapy. Therefore, more than one third of the cases has become nonpalpable (clinical CR).On the contrary, determination of surgical margin has been more difficult. If the cancer slightly remains as a nonpalpable lesion, confirmation of its location is essential to avoid missing it. Therefore, navigation surgery according to the image of MRI or CT has been taking the important role to assess the extension of cancer more accurately compared with the conventional modalities such as mammography and . And image guided biopsy or BCS should be developed as soon as possible.

THAT ACTIVE SURVEILLANCE FOR LOW RISK DCIS SHOULD BE CONSIDERED: NO

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Ductal Carcinoma In Situ (DCIS) accounts for approximately 20% of breast cancers detected by breast screening. The introduction of population based breast cancer screening world over coupled with recent implementation of digital mammography has resulted in significant increase in the incidence of DCIS. Currently, the standard of care for DCIS is wide local excision/mastectomy with or without adjuvant radiation or endocrine therapy. The aim of treating DCIS is to ensure excellent long-term survival by preventing its progression to invasive breast cancer. There is no robust data on the natural history of untreated DCIS. However, a few small studies indicate that approximately 40 – 50% of untreated Low grade DCIS may not progress to invasive carcinoma. Hence there is a view that this cohort of patients could be closely monitored (active surveillance) rather than subjecting them to active treatment. One of the main challenges for adopting this policy is the potential to leave behind untreated occult invasive carcinoma. The two imaging modalities, i.e., Mammogram and MRI cannot distinguish between ADH and Low grade DCIS or High Grade DCIS or even a small invasive cancer. Hence, Randomized Controlled Trials would help answer the question whether 'active surveillance' rather than 'active treatment' is the right approach to low risk DCIS. There are currently two major European trials comparing the safety of observation to standard surgical excision, with or without adjuvant therapy, for women with low-risk DCIS. The LORIS trial is an ongoing multi centre Pan UK prospective RCT (commenced in 2014) and is enrolling women over the age of 46 years with proven diagnosis of low-risk DCIS on core biopsy. Patients are randomized to surgery versus observation alone, consisting of an annual mammogram. The primary endpoint is ipsilateral invasive disease-free survival at five years. The LORD trial is a prospective randomized International multicenter RCT (commenced in 2017) that assesses the safety of active surveillance in women with low risk DCIS. The trial is being conducted under the auspices of Dutch Breast Cancer Research Group (BOOG) and the European Organisation for Research and Treatment of Cancer (EORTC). The results from both these trials would be available by 2030. Until such time, active surveillance for women presenting with low risk DCIS **should not** be considered as standard of care.

EFFICACY OF ADJUNCTIVE ULTRASONOGRAPHY IN MAMMOGRAPHY BREAST CANCER SCREENING

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Breast cancer incidence continues to increase worldwide. Although MG is the only method that has evidence supporting mortality reduction from breast cancer, it is known that MG screening accuracy gets lower in association with higher breast densities and younger ages. On the other hand, breast ultrasonography is attractive for breast cancer screening because it is not impaired by breast density, and it avoids the use of ionizing radiation and the need for breast compression. Some small clinical trial and observation studies have revealed the power of supplemental US with MG in dense breasts, however, the evidence was remain low level. The Japan Strategic Anticancer Randomized Trial (J-START) is the first large-scale RCT to verify the quality and effectiveness of US for breast cancer screening in women aged 40–49 years, with 76,196 participants had been enrolled by the end of fiscal year of 2012 (March 31, 2013). Of 76,196 women enrolled, 36,859 were assigned to the intervention group and 36,139 to the control group. Sensitivity was significantly higher in the intervention group than in the control group (91.1%, 95% CI 87.2–95.0 vs 77.0%, 70.3–83.7; p=0.0004), whereas specificity was significantly lower (87.7%, 87.3–88.0 vs 91.4%, 91.1–91.7; p<0.0001). Mammography plus ultrasonography identified more cancers than did mammography alone (184 [0.50%] vs 117 [0.32%], p=0.0003), and more were stage 0 and I (144 [71.3%] vs 79 [52.0%], p=0.0194). 18 (0.05%) interval cancers were detected in the intervention group compared with 35 (0.10%) in the control group (p=0.034). Ultrasonography could offer a low-cost way to increase sensitivity and detection rates of early cancers in women with dense breasts, however, there are many

problems to be overcome to recreate the excellent result of clinical trial in daily clinical medicine. Education system for screener and physician must be established, and quality assessment manual for the equipment also must be established in order to maintain the total quality of US screening. Minimising screening associated harms, such as high recall rate and low specificity, is very important. We must reinvestigate the validity of categorisation in screening, verify the over diagnosis, and keep examining how the mortality changed.

ACTIVE SURVEILLANCE FOR LOW RISK DCIS SHOULD BE CONSIDERED

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Ductal carcinoma in situ (DCIS) is a feature of breast screening for invasive breast cancer with some 60,000 patients diagnosed in the U.S. each year. However, DCIS, like invasive breast cancer, is not a single disease and indeed, as a non-obligate precursor of invasive breast cancer, the term DCIS covers a range of ductal epithelial cell behaviours ranging from the indolent to aggressive phenotypes. Historically, several solid organs are recognised to develop pre-invasive stages that may or may not progress to invasive disease. Clinical practice for prostate, thyroid and other tumor types has moved away from removing every neoplasia with malignant potential to active surveillance of the neoplastic lesion(s). This has resulted in organ preservation (and the functional benefits) without impacting survival. For DCIS, large retrospective and prospective series have failed to demonstrate any breast cancer specific survival benefit for conventional guideline concordant care (surgical removal potentially with radiotherapy and or endocrine therapy). Given that DCIS represents a spectrum of disease behaviours, the identification and selection of low risk DCIS suitable for active surveillance has been proposed. Indeed 1-2% of women in the U.S. diagnosed with DCIS opt for surveillance not surgery. However, such an active surveillance approach, as for prostate cancer, requires level 1 clinical trial evidence before it can be widely adopted. Thus, the development, resourcing and roll out of clinical trials for women with low risk DCIS randomised to active surveillance or guideline concordant care across the globe has become a priority. In the U.K. the LOw RISk (LORIS) trial, in the U.S. the COMET (Comparison of Operative to Monitoring and Endocrine Therapy) and through the EORTC, the Low Risk Dcis (LORD) trials are now underway and successfully recruiting. While the outcomes of these clinical trials will not be available for some time, active surveillance for women with low risk DCIS should be offered to eligible women where the trials are available and thus active surveillance for low risk DCIS should certainly be considered.

WHAT IS THE OPTIMAL WAY TO ACHIEVE CLEAR MARGINS IN BREAST CONSERVING SURGERY?

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It is clinically important to achieve an uninvolved (clear) margin around a primary breast cancer or DCIS when performing breast surgery. Failure to obtain a clear margin results in increased local recurrence, even with the use of adjuvant therapies. Many different criteria for what constitutes a clear margin have been used over the years ranging from 10mm or more down to the current “no ink on tumor” for invasive disease, and perhaps DCIS, now widely discussed. Unfortunately, reoperation rates for breast conservation remain a global issue with implications for patients and health care systems that would be good to resolve. From a surgeon’s perspective, the preoperative information from clinical examination, imaging and selection of patients suitable for breast conservation surgery (rather than mastectomy) set the scene for operative success. Methods of localisation of the lesion(s) particularly if impalpable can be critical to resecting the correct area. Excision of the lesion and awaiting post-operative pathology reports together with excision of the circumferential margins has been popularised by some. Alternatively, intraoperative assessment by imaging of the resected tissues, pathology review and discussion between the surgeon, imaging and pathology team can facilitate further selected margin resection if required and give real time intraoperative feedback. However, this approach may still fail particularly for DCIS and for lobular invasive breast cancers. New methods and technologies to determine margins, preferably intraoperatively and rapidly, have been developing in recent years. These range from optical imaging techniques of the tumor bed and or specimen, some using “dyes”, through to metabolomic profiling of the smoke from diathermy as it cuts through the breast. Such technologies need to overcome multiple regulatory and resource hurdles to demonstrate feasibility and then single arm and randomized trial designs to prove their worth. The optimal way to achieve clear margins, however defined, in breast conserving surgery remains unclear at the present time. It is the subject of multiple technological efforts to provide real time, first time successful clearance of the tumor. The contexts and methods for ways to achieve clear margins for breast conserving surgery will be presented and discussed.

THE DURATION AND CHOICE OF ADJUVANT ENDOCRINE THERAPY

Nicholas Wilcken, Australia

Adjuvant endocrine therapy has been standard treatment for hormone receptor positive early breast cancer for several decades. We can accept the basics, especially as they apply to the first five years after diagnosis:

- Tamoxifen for 5 years is effective treatment
- Aromatase inhibitors (AIs) are slightly better, with a different side-effect profile
- AIs for 2 to 3 years followed by tamoxifen has efficacy similar to 5 years of AI therapy

The choice of therapy for the first five years therefore depends on menopausal status, co-morbidities, risk of recurrence and likelihood of compliance. For example, where the risk of recurrence is low there is unlikely to be any material difference in efficacy between tamoxifen and an AI. Furthermore, if the AI causes significant arthralgia it may be that compliance would be better with tamoxifen. The remaining questions for today’s clinic are:

- In whom should we recommend ovarian suppression with either tamoxifen or an AI?
- Who should be offered extended treatment beyond 5 years and with what?

The SOFT and TEXT trials have shown us that disease free survival is somewhat better with the addition of ovarian suppression to tamoxifen and with the use of exemestane

instead of tamoxifen, in the presence of ovarian suppression. Importantly, significant benefits are not seen when the risk of recurrence is low. To put this into context, when the 5 year disease free survival following chemotherapy and tamoxifen dipped below 80%, the improvement with ovarian suppression began to become clinically meaningful (absolute difference of 4.5%). Similarly, the benefits of extending adjuvant therapy after 5 years of tamoxifen are clear cut, and again the decision will depend first on what the estimated residual risk of recurrence is and then on issues related to toxicity and patient preference. However, many if not most women currently treated will be on an aromatase inhibitor, not tamoxifen. While the MA 17R study showed a benefit for longer duration of AI therapy, most of these patients had 5 years of tamoxifen first. We are thus still not sure if 10 years of an AI is actually better than an initial 5 years of AI. A sensible strategy would be to consider a second 5 years of AI in those who have tolerated the drug well and who still have a significant estimated risk of recurrence (for example, perhaps those with node positive disease).

ORAL ABSTRACTS

OR01

COMPARISON OF PROGNOSTIC PERFORMANCE OF ONCOTYPE DX RECURRENCE SCORE VERSUS ENDOPREDICT (EPCLIN) IN WOMEN WITH INTERMEDIATE RISK OF RECURRENCE BY NOTTINGHAM PROGNOSTIC INDEX

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Problem Statement: A number of multigene assays for the prediction of distant recurrence have been established for women with oestrogen receptor positive early breast cancer. The EndoPredict assay (EPclin) is a multigene classifier to predict the likelihood of distant recurrence in ER-positive, HER2-negative breast cancer patients treated with adjuvant endocrine therapy and has been validated in several translational studies. However, an important clinical question is whether EPclin provides valuable prognostic information in women with an intermediate risk of recurrence, as defined by the Nottingham Prognostic Index (NPI). Here, we evaluate the EPclin in this patient group and compare the prognostic value to the Oncotype Recurrence Score (RS) for the overall and late distant recurrence. **Methods:** Data on EPclin and RS available for 878 postmenopausal women with ER-positive, HER2-negative disease. The primary endpoint was distant recurrence and the primary objective was to assess the prognostic value of EPclin for the prediction of (late) distant recurrence and compare the results to RS in intermediate risk women. Kaplan–Meier and Cox regression analyses were used to determine distant recurrence risk for 0-10 and 5-10 years of follow-up. Likelihood ratio tests were used to assess the prognostic information provided by EPclin. Hazard Ratios (HR) are for a change in 1 Standard Deviation. **Results:** 387 (44.1%) women were of intermediate risk by NPI. EPclin, EP, and to a lesser extent Oncotype RS provided significant prognostic value above and beyond clinical parameters for distant recurrence in years 0-10 (EPclin: HR=1.56 (1.25-1.96), LR-χ2=14.1; EP: HR=1.44 (1.16-1.80), LR-χ2=10.2; RS: HR=1.62 (1.28-2.07), LR-χ2=5.9). 149 (38.5%) women with intermediate NPI were categorised into the low EPclin risk group and 238 (61.5%) into the high risk group. A highly significant separation between EPclin low and high risk groups was observed (10-year distant recurrence risk low: 12.5% vs. high: 25.9%; HR=2.42 (1.39-4.23), $P_{logrank}$=0.001). For Oncotype RS, no clear separation between intermediate and high risk groups was observed, with similar 10-year distant recurrence risks (75.8% vs. 72.7%). For the prediction of late distant recurrence (5-10 years), Oncotype RS did not provide any significant prognostic information in this patient group. EPclin provided significant prognostic value in this time period and identified a group of patients 136 (40.2%) as low risk and 202 (59.8%) of women as high risk (5-10-year distant recurrence risk low: 8.8% vs. high: 16.7%; HR=2.22 (1.09-4.55), $P_{logrank}$=0.025). **Conclusion:** Although sample size was small, EPclin provided significant prognostic information and risk stratification for women with intermediate risk of recurrence by NPI. EPclin identified a large proportion of women as high risk who might benefit from chemotherapy or extended endocrine therapy in this patient group. Oncotype RS did not provide useful prognostic value for late metastasis for women deemed intermediate risk of recurrence by NPI. These results furthermore confirm the importance of the inclusion of clinicopathological data to achieve best prognostication in this patient group. **Disclosure of Interest**: I. Sestak: None declared, R. Kronenwett Employee of: Myriad Genetics, J. Cuzick: None declared, M. Dowsett Grant/Research support from: AstraZeneca, Pfizer, PUMA, Radius, Consultant for: Radius, Janssen, Genoptix, Speakers bureau for: Myriad Genetics, Novartis

OR02

THE ROLE OF ANTIBIOTICS IN BREAST POCKET IRRIGATION AND IMPLANT IMMERSION DURING BREAST SURGERY: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Problem Statement: Antibiotics and antiseptics are often used to washout the breast pocket, or to soak the breast implant during surgery, and this practice has come under scrutiny in recent times. The guidelines provided by the CDC provide no recommendation for or against the irrigation of tissues or soaking of prosthetic devices in antibiotics, however they do offer a weak recommendation for washing tissues with iodophor solution, but no recommendation for the soaking of prosthetic devices in antiseptics. In Australia, the New South Wales Ministry of Health recently issued a safety notice against the use of povidone-iodine for irrigation or soaking of prostheses, as this practice is considered "off label" use. This systematic review aims to investigate the efficacy and impact of such topical antibiotic or antiseptic usage in reducing surgical site infection rates. **Methods:** A systematic electronic search was performed on the PreMEDLINE, MEDLINE, EMBASE, and CENTRAL (Cochrane) databases from inception to April 2017. Reference search was performed manually through Scopus. The results of the searches were independently screened by two reviewers (A.F. and P.H.) for eligibility. Studies involving an implant or tissue expander, with appropriate controls for antibiotic or antiseptic use were included. Meta-analyses were performed where possible and data summarised when not. **Results:** 215 records were obtained, of which 3 retrospective cohort studies fit the review requirements. There were no randomized control trials found. The 3 studies covered a period of (1996-2010), with a total of 3768 women undergoing augmentative breast surgery. 2 studies showed that washing out the breast pocket with antibiotics resulted in an RR of 0.51 (p = 0.004, 95%CI = 0.32–0.81), while the third study showed that implant immersion in antibiotics had no statistically significant reduction in infection rates. Overall, the usage of antibiotics in irrigating the breast pocket or submerging the breast implant resulted in lower infection rates (RR = 0.52, p = 0.004, 95%CI = 0.34–0.81).

Table:

Conclusion: There is insufficient high-quality evidence surrounding the usage of antibiotics in pocket washout or implant immersion in breast surgery, although current low-quality evidence suggests that there is a clinical benefit in using antibiotics. Inferences must be made for the reconstructive setting, as no suitable papers addressing this issue in breast reconstruction were found. Infection rates in reconstructive surgeries can be expected to be higher due to multifactorial causes such as a disrupted vascular supply, lymph node dissection, and adjuvant therapies. A large-scale randomised control trial needs to be conducted to reduce bias and to provide a higher level of evidence on this important issue.

Disclosure of Interest: None declared

3

GETING CANCER METABOLISM ENHANCES THE EFFECT OF ANTI-CANCER IG IN BREAST CANCER CELLS

. **Hong[1,2]**, H.-O. Jin[3], M.-R. Kim[4], H.-A. Kim[1,5], M.-K. Seong[1,5], J. Hong[2], :. Noh[1,5], I.-C. Park[4]

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ɔlem Statement: Cancer cells rewire their metabolism to promote growth, ival and proliferation. The feature of the altered metabolism is the eased glucose uptake and aerobic glycolysis. Dysregulated glucose abolism in cancer cells is linked to therapeutic resistance in cancer tment. Thus, targeting glucose metabolism may improve the response to :er therapeutics and the combination of chemotherapeutic drugs with ose metabolism inhibitors may represent a promising strategy to ·come drug resistance in cancer therapy. **Methods:** Cell death was uated using by annexin V and PI staining. The synergistic effects of abolism targeted drugs and anti-cancer drugs were assessed by ologram analysis. Small interfering RNA (siRNA) was used for suppressing e expression. The mRNA and protein levels were measured by RT-PCR and tern blot analysis, respectively. The cells were visualized using a rescence microscopy. **Results:** We have previously shown that combined tment of metabolism targeted drugs, DCA (dichloroacetate) and formin markedly induced breast cancer cell death. Interestingly, however, ound that HIF-1α activation in breast cancer cells suppressed metabolism eted drugs- induced cell death, suggesting that targeting hypoxia is essary for cancer cell metabolism targeted therapy. Thus, we investigated anticancer drugs that can kill cancer cells even under hypoxia. We found lapatinib, the dual inhibitor of epidermal growth factor receptor (EGFR) human epidermal growth factor receptor 2 (HER2) tyrosine kinases, ·comes the effect of hypoxia on the cell death induced by DCA/metformin. , MCF7 breast cancer cell sensitivity to metformin was enhanced by tinib via induction of autophagy. Furthermore, we observed that amine deprivation restored cell death induced by metformin and lapatinib, :ating that the glutamine pathway is associated with cell death by formin and lapatinib. **Conclusion:** Based on these finding, we suggest that eting of metabolic dependencies of cancer cells could enhance the cell itivity to anti-cancer drugs and overcome tumor hypoxia in breast cancer apy.

losure of Interest: None declared

4

E AND SIGNIFICANCE OF EXTRA-CAPSULAR EXTENSION IN BREAST ICER POSITIVE SENTINEL LYMPH NODES

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ɔlem Statement: The results of the Z0011 study published in 2011 changed approach to management in node positive breast cancer. However, extra- ular extension (ECE) of sentinel lymph node metastasis was not ıtioned. We evaluated the rate of ECE of sentinel lymph node metastasis its relation to the total number of involved axillary nodes. **Methods:** We ɔspectively summarized our data in breast cancer patients undergoing ary dissection in 2007 and 2008. All patients with breast cancer had axillary ısound with biopsy of suspicious lymph nodes. ECE and number of lved nodes were assessed. **Results:** 93 patients had axillary dissection, 38 9%) with lymph node metastasis diagnosed pre-operatively and 55 (59.1%) r positive sentinel lymph node biopsy. ECE was more frequently found in ents with pre-operatively diagnosed axillary nodal involvement (31.6%), ı in patients having axillary dissection after a sentinel lymph node biopsy 0%), but this difference was not statistically significant. In all the patients undergoing axillary dissection, the total number of involved nodes in the presence of ECE was 8.6 compared to 4.0 without extension (p<0.001). In those having a sentinel lymph node biopsy there were 5.7 nodes involved in the presence of ECE and 2.4 in those without ECE, and in patients having only axillary dissection the rates were 11.2 and 4.0, respectively. **Conclusion:** Extracapsular extension is common in patients with a negative preoperative axillary ultrasound having a sentinel lymph node biopsy for breast cancer. When present, it is associated with a higher number of involved axillary nodes. This should be taken into consideration when implementing the Z0011 criteria.

Disclosure of Interest: None declared

OR05

HYPO-FRACTIONATED RADIOTHERAPY (RT) SCHEDULE OF 35GY IN 10 FRACTIONS IN ADVANCED INCURABLE BREAST CANCER: A PROSPECTIVE PHASE I/II STUDY

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Problem Statement: Compared to conventional fractionation, breast carcinoma has been found to be more sensitive to higher fraction size. There is no standard palliative regime used in locally advanced breast cancer for local or regional symptom control but doses of 40-50Gy over 3-5 weeks have often been used. Within a Phase-I/II study, we investigated the feasibility and safety of a two-week palliative hypofractionated radiotherapy schedule (35Gy in 10 fractions) in advanced incurable breast cancer patients. We also assessed the response (clinical and imaging) as well as Quality of Life (QOL) changes in this group of patients. **Methods:** Radiation dose of 35Gy in 10 fractions over 2 weeks to the breast and supraclavicular fossa (SCF) was prescribed to palliate symptomatic advanced incurable breast cancers. To prevent overdose, a robust RT Quality Assurance(QA) was done using in-vivo thermoluminescent dosimetry (TLD). A film based dosimetry of the junction field (JF) was carried out to ensure junctional dose safety at the SCF and the tangential fields. Acute toxicity was assessed using Common Terminology Criteria for Adverse Events version 4 and LENT SOMA toxicity grading at pre-RT, weekly during RT, monthly up to 3 months post-RT and then 3-monthly for a year. QOL was assessed using FACT-B score and PHQ4 at the same time intervals. **Results:** Of the required 30 patients, 25 have been recruited so far. Median dose received by 95% volume of the breast PTV was 96.3% (range=95.2-98.9%). The median dose maximum to the breast PTV was 106.4% (Range: 105.4-106.9%). Breast PTV receiving ≥105% of the prescribed dose was 1.75% (median) with no point dose ≥107%. Organ at risks (OAR) dose constraints were met for all patients. Median percentage variation for isocenter dose was 3% (Range: -9.7 to 9.4%). Median percentage dose variation for JF was 1.2 % (Range= -8.5 to 8.9%). The junction movement range was between -2mm and +3mm. After a median follow-up of 7 months, the highest toxicity was grade-2 acute skin toxicity in one patient. None of the them reported any grades of dysphagia or brachial plexopathy. Overall, all of them reported a better QOL at 3-months post-RT (Table 1).

Table:

Table 1. QOL parameters (PHQ4 – Lower the better; FACT-B – Higher the better; n=25)

QOL Parameter		Mean QOL Score	
		Pre-RT	3-months post-RT
PHQ4		3.56	2.44
FACT-B	FACT-B	103.40	109.05
	FACT-G	79.14	84.89
	TOI*	64.73	66.32

*TOI – trail outcome index

Conclusion: QA measures in the HYPORT study confirm the delivery of the prescribed two-week dose schedule with no significant over-dosage at the field junctions. A 35Gy/10 fractions/2-weeks palliative radiotherapy regimen is feasible with confirmation that the delivered and received doses are safe. This is an effective palliative regimen for symptom control in incurable breast cancer, improving the QOL of such patients. Completion and long-term follow-up of this study are required before routine use.
Disclosure of Interest: None declared

OR06

PATIENT REPORTED OUTCOMES ACCORDING TO RECEIPT OF NEOADJUVANT OR ADJUVANT SYSTEMIC THERAPY FOR BREAST CANCER: RESULTS OF A PROSPECTIVE LONGITUDINAL STUDY

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Problem Statement: Neoadjuvant systemic therapy (NAST) has become an important, and increasingly used, treatment option for women with large or highly proliferative operable breast cancer. Benefits include: downstaging from mastectomy to lumpectomy, less axillary surgery, time to consider surgery including reconstruction, time for genetic testing, and prognostication. However, patients who do not achieve a pathological complete response (pCR) have a poorer prognosis than those who achieve pCR after NAST. It is not known whether psychological outcomes differ in patients who receive NAST according to pCR, and whether these outcomes differ from patients who have surgery first followed by adjuvant systemic therapy. **Methods:** These data comprise a substudy of a larger study to evaluate a patient decision aid (DA) for women who were considering NAST for operable breast cancer, which recruited participants at four Australian centres. Demographics, tumour details, and treatment were recorded. Participants completed online questionnaires prior to accessing the DA, and on three occasions post-DA. Outcome measures were patient reported measures relevant to patient decision-making including anxiety (STAI-6), distress thermometer, satisfaction with decision-making and decisional regret. Planned sample size was 50 participants having completed assessment 2. **Results:** Fifty-nine women enrolled in the study, and 51 completed assessment 2. Median age was 52, 81% were married, 51% had tertiary education, 86% had private health insurance. At baseline, mean tumour diameter was 31mm, 46% had positive axillary nodes, 38% had HER2 positive, and 19% had triple negative tumours. Fifty-one received NAST, 7 had surgery first and 1 was unknown (withdrew consent after assessment 1). Of the 51 neoadjuvant patients, 14 (28%) had pCR in the breast and lymph nodes, and a further 20% had minimal residual cancer burden (RCB 1). 54% had a mastectomy, 85% had radiotherapy. At baseline, 38 preferred NAST, 2 preferred surgery and 18 were unsure (1 missing). Of the 18 who were unsure, 12 (67%) went on to have NAST and 6 (33%) had surgery; compared to 40 who were sure, where 39 (98%) had NAST and 1 (2%) had surgery (Chi2=11.1, p=0.001). Baseline anxiety was significantly higher (Δ=10 points, 95% CI 0-19, p=0.046) in patients who had surgery first compared with NAST, and remained higher to 12 months of follow up. There was no difference in distress between surgery first and NAST, with both groups' scores decreasing over time. Mean satisfaction with decision score post-DA was significantly lower in the surgery-first group compared with NAST (22 vs 26, p=0.02). Comparing those with pCR to those who had residual cancer in breast and/or lymph nodes: distress and anxiety were no different after chemotherapy and at 12 months; satisfaction with decision and fear of progression during chemotherapy were no different; and decision regret was numerically (but not significantly) lower in the pCR group after chemotherapy (18 vs 12, p=0.15) and at 12 months (12 vs 5, p=0.17). **Conclusion:** Most patients who were given the option of NAST by their surgeon proceeded with NAST. Compared with those who were sure about their decision at baseline, more of those who were unsure elected to have surgery first. Anxious patients tended to choose surgery first. In patients who had NAST, pCR does not appear to correlate with anxiety, distress, fear of progression, fear of recurrence, satisfaction or regret.
Disclosure of Interest: None declared

OR07

IS NIPPLE-SPARING MASTECTOMY WITH IMMEDIATE RECONSTRUCTION SAFE FOR ASIAN WOMEN? AN 11-YEAR REVIEW

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Problem Statement: Nipple-sparing mastectomy (NSM) allows for improved aesthetics of postmastectomy reconstruction. It may be performed both for treatment and risk reduction. However, reservations regarding the potential for locoregional recurrence and concerns about nipple areolar complex (NAC) viability are the hurdles to complete acceptance of NSM in our population. We review the oncological and surgical outcomes after NSM. **Methods:** This is a retrospective review of all NSM cases performed at the National Cancer Centre Singapore and Singapore General Hospital between 2005 and 2015. Tumour type and stage, reconstruction method, surgical and oncological outcomes are described. **Results:** A total of 138 NSMs were performed for 129 patients. There was an increasing trend in NSM over the years with a rise from 2% of all breast reconstructions performed in 2005 to 35% in 2015. The median age was 46 years old. Indications for NSM were therapeutic for breast cancer in 118 (86%) and risk-reducing in 20 (14%), with majority of the therapeutic group having early stage breast cancer (n=106, 89%). Of the 118 NSMs performed for breast cancer, majority had invasive ductal/lobular carcinoma (n=78, 65%), while 39 (33%) had carcinoma-in-situ, and one patient had primary malignant melanoma of the breast. Periareolar with or without lateral extension and the omega type incision was utilized in 92 (66%) of NSMs. Autologous tissue reconstruction (n=109, 79%) was used in majority of the reconstructions. Early complications requiring surgical intervention occurred in 21 (15%) NSMs, including 11 (8%) partial skin flap loss and 6 (4%) partial NAC necrosis requiring surgical debridement. None of our patients had a complete flap loss or NAC loss. Overall median follow up was 43 months. The 2-year overall survival (OS) rate is 97%, and 5-year OS rate is 88%. The local recurrence rate amongst the therapeutic NSMs was 5% (6/118), of which 2 recurred at the NAC (1.7%). **Conclusion:** NSM is an oncologically safe procedure in carefully selected patients with acceptable low complication rates.
Disclosure of Interest: None declared

OR08

CLINICAL UTILITY OF ADDING 21-GENE RECURRENCE SCORE TO STANDARD TREATMENT DECISIONS IN EARLY-STAGE HORMONE RECEPTOR-POSITIVE BREAST CANCER

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Problem Statement: The 21-gene Recurrence Score (RS) (Onco*type* DX® Breast Cancer Assay) is one of the most used multigene assay to predict prognosis or response to treatment for hormone receptor-positive invasive breast cancer patients. As the only test proven to predict chemotherapy benefit, the test is included in all major cancer guidelines worldwide and now considered as standard of care for women with early-stage breast cancer. In Japan and most of Asian countries, however, the test is not frequently used because of its expensive and no coverage by national insurance. In addition, there are concerns about 30% of patients will be categorized as an intermediate risk of recurrence that is currently under way for the TAILORx trial. Under such a situation, it is important to appropriately suggest to patients who really need. In this study, we aimed to assess the clinical utility of addition of the Onco*type* DX® to standard clinicopathological criteria in selecting patients for adjuvant

chemotherapy. **Methods:** Two hundred twenty patients with hormone receptor-positive invasive breast cancer who underwent surgery for breast cancer from November 2009 to March 2016 and had the Onco*type* DX® were enrolled in this study. The genomic risk using Onco*type* DX® and the clinical risk in each patient were determined and defined RS≧25 as high genomic risk, and nuclear grade 3, tumor size >5cm, axillary lymph node-positive, and/or Ki67≧30% as high clinical risk. Disease-free survival (DFS) was assessed using Kaplan-Meier (KM) analysis. A *p*-value of 0.05 was considered statistically significant. **Results:** A median follow-up period was 3.5 years. Among 220 patients, women at low-clinical/low-genomic risk did not receive chemotherapy, while those at high-clinical/high-genomic risk received. In 88 patients (40.0%) with discordant results between clinical and genomic risk, 83 patients (37.7%) had invasive ductal carcinoma, and 5 patients (2.3%) had invasive lobular carcinoma (ILC). All 5 patients had ILC were high-clinical/low-genomic risk. All of 78 patients (35.4%) with high-clinical/low-genomic risk did not receive chemotherapy. The DFS rate in the high-clinical/low-genomic risk group was 97.4%. On the other hand, 10 patients (4.5%) with low-clinical/high-genomic risk received chemotherapy. Of the 10 patients, only one patient who did not receive chemotherapy had recurrence, while all of 9 patients who received chemotherapy had no recurrence. There was no significant difference in terms of DFS between the two discordant risk groups (*p*=0.202). **Conclusion:** Our results indicated that adjuvant treatment with or without chemotherapy might be appropriately given to patients with early-stage hormone receptor-positive breast cancer by genomic risk using Onco*type* DX® rather than clinical risk regardless of the discordance between clinical and genomic risk. Our study to predict patients who may not need to apply Onco*type* DX® is ongoing.
Disclosure of Interest: None declared

OR09

SURVEILLANCE OF THE RECONSTRUCTED BREAST FOLLOWING BREAST SURGERY: TO IMAGE OR NOT TO IMAGE?

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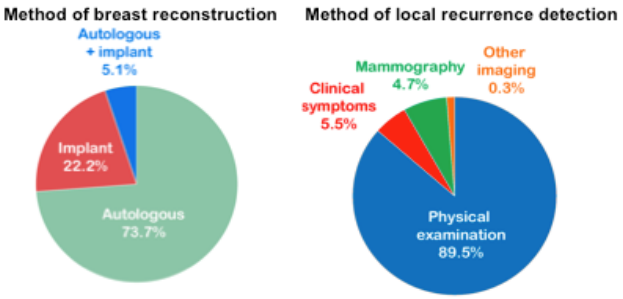
Problem Statement: There are currently no published guidelines on surveillance of the reconstructed breast after surgery for breast cancer. Older studies have suggested a role for screening, but more recent studies refute the need for mammographic surveillance, particularly in patients with implant-based reconstruction. After autologous reconstruction, the true posterior margin lies deep to the reconstructed breast, potentially masking chest wall recurrence. This study reviews the current literature and clinical practice on this topic. **Methods:** Using MEDLINE, nine electronic databases were systematically searched, from 1980 to December 2016. Keywords used were “breast cancer”, “reconstruction or mammoplasty”, “recurrence” and “mastectomy”. Inclusion of articles was established through application of a predetermined protocol, independent assessment by two reviewers and a final consensus decision. **Results:** Of 967 articles, 47 described follow-up protocols and 11 published quantitative data on methods of detecting local recurrence specific to the type of breast reconstruction. A large proportion of local recurrence was detected clinically for both implant-based and autologous reconstruction as local recurrence commonly occurs in the subcutaneous tissue within the skin flap. When not detected clinically, the most common symptom patients who developed chest wall recurrence described was pain.

Table:



Conclusion: Surveillance after breast reconstruction should be performed annually by thorough history and physical examination only. Routine imaging is not recommended. Suspicious findings should be investigated with further imaging such as mammography or ultrasound and biopsy. Institutional protocols should be established for screening in this cohort.
Disclosure of Interest: None declared

OR10

CAN CONTRAST ENHANCED SPECTRAL MAMMOGRAPHY REPLACE MAGNETIC RESONANCE IMAGING IN THE DETECTION AND STAGING OF BREAST LESIONS?

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Problem Statement: In the field of breast imaging, the best results are obtained by imaging modalities which can combine both, morphological assessment and functional information. These modalities include dynamic contrast enhanced MRI (DCE-MR) and contrast enhanced spectral mammography (CESM). Our aim was to evaluate the diagnostic performance of CESM as a potential replacement for MRI in the detection and staging of breast lesions, being more economic with limited resources usage. **Methods:** This prospective study was done in Egypt in 2012, CESM and MRI were done in 70 patients who had suspicious lesions in conventional mammography. All lesions were evaluated by experienced radiologists. Dimensions of lesions measured with each modality were compared to postoperative pathology results. **Results:** There were 70 patients entered into CESM/MRI studies, 82 lesions were identified by the combination of CESM and breast MRI. Histopathology confirmed that 37 of 70 patients had malignant lesions (53%) and 33 had benign lesions (47%). Sensitivity was 94% with CESM and 94% with breast MRI. Specificity was 66% with CESM, while it was 85% with MRI. About the size of the lesions, both modalities showed equal sizes in 50/82 lesions (61.6%) compared to the postoperative pathology results. In addition, both modalities were able to detect multicentricity and bilateral breast cancer equally. **Conclusion:** With the introduction of CESM, we can confidently admit that a comparative and competitive modality to MRI has been introduced in the field of breast imaging, having nearly the same sensitivity, and being more available and cheaper in our country. Also, it was more comfortable for the patients, no claustrophobia, more time saving, consumed less resources and no specific patient weight limit. However, MRI is still more superior and further studies should be made to improve the results of CESM, such as developing a standardized classification system for interpreting CESM findings.
Disclosure of Interest: None declared

OR11

HOW REALISTIC ARE PUBLISHED BREAST CANCER OVERDIAGNOSIS RATES?

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Problem Statement: Breast cancer screening programs reduce breast cancer mortality, but also lead to the detection of cancers that would never have been found without screening (overdiagnosis). It is difficult to measure the extent of overdiagnosis that occurs, with current estimates ranging from zero to 52% of all breast cancers diagnosed among women of screening age. However, this information is very important to women and policy-makers who want to weigh up the harms and benefits of screening. **Methods:** We reasoned that some breast cancers are more likely to be overdiagnosed than others (e.g. screen-detected low-grade DCIS versus screen-detected high-grade invasive breast cancers) and that diagnoses in older women are more likely to be overdiagnosed due to increasing competing mortality risks. On this basis, we ranked all breast cancer diagnoses (DCIS and invasive) in a region of Melbourne, Australia (1995-2006, age 50-79, N=4,022) according to their likelihood of overdiagnosis, using information on patient age, tumour size, grade, nodal involvement, DCIS/invasive, and mode of detection (screen-detected, interval cancer, or other). We then used repeated probabilistic sampling to model the average likely features of overdiagnosed cancers for various published diagnosis rates and then report their associated breast cancer specific survival (BCSS, median follow-up 11.0 years). **Results:** An overdiagnosis rate of 5% could be achieved by sampling as overdiagnosed all low and intermediate grade screen-detected DCIS; no breast cancer deaths were observed in this group. Probabilistic sampling included a small selection of <10mm low grade screen-detected cancers, and a mean 10-year BCSS of over 99%. An overdiagnosis rate of 25% required sampling a significant proportion of Grade 1 and Grade 2 screen-detected invasive cancers, with an average 10-year BCSS of 98%. An overdiagnosis rate of 50% sampled on average 75% of Grade 3 screen-detected invasive cancers, 62% node-positive screen-detected cancers and 15% of community-detected non-interval cancers, with a mean 10-year BCSS of around 95%. **Conclusion:** This novel modelling study offers additional information to help assess the likelihood of various overdiagnosis rates in our study setting. For example, while an overdiagnosis rate of 5% was plausible and an overdiagnosis rate of 50% was clearly unlikely, a rate of 25% was also unlikely given that this required the inclusion of Grade 1 and 2 screen-detected invasive cancers.

Disclosure of Interest: C. Nickson: None declared, K. Elder: None declared, H. Farrugia: None declared, G. B. Mann Speakers bureau for: Chairperson on the conference committee.

OR12

IMPROVED BREAST CANCER MORTALITY IN BREAST SCREENED PATIENTS IN NEW ZEALAND

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Problem Statement: New Zealand's national breast screening program offers free 2-yearly mammography to women aged 45-69 years. The purpose of this study is to assess the effects of screening on breast cancer mortality in this age group, by comparing presentation through screening and by other means. **Methods:** Patient data of women with primary breast cancer and known detection method were extracted from the Auckland Breast Cancer Register between June 2000 to May 2013. Variables included age at breast cancer diagnosis, AJCC staging, follow-up and mortality. Differences in baseline characteristics between those with screen-detected breast cancer and clinically-detected breast cancer was evaluated using Pearson Chi-Square. Cox regression survival analysis was used to determine hazard ratio for breast cancer and all-cause mortality between groups adjusted for age and cancer stage. **Results:** A total of 7515 women between the ages of 45 and 69 years were diagnosed with primary breast cancer. 4495 (59.8%) were diagnosed through screening, while the remaining 3020 were diagnosed through other means, including palpable lump (2730, 36.3%) and pain/skin changes/nipple changes (230, 3.1%). Median follow up was 58.1 months in the screened population and 62.1 months in the clinically-detected. 3807 (84.7%) of screen-detected patients and 1298 (43.0%) of clinically-detected patients had early T stage disease (DCIS or T1) ($p<0.001$). There was a statistically significant difference in disease specific mortality between the 2 groups (1.6% screen-detected vs 5.9% clinically-detected, $p<0.001$). Nodal disease was present in 775 patients (14.2%) and 1320 patients (43.7%) in the screen-detected and clinically-detected population respectively ($p<0.001$). Breast cancer specific survival at follow up for screened patients was 97.3% vs. 84.3% for clinically-detected ($p<0.001$). Overall survival at follow-up was 94.3% for screen-detected patients compared with 79.1% for clinically-detected patients ($p<0.001$). Adjusted for age and disease stage, hazard ratio for disease specific mortality was 2.83 (95% CI: 2.274±3.521) and overall mortality was 2.06 (95% CI: 1.749±2.418, $p<0.001$) in clinically-detected cancer patients. **Conclusion:** The extent to which breast cancer screening reduces mortality versus driving earlier detection of clinically significant cancers remains controversial. This registry analysis of 7515 patients with medium term follow-up reveals a reduction in all cause mortality even amongst women with clinically significant tumours (not DCIS or T1). Whilst further longitudinal analysis of the Auckland data is needed, our analysis supports a mortality benefit of screening in this population.

Disclosure of Interest: None declared

POSTER ABSTRACTS

P01

STUDYING THE EFFECTIVENESS OF PSYCHOTHERAPY BASED ON ACCEPTANCE AND COMMITMENT ON ANXIETY AND DEPRESSION AND QUALITY OF PARENT-CHILD RELATIONSHIP IN MOTHERS WITH BREAST CANCER AND THEIR CHILDREN

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Problem Statement: The present study aimed at investigating the effectiveness of acceptance and commitment therapy (ACT) on anxiety, depression and quality of parent-child relationship (QPCR) in mothers with breast cancer (BC) and their children. **Methods:** There were two experimental groups and two control groups, including a pre-test, post-test and follow-up test. Statistical population consisted of patients suffering from BC patients and their children referring to chemotherapy centers in Shiraz, Iran from which 60 individual (30 mothers with BC and 30 their adolescence) were selected using convenient sampling method. They were randomly assigned to the experimental and control groups (each 15 members). Experimental groups separately received group therapy during eight 90-minute weekly session. The control groups received no treatment. All participants completed the Beck Depression Inventory-2, Anxiety Beck Inventory, and Parent-Child Relationship Survey- Mother Form as pre-test, post-test and follow-up test. The data were analyzed using analysis of covariance. **Results:** The results of the post-test revealed that ACT has positive and significant effects on improving quality of parent-child of BC patients and of their children and decreased their depression and anxiety. In the follow-up test, these impacts proved to be long-term. This research shows that ACT has improved QPCR of BC patients and of their children and decreased their depression and anxiety remarkably.
Conclusion: Therefore, it is recommended that in addition to prescription of medications, for patients, psychological interventions be done for these patients and their children.
Disclosure of Interest: None Declared

P02

PRIMARY BREAST LYMPHOMA: A SINGLE CENTRE EXPERIENCE

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Problem Statement: Primary non-Hodgkin lymphoma is an extremely rare entity and this condition represents less than 0.5% of all malignant lesions involving the mammary gland. As such, there has been a paucity of relevant clinical data arising from Southeast Asia. Our study aims to review the clinical presentation, diagnostic methods, treatment and survival outcomes of all patients diagnosed with primary breast lymphoma in a single institution between 2011 and 2017. **Methods:** Patients who had histologically proven lymphoma involving the breast were identified from a prospectively collected database in a single institution between 2011 and 2017. **Results:** All 7 patients were female, with a median age of 65 years old and had presented to our institution with unilateral large breast masses. All the histological diagnosis was achieved with adequate tissue diagnosis (i.e. core/incisional/excision). Five patients had diffuse large B cell lymphoma, one had MALT lymphoma and the other had follicular lymphoma. By Wiseman and Liao definition, five had primary breast lymphoma while two patients had disseminated disease. Based on Ann Arbour classification, one patient had Stage 1, three had stage 2, one with stage 3 and two patients with stage 4 disease. Six patients had received standard CHOP regimen with rituximab. At the time of analysis, patients who had non-disseminated disease had a median survival of 57 months. The overall median survival time for all seven patients was observed to be 36months. With the standard CHOP chemotherapy treatment regimen, the estimated 3 year overall survival was found to be over 70%. **Conclusion:** Primary breast lymphoma, though uncommon, may present in a similar manner as breast carcinomas but the main treatment modality remains non-surgical with CHOP chemotherapy regime. Hence, it is prudent to obtain accurate histological diagnosis of primary breast lymphoma. In this study, our patients with non-disseminated breast lymphoma have demonstrated a fairly good survival outcome following chemotherapy.
Disclosure of Interest: None declared

P03

INCIDENCE OF CANCER RELATED FATIGUE (CRF) IN INDIAN WOMEN WITH BREAST CANCER; AN OVERVIEW OF PSYCHOSOCIAL ISSUES IN BREAST CANCER PATIENTS RECEIVING CHEMOTHERAPY

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Problem Statement: Incidence of Cancer related fatigue (CRF) in Indian women with Breast cancer; an overview of psychosocial issues in breast Cancer patients receiving chemotherapy. **Methods:** An exploratory design was adopted for the study. Using purposive sampling method, patients (N=88) undergoing chemotherapy at Rajiv Gandhi Cancer Hospital and Research Center, Delhi, India; aged 30-77 years were included. The level of fatigue was assessed using 16-item Multidimensional assessment of Fatigue (MAF) scale and a semi structured in-depth interview schedule. These interviews were recorded, transcribed and analyzed. **Results:** Irrespective of age, and education, 88% patients experience clinically significant fatigue, of which extreme level of fatigue was reported by 47% patients requiring immediate clinical intervention and 41% patients reported moderate level of fatigue, which is also clinically significant. Top three psycho social issues reported were apprehension of chemotherapy side effects (20%), anxiety during chemo therapy (19%) and combination of multiple psycho social issues by 14 %, followed by loss of appetite by 13%, financial issues by 12% and fear of pain during chemo therapy (10%). Among all the patients, (66%) were aware of their diagnosis, of which 11% were either fully aware or partially aware about the prognosis (20%). **Conclusion:** Fatigue remains one of the most important clinical parameters among majority of the patients receiving chemotherapy, with females reporting it more as compared to their counterparts. Indian patients should be evaluated for treatable conditions that might contribute to this symptom. Exercise, educational material and psychotherapeutic interventions should also be developed to prepare and support them during their treatment phase, which will ultimately lead to reduced symptoms and better quality of life.
Disclosure of Interest: None declared

P04

THE EFFICACY OF NEOADJUVANT CHEMOTHERAPY FOR BREAST CANCER IN BRCA1 AND BRCA2 MUTATION CARRIERS

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Problem Statement: It is reported that there are about 5-10 percent patient with Hereditary Breast and Ovarian Cancer (HBOC) in Japan. In present, the chemotherapy for HBOC patients is the same as non-hereditory breast cancer patients, but it is not evident that it improve prognosis for HBOC patients. We reported that BRCA1 associated breast cancer are less effective to taxanes than non-BRCA1 associated breast cancer, and they might be more effective to platinum agent. We assessed the efficacy of neoadjuvant chemotherapy in *BRCA1* and *BRCA2* patients compared with in non-BRCA1/2 breast cancer. **Methods:** We investigated 78 patients who received the neoadjuvant

chemotherapy for breast cancer and underwent BRCA genetic test in Showa University between October 2010 and October 2016. (22 *BRCA1* mutation carriers, 14 *BRCA2* mutation carriers and 48 negative carriers). We compared clinical response and relapse-free survival between mutation carrier patients and non-carrier patients. **Results:** In *BRCA1* mutation carriers, 69.2%(9/13) of patients responded(CR+PR+SD) to taxanes, and 100%(12/12) patients responded(CR+PR+SD) to anthracycline. In *BRCA2* mutation carriers, 85.7%(6/7) of patients responded(CR+PR+SD) to taxanes, and 100%(8/8) patients responded(CR+PR+SD) to anthracycline. In non-*BRCA* group, 88%(22/25) of patients responded(CR+PR+SD) to taxanes, and 82.9%(34/41) patients responded(CR+PR+SD) to anthracycline. Patients who have BRCA1 mutation might be resistant to taxanes than the other patients, but there might be same as in BRCA2 group and non-carrier group. And in BRCA carriers, recurrence-free survival was significantly inferior (p=0.047) in taxane-containing regimen group, but in non-BRCA carriers, recurrence-free survival was the same as in both groups. In BRCA carrier, the platinum agent was used in 90% (p=0.004), so it is speculated that the recurrence-free survival was superior than the taxane-containing regimen group. **Conclusion:** For BRCA carriers, platinum regimen might be promising regimen than taxane-containing regimen in neoadjuvant chemotherapy of breast cancer.
Disclosure of Interest: None declared

P05

QUALITY OF LIFE ACCORDING TO RISK-REDUCING SALPINGO-OOPHORECTOMY IN KOREAN BRCA CARRIERS

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Problem Statement: Risk-reducing salpingo-oophorectomy (RRSO) is generally recommended for women with BRCA1 or BRCA2 mutation over 35 years of age who have finished childbearing. However, the RRSO may impact on several aspects of quality of life (QOL). This study was designed to compare the QOL, emotional status, sexual function and menopausal symptoms between RRSO and non-RRSO group. **Methods:** A total of 52 women with BRCA1 or BRCA2 mutation at age more than 35 were included in this study. Outcomes were measured using the forms including the Short Form 36 Health Survey version 2 (SF-36v2) for QOL, the State-Trait Anxiety Inventory (STAI)-1 for anxiety, the Beck Depression Inventory (BDI) for depression, the Life Orientation Test-Revised (LOT-R) for optimism, the Cancer Rehabilitation Evaluation System (CARES) for sexual function, and the Menopause Rating Scale (MRS) for menopausal symptoms. This study was approved by the institutional review board of Seoul National University Bundang Hospital. **Results:** In total, 30 (57.7%) women underwent RRSO and 22 (42.3%) women did not. The mean age of RRSO group was higher than that in non-RRSO group (49.8 years vs. 42.1 years, p = 0.002). However, the other demographic factors, personal and family history of breast cancer, and BRCA mutation type were not significantly different between two groups. The scores for mental QOL, anxiety, depression, optimism, sexual function and menopause symptoms were also similar between RRSO and non-RRSO groups. Only physical component score (PCS) of QOL in RRSO group was lower than that in non-RRSO group (58 vs. 65) with a trend toward significance (p = 0.08). Among RRSO group, 16 (53.3%) women underwent RRSO before menopause and 14 (46.7%) underwent RRSO after menopause. The timing of RRSO did not affect physical QOL, emotional status, sexual function, menopausal symptoms, and BMD except mental QOL. The mental component score (MCS) of QOL was significantly lower in postmenopausal RRSO group compared with premenopausal RRSO group (39.2 vs. 43.7, p = 0.04). **Conclusion:** In our study, older women with breast cancer tended to have RRSO. There were no differences in QOL and menopausal symptoms according to the RRSO uptake. These results will help physicians counsel the BRCA carriers about some negative issues related to RRSO.
Disclosure of Interest: None declared

P06

CLINICAL OUTCOMES ACCORDING TO BRCA GENE STATUS IN BREAST CANCER PATIENTS. CAN THE BRCA GENE MUTATION BE USED AS A PROGNOSTIC FACTOR FOR BREAST CANCER?

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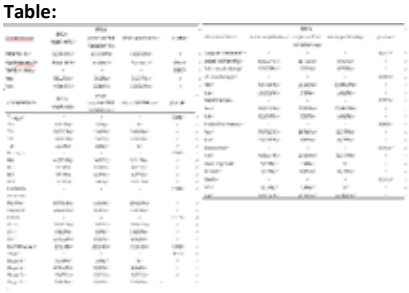
Problem Statement: BRCA mutations occur frequently in breast cancer (BC), but their prognostic impact on outcomes of BC has not been determined. BRCA1, 2+ and UV (Unverified Variation) patients were identified. According to BRCA mutation, we investigated the differences in pathologic features, overall survival and disease-free survival. **Methods:** From 2000-2016 July, we analyzed 93 patients who underwent BRCA gene testing among 1,000 patients treated for breast cancer. Statistical analysis was conducted using SPSS 14.0. The survival rate was measured using the Kaplan-Meier method. The association of each other was measured using linear by linear association test. **Results:** The mean age of BRCA gene tested breast cancer patients was 39.7±4.2y. 52 patients (55.9%) had BRCA non-carrier patients. 25 patients (26.9%) had BRCA UV (Unverified Variation). 16 patients (17.2%) had BRCA gene mutation. BRCA 1 positive was 10 patients (10.5%) and BRCA 2 positive was six patients (6.5%). 12 patients (12.9%) had family history of breast cancer or ovarian cancer. Three patients (3.2%) were UV group and three patients were BRCA positive group. OS and DFS did not reveal statistically significant difference with BRCA gene mutation. Also, there was no significant difference in BRCA and T stage, but N stage was statistically significant. (P=0.01) Of the 93 patients, 23 (24.7%) had triple negative breast cancer (TNBC). Six patients (60%) of BRCA 1 positive 10 patients were found to have TNBC. But not in the BRCA 2 group.
Table:



Conclusion: There was no significant difference in OS and DFS associated with BRCA gene mutation. The pathologic features revealed only statistically significant correlation with the N stage. The treatment should be maintained in accordance with pathological differences of BRCA 1 and 2. However, additional research is needed because the number of patients was small.
Disclosure of Interest: None declared

P07

BRCA1/BRCA2 MUTATIONS IN JAPANESE WOMEN WITH DUCTAL CARCINOMA IN SITU

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Problem Statement: Ductal carcinoma in situ(DCIS) is considered a component of the clinical spectrum of breast cancer even in those with *BRCA1/2* mutation. The aim of this study was to evaluate *BRCA1/2* mutations

in Japanese women who were diagnosed with DCIS. **Methods:** 325 Japanese women with breast cancer(BC) (with or without invasive cancer) were referred for genetic counseling and underwent genetic testing for mutations in the *BRCA1* and *BRCA2* genes in Showa University Hospital between December 2011 and August 2016. And 49 of them who were pathologically diagnosed as DCIS were included in this study. Logistic regression models were fit to determine the associations between potential predictive factors and *BRCA* status. Kaplan-Meier product-limit method was used to estimate Recurrence-Free Survival(RFS) and predictive value of parameters for Ipsilateral breast tumor recurrence(IBTR), and Cox univariate and multivariate proportional hazard general linear models were used to calculate for contralateral breast tumor recurrence(CBTR). **Results:** (1) Of 325 patients (with or without invasive cancer), 19.1%(62/325) tested positive for *BRCA1*/*BRCA*2 mutations. And 18.4%(9/49) was positive for *BRCA1*/*BRCA*2 mutations in DCIS, compared with 19.2%(53/276) in IDC (p=1.000). Among *BRCA* carriers, 14.5%(9/62) had DCIS compared with non-carriers (15.2%, 40/263). Incidence of DCIS was 3.0%(1/33) of *BRCA1* carriers and 27.5%(8/29) of *BRCA*2 carriers(p=.009). (2) Of 49 BC patients with DCIS who were included in our analysis, 2% (n=1) and 16.4% (n=8) had *BRCA1* and *BRCA*2 mutation, respectively. Median age of diagnosis in *BRCA* carriers was 39y, compared with 46y in non-carriers. Age, Family history(FH), FH of first or second BC, Number(No.) of relatives with BC diagnosis(DX) and No. of first or second relatives with BC DX has significant difference between *BRCA* carriers and non-carriers. In a multivariate logistic model, ≥2 relatives with BC (odds ratio[OR], 5.242; 95% confidence interval[CI], 1.192-23.063; p=.028) remained as independent significant predictors for *BRCA* mutation. (3) Ki67 index (cut off by 14%) did not differ between *BRCA* carriers and non-carriers (p=.698). If we set up Ki67 index cut off by 30%, it also had no significant difference between *BRCA* carriers and non-carriers (p=.623). (4) *BRCA* mutation was not associated with an increased risk of recurrence (p= .899) in patients with DCIS. The five-year RFS for all DCIS patients was 86.5% (95% CI, 72%>100%). The risk of IBTR and CBTR did not change significantly with respect to *BRCA* status. **Conclusion:** DCIS is equally as prevalent in patients who were *BRCA* carriers as in high familial-risk women who were non-carriers, but occurs at earlier age. It's also found that higher Incidence of DCIS in *BRCA2* carriers compared with which in *BRCA1* carriers, and Ki67 index (cut off by 14% or 30%) did not differ between *BRCA* carriers and non-carriers.
Disclosure of Interest: None declared

P08
CULTURALLY CANCER RISK COUNSELING AND EDUCATION FOR UNDERSERVED LATINAS
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Problem Statement: Research demonstrates that Latinas are highly likely to have cancer risk associated with genetic predisposition to breast cancer and ovarian cancer. In addition, underserved, Latinas have a compelling need for access to genetic cancer risk assessment (GCRA) and cancer screening and prevention measures, along with culturally appropriate education. **Methods:** Four focus groups were conducted consisting of Latinas that have undergone GCRA. Participants completed a demographic questionnaire that included items assessing perceived cancer risk and patient satisfaction. The focus groups entailed a facilitated discussion of the key study variables and other culturally relevant issues that may impact the GCRA intervention. Descriptive statistics and thematic analysis were used and analyzed. **Results:** Findings show that there is a perceived sense of lack of information, education and uncertainty about what to expect appeared to play a key role in distress. Most women initially had negative expectations (expecting the worse or bad outcome), but ultimately felt hopeful that they could learn more about the GCRA process and what it meant for them. Information was cited as the primary contributor to positive psychosocial outcomes specifically increased locus of control and self-efficacy. Cultural themes identified were destiny, religious and spiritual coping mechanisms, how cultural attitudes and beliefs influence lack of information, community awareness, and public health issues. **Conclusion:** Findings indicate that the pre-GCRA window may be most distressing for this population indicating that this may be the most appropriate time for psychological intervention.
Disclosure of Interest: None declared

P09
RISK REDUCTION MASTECTOMY IN BRCA MUTATION CARRIERS
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Problem Statement: Breast cancer is the most commonly diagnosed cancer in women. Hereditary breast and ovarian cancer (HBOC) is the cause of 5~10% of the breast cancer patients. The risk of hereditary breast cancer is reported to be 41 to 90% for BRCA1 or BRCA2 mutation carriers. Guideline was recommended for some medical management of breast cancer—breast awareness, clinical breast exam, surveillance by mammography and magnetic resonance imaging (MRI), risk reduction surgery and agents. Risk reduction mastectomy (RRM) is one of risk-reducing strategies for breast cancer by about 90%. It is reported that occult cancer is detected in 5-25% of RRM patients. The Ethics Committee at St. Luke's International Hospital approved and established a system to implement risk reduction surgery in July 2011. Prior to RRM, patients undergo mammography, ultrasonography and MRI to confirm that there are no malignant findings. This is a report on the status of RRM in BRCA carrier patients and occult cancer cases at our hospital. **Methods:** BRCA genetic testing was performed for 693 cases from July 2011 through March 2017, of which 113 were found to be pathogenic or likely pathogenic. They received approval for risk reduction mastectomy by the Ethics Committee. Clinical information and pathological findings in patients who underwent RRM were examined. **Results:** By BRCA genetic testing, 58 cases were characterized as BRCA1 pathogenic, 5 as likely pathogenic, 47 cases were reported as BRCA2 pathogenic and 3 as likely pathogenic. Patients with a history of breast cancer were 49 BRCA1 cases (77.8%) of the 63 cases (total), 43 BRCA2 cases (86.0%) of the 50 cases (total). Patients with a history of ovarian cancer were 7 BRCA1 cases (11.1%) of the 63 cases (total), 1 BRCA2 cases (2.0%) of the 50 cases (total). Patients with neither history were 10 BRCA1 cases (15.9%) of the 63 cases (total) and 7 cases BRCA2 cases (14.0%) of the 50 cases (total). There was 1 male patient in each of the BRCA1 group and BRCA2 group. Both male patients had no history of any cancer. Among the BRCA1 positive cases, 36 were TN breast cancer (80%) and among BRCA 2 cases, 7 were TN breast cancer (17.5%). Total 31 women received RRM and immediate reconstruction was performed in 18 cases (66.7%) of RRM. Of the BRCA1 mutation-positive patients, 20 (31.7%) underwent RRM. Of the patients who underwent RRM, 14 (70%) also had received RRSO. Among patients with positive BRCA2 mutation, 11 (25.6%) underwent RRM., 6 (54.5%) also had RRSO. Occult carcinoma in RRM specimens were noted in 4 cases (12.9%), and 2 cases in each of the 2 groups, BRCA1 and BRCA2. There were 3 DCIS cases and one invasive ductal carcinoma case. **Conclusion:** As measures of medical management, fewer than 30% of BRCA patients had selected risk reduction surgery. Our data shows that invasive ductal carcinoma was also found in cases of occult cancer.
Disclosure of Interest: None declared

P10

BORDERLINE LESIONS DIAGNOSED ON BREAST CORE BIOPSY: FREQUENCY OF ATYPIA AND CARCINOMA ON SURGICAL EXCISION – LOCAL CLINICAL EXPERIENCE

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Problem Statement: The current gold standard in breast biopsy is open excision of the suspected lesion. However, an excisional biopsy inevitably results in scar formation. Given the cost and morbidity associated with this procedure less invasive, alternative procedures are of increasing interest. Purpose to determine the upgrade rate of image guided biopsy proven (14G and VACB 9 or 10G) lesions after open diagnostic surgical excision. **Methods:** Retrospective study of biopsy-proven borderline lesions which were surgically removed – local clinical experience. Medical records including final histopathology surgical repots were reviewed and used for data collection. **Results:** Between January 2015 and January 2017 45 image-guided (US or stereotactic) guided 14 G and VACB procedures were performed at Bunbury Regional Hospital and St John of God Hospital Bunbury. 39 female patients, aged 29 to 82 years with mean 62 years age, with borderline lesions underwent open surgical excision and were included in the study. The proportion of Borderline lesions diagnosed on breast core biopsy that subsequently showed atypia and carcinoma on surgical excision was 18%. The overall upstage rate for different biopsy methods was lower using VACB 9 method however was not statistically significant in this study. **Conclusion:** The overall upstage rate in borderline lesions in this study suggests the current recommendation of excisional biopsy of these lesions should continue to be the gold standard. Intact biopsy using VACB is a potential alternative however further study is required before this can be become routine practice.

Disclosure of Interest: None declared

P11

EARLY DETECTION OF BREAST CANCER WITH ALBUMIN AND HEMOGLOBIN ADDUCTS OF ESTROGEN QUINONE

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Problem Statement: Cumulative estrogen concentration is an important determinant of the risk of developing breast cancer. Estrogen carcinogenesis is attributed to the combination of receptor-driven mitogenesis and DNA damage induced by quinonoid metabolites of estrogen. In cancer patients, the ratio of concentration of Alb adducts of E_2-3,4-Q versus that of E_2-2,3-Q adducts (2:1) is higher than that in healthy controls (1:2). Besides, not only is the accuracy of our model superior to any existing result in breast cancer prediction, but also the unity AUC reveals that both data sets (cancer patients and healthy controls) are separable. We strongly advocate the use of both Alb and Hb adducts of estrogen quinine as the biomarkers for the early detection of breast cancer. These biomarkers can supplement the mammographic method when cancer cell have not yet been observed. Taken together, this evidence lends further support to the idea that the cumulative concentration of estrogen quinone-protein adducts is a significant predictor of the risk of developing breast cancer. Methodology developed in this study may be applied to other epidemiological studies and clinical trials in the prevention and early detection of breast cancer. **Methods:** Blood samples from 152 breast cancer patients and 71 healthy women were collected, and the albumin and hemoglobin adducts of E_2-3,4-Q and E_2-2,3-Q as biomarkers to detect breast cancer were extracted. A multilayer perceptron was used as the predictor model. **Results:** A multilayer perceptron using the logarithm of the concentrations of the estrogen quinone-derived adducts (4 input nodes, 10 hidden nodes and 1 output node) was used to predict breast cancer risk with accuracy close to 100% and the area under the curve (AUC) close to 1. The unity AUC reveals that both data sets are separable. The prediction of developing breast cancer is far more accurate than other existing breast cancer detection methods. **Conclusion:** We concluded that albumin and hemoglobin adducts of estrogen quinones are promising biomarkers for the early detection of breast cancer.

Disclosure of Interest: None declared

P12

EFFECTS OF BREAST CANCER OPEN BIOPSY ON THE STATUS OF AXILLARY LYMH NODE METASTASIS

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Problem Statement: To investigate the effects of open biopsy on axillary lymph node staging in breast cancer patients. **Methods:** Axillary lymph node staging data for breast cancer patients were collected between May 2002 to June 2015. Patients were separated into two groups: those who underwent pre-operative open biopsy and those who did not. The post-operative nodal staging was determined according to the American Joint Committee on Cancer (AJCC) 7th edition. The two groups and their relationships to N-stage were analysed and compared. **Results:** In a 13-year period (May 2002~June 2015), total of 4925 cases of breast cancer were collected and analysed. Out of the 4925 cases, 960(19.5%) underwent open biopsy and 3965(80.5%) did not. For those who underwent open biopsy, 764(79.6%) were N0 stage. 40(4.2%) were N0i+ stage. 68(7.1%) were N1mi stage. 88(9.2%) were N1 stage or higher. For those who did not underwent open biopsy, 2859(72.1%) were N0 stage. 187(4.7%) were N0i+ stage. 355(9%) were N1mi stage. 564(14.2%) were N1 stage or higher. The two groups showed statistical difference (Chi-Square test: $P<0.0001$). However, these results may be confounded by tumour size, since larger tumours may be more likely to have lymph node metastasis. Thus, adjusted T-stage by propensity score matching was performed. Results were as follow: For those who underwent open biopsy, 718(79%) were N0 stage. 38(4.2%) were N0i+ stage. 66(7.3%) were N1mi stage. 87(9.6%) were N1 stage or higher. For those who did not underwent open biopsy, 2043(74.7%) were N0 stage. 121(8.1%) were N0i+ stage. 221(8.1%) were N1mi stage. 351(12.8%) were N1 stage or higher. The overall N-stage for all patients (3645) showed: 2761(75.7%) were N0 stage. 159(4.4%) were N0i+ stage. 287(7.9%) were N1mi stage. 438(12%) were N1 stage or higher. The two groups still showed statistical difference (Chi-Square test: $P<0.0389$). **Conclusion:** In contrast to public fear that pre-operative open biopsy may induce tumour cell dissemination to lymph nodes, this preliminary study did not show such phenomenon statistically. The percentage of nodal metastasis is actually less in the pre-operative open biopsy group than the no open biopsy group. These results warrant further investigation in the near future.

Disclosure of Interest: None declared

P13

PURE MUCOCELE-LIKE LESIONS OF THE BREAST– IS THERE A ROLE FOR OPEN BIOPSY AFTER CORE NEEDLE BIOPSY?

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Problem Statement: Mucocele-like lesions (MLL) of the breast fall into the benign pathologic spectrum of mucinous lesions of the breast. Due to the risk of upstaging, excisional biopsy is recommended for those MLL lesions associated with atypia. However, the management of pure MLL (i.e. with no atypia) remains a dilemma with current literature limited to small case series. Our hypothesis is that women with a needle biopsy diagnosis of pure MLL can be safely followed-up clinically without the need for open biopsy. The first arm of this study is to evaluate the upgrade rate of pure MLL in patients who had an excisional biopsy after an initial needle biopsy. The second arm of this

study is to study the rate of disease progression in patients with MLL who opted for imaging surveillance instead of excisional biopsy, to study the rate of disease progression. **Methods:** A retrospective study was performed on all core needle breast biopsies performed in Singapore General Hospital and National Cancer Centre, Singapore between January 2004 and December 2014. There were a total of 118 core biopsy specimens with the diagnosis of MLL. Lesions associated with atypia and invasive carcinoma were excluded, leaving a total of 42 specimens with pure MLL of the breast. Twenty of these patients underwent subsequent excisional biopsy while 22 chose surveillance. An upgrade was defined as the presence of in-situ carcinoma or invasive carcinoma on excisional biopsy. Evaluation of long-term follow-up was performed for those who were at least one-year post-needle biopsy or excisional biopsy. **Results:** The mean age of patients was 46 years (SD 8.22, range 30-79years). Majority of the patients (85.7%, *n*=38) were asymptomatic, identified through routine breast screening mammography with new mammographic calcifications (n=33), or progressive microcalcifications on follow-up surveillance mammography (n=5). 4 presented with a palpable mass. Of the 20 patients who underwent excisional biopsy, there was only one with a histological upgrade to in-situ carcinoma (DCIS) (n=1/20, upgrade rate 5%). This patient had a positive family history of breast cancer. With close surveillance of our patients post biopsy, there was no evidence of recurrence nor further biopsies of the same site revealing atypia or malignancy (mean follow-up 51 months, range 12-120mths, n=35). Similar findings were noted in those placed on clinical surveillance after initial needle biopsy. **Conclusion:** This is the first and largest series in South East Asia evaluating the need for open biopsy in pure MLL diagnosed on needle biopsy. Pure MLL is a rare diagnosis, and in women with pure MLL diagnosed on core needle biopsy, the upgrade rate on excisional biopsy is very low (5%). As such, close clinical and radiological surveillance is a reasonable and safe alternative to excisional biopsy in this group of women. Excisional biopsy, however, should be recommended for women with a family history of breast cancer.
Disclosure of Interest: None declared

P14

BREAST CANCER TREATMENT DELAYS AMONG YOUNG WOMEN IN A DEVELOPING COUNTRY

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Problem Statement: Breast cancer is the second most common cancer in the world, and the most frequent cancer in women with approximately 1.67 million new cases diagnosed in 2012, and half of these cases occurring in less developed regions. Breast cancer affects young and older women, but in developing countries, the affected population entails up to 50% of women younger than 54 years. Low and middle income countries (LMICs) report a high breast cancer mortality as a result of late-stage diagnosis, which leads to poor outcomes when combined with delayed therapy. The few available data suggests that only between 5 and 10% of breast cancer cases in Mexico are detected at initial stages when compared to 50% in the USA. Prognosis in breast cancer depends on stage at diagnosis, thus, survival correlates with the existence of early detection programs and provided health services. Care delay has been subdivided in patient delay (PD) and health system (SD) delay. The objective of this study was to compare treatment delays among young women with breast cancer. **Methods:** We performed a retrospective study of women diagnosed with breast cancer who were treated at the National Institute of Medical Sciences and Nutrition in Mexico City, Mexico, between February 2004 and June 2017. The dataset used for this retrospective study derived from patients' information collected from the hospital medical records. Time intervals were: 1) Global interval (detection to treatment), 2) patient interval (detection to consultation), and 3) health system interval (consultation to treatment). Patients were dichotomized according to age (< 50 and ≥ 50 years). Continuous and categorical variables were presented as median and percentages, respectively. *Mann–Whitney U test and* chi-square were used. Statistical significance was set at p < 0.05. All analyses were carried out using IBM-SPSS-Statistics v.21. **Results:** Four hundred and four patients were included. Patients' characteristics are shown in *table 1*. Most patients had ≥ 50 years (n=303, 75%). More patients < 50 years presented with clinical stage IV compared to ≥ 50, 12% and 6%, respectively (p=0.09). Detection methods were as following: breast self-exam in 82% vs 53% patients aged < 50 and ≥ 50, respectively. Screening mammogram was more frequent in patients ≥ 50 (n=119, 39%, p <0.0001). Differences between the two groups were statistically significant for patient interval, 7 vs 3 weeks, p <0.0001 and global interval, 19 vs 12 weeks, p=0.003. No differences were observed in the health system interval, 7 weeks for both groups (p=0.3).
Table:

Table 1. Patients' characteristics.

Characteristics	<50 years, n (%)	≥50 years, n (%)	p
Population	101 (25)	303 (75)	
Age	Median: 43 (23-49)	Median: 62 (50-89)	<0.0001
Living region			
Mexico City	57 (56)	186 (61)	0.4
Rest of the country	44 (44)	117 (39)	
GDP per region			
< 150,000 $	41 (40.5)	192 (63)	0.4
≥ 150,000 $	60 (59.5)	111 (37)	
Living area			
Urban	94 (93)	285 (94)	0.7
Rural	7 (7)	18 (6)	
Educational attainment			
None	1 (1)	15 (5)	0.008
Elementary to high school	67 (66)	213 (70)	
Bachelor or higher	29 (28)	66 (22)	
Unknown	4 (5)	9 (3)	
Marital status			
Married	51 (51)	132 (44)	0.006
Other	50 (49)	171 (56)	
Occupation			
Employed	46 (45.5)	92 (30)	0.001
Unemployed	43 (42.5)	182 (60)	
Unknown	12 (12)	29 (10)	
Social work level			
I-II	31 (31)	91 (30)	0.2
III	55 (55)	132 (44)	
IV-VII	15 (14)	80 (26)	
Detection methods			
Self-breast exam	83 (82)	161 (53)	<0.0001
Clinical exam	5 (5)	23 (7.5)	
Screening mammogram	13 (13)	119 (39.5)	
Clinical stage			
Loco regional	89 (88)	283 (93)	0.09
Metastatic (IV)	12 (12)	20 (7)	
First line treatment			
Surgical	39 (39)	110 (37)	<0.0001
Pharmacological	61 (60)	189 (62)	
Other/unknown	1 (1)	4 (1)	

Abbreviations: GDP: Gross domestic product (mxn).

Conclusion: In developing countries, the immediate health care access for breast cancer patients, focusing on women aged < 50 years should be prioritized as an initial step to reduce the global treatment initiation interval in order to reduce mortality. Although studies in developed countries have demonstrated that most younger women do not have a delayed diagnosis of breast cancer and seek health care providers shortly after noticing symptoms and are usually diagnosed within a month, we demonstrated that younger women in low-middle income countries like Mexico may be more likely than other younger women to delay seeking medical help when they notice symptoms.
Disclosure of Interest: None declared

P15

AN EFFICIENT GRADIENT-DISTORTION METHOD FOR ACCURATE DIAGNOSIS OF HUMAN ORGAN MEDICAL IMAGE

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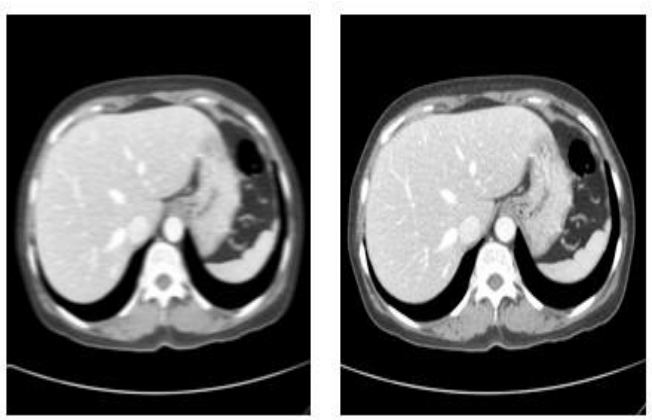
Problem Statement: Diagnostic medical images (DMIs) is blurred or degraded by several factors, some of which are due to inherent property and suboptimal operation by the imaging device. Patient and organ movements as well as organ location also degrade the DMI quality. There is no objective definition of DMI quality; it is more a matter of the observer's subjective judgement. This often leads to a wrong diagnosis in the perspective of interpretation and also can affect patients negatively such as radiation exposure because of retaking another image. Hence, a noble solution is needed which can reproduce an image of high quality in order to secure a correct diagnosis. **Methods:** This paper describes a gradient-distortion correction method by using inverse filtering approximation for reducing and compensating the spatial blur distortion in (damaged) DMIs. With calculating and analyzing statistical values of DMI and original one mathematically, proposed method could be applied

apply to real case of diagnosis. **Results:** The proposed method provides a restored image of high quality to secure a correct diagnosis and also allows direct and simple computation of inverse-filter coefficients with restoration parameter, length and phase constraints.

Image/Graph:



Conclusion: Based on the acquired parameters, the simulation result is shown to provide a complete and accurate solution for DMIs of high quality, as indicated in upper figure. Hence, a solution to the problem encountered in the previous methods is found and also this can be applicable to forensic science field to restore degraded crime scene.

Disclosure of Interest: None declared

P16

TUMOR SIZE AND PROLIFERATIVE MARKER GEMININ RATHER THAN KI67 EXPRESSION LEVELS WERE SIGNIFICANTLY ASSOCIATED WITH MAXIMUM UPTAKE OF 18F-DEOXYGLUCOSE LEVELS ON POSITRON EMISSION TOMOGRAPHY FOR BREAST CANCERS

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Problem Statement: It has been well established that maximum standardized uptake value (SUVmax) for ^{18}F-fluorodeoxyglucose positron-emission tomography/computed tomography (FDG PET/CT) is clinically useful for evaluating treatment efficacy as well as predicting prognosis of breast cancer patients. Although SUVmax reflects increased glucose uptake and metabolism possibly induced by activation of growth factor signaling or TP53 dysfunction, tumor characteristics of SUVmax-high breast cancers remain to be elucidated. **Methods:** For the present study, we used immunohistochemical staining to investigate expressions of phospho-ribosomal protein S6 (pS6, downstream molecule of phosphatidyl inositol 3-kinase/Akt/mammalian target of the rapamycin/S6K pathway) and phosphor-p44/42 mitogen-activated protein kinase (pMAPK). Expression levels of TP53 and proliferative marker geminin as well as Ki67 were also examined by means of immunostaining in 163 invasive breast cancers. Cutoff values were set at 10% for pS6, 20% for pMAPK and TP53, and 4% for geminin. **Results:** The SUVmax levels were significantly higher in the pS6-positive (p=0.0049) and geminin-high cancers (p<0.0001) than in the -negative and -low cancers, respectively, but there were no significant associations between pMAPK or TP53 expression levels and SUVmax levels. Multivariable analysis showed that a high geminin level (odds ratio: 6.497, 95% confidence interval: 2.427-19.202, p=0.0001) and large tumor size (6.438, 2.224-20.946, p=0.0005) were significantly and independently associated with SUVmax-high. Univariable but not multivariable analysis indicated that Ki67-high significantly correlated with SUVmax-high. 20 of 23 (87.0%) breast cancers with tumor size >2cm and geminin-high showed SUVmax-high, while only 6 of 49 (12.2%) breast cancers ≤2cm in size and with low geminin levels were SUVmax-high. **Conclusion:** In conclusion, we could determine that breast cancers with a large tumor and a geminin-high rather than Ki67-high proliferative marker were significantly associated with high levels of SUVmax. These findings may signify that SUVmax reflects tumor characteristics with high proliferative activity but not activation of mTOR/S6K and MAPK pathways or increased glucose metabolism due to dysfunction of TP53.

Disclosure of Interest: None declared

P17

COMPUTED TOMOGRAPHY LIVER SPLEEN RATIO AS PREDICTIVE MARKER OF LIVER INJURY AMONG ADULT FILIPINA EARLY BREAST CANCER RECEIVING NEOADJUVANT THERAPY FROM 2010-2016: A SIX-YEAR RETROSPECTIVE STUDY

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Problem Statement: We aim to determine association of Computed tomography liver spleen ratio (LS ratio) to liver function test during neoadjuvant treatment and who among those early breast cancer to develop liver injury. Predicting those patients who from the start is at risk of liver injury can is of value to oncologist. **Methods:** Retrospective review in the Philippines for Stage I-III invasive breast cancer. Computed tomography LS ratio was reviewed by one radiologist. LS ratio cut off values were tested of their accuracy in terms of sensitivity, specificity, negative, and positive predictive values wherein a computed AUC of > 0.70 is considered significantly valid predictive markers. **Results:** Total of 35 patients. Average age of 53.91 years old, 57% had stage IIIB cancer. Patients' average liver spleen ratio was 1.10±0.30 at the start, then, it slightly increased towards the end of the treatment (1.13±0.32). SGPT (37.43 to 35.09, p=0.479) changed from start to end of treatment. Higher rates of liver injury at the start of treatment were as follows, 1(100%) with DOCETAXEL-TRASTUZUMAB, FAC (1,100%), and TAC (1, 11.1%). End of treatment, liver injury were noted among those with AC (1,50%), FAC (1,100%), EPIRUBICIN, DOCETAXEL (1,25%), and TAC (1,11.1%). Liver spleen ratio is significantly correlated with SGPT (r= -0.541, p=0.001). At end of treatment, LS ratio is correlated with SGPT (r = -0.464, p=0.005) . LS ratio has higher sensitivity at start of treatment 100% at cut off 0.52, while at end of treatment the cut off was 0.87 has higher sensitivity (100%) in predicting liver injury. Based on AUC, LS ratio at the end of treatment showed higher accuracy (AUC =0.597) indicating the LS ratio can be utilized as marker for predicting liver injury. **Conclusion:** Higher rates of liver injury at the start of treatment were seen those given Docetaxel- Trastuzumab, FAC and TAC. No liver injury for patients with hormonal treatment. End of treatment, liver injury seen in receiving anthracycline- based regimen. Liver spleen ratio is significantly correlated with SGPT. LS ratio at the end of treatment showed higher accuracy indicating the LS ratio be utilized as marker for predicting liver injury.

Disclosure of Interest: None declared

P18

BREAST TISSUE STABILITY OF THE SAVI SCOUT REFLECTOR FROM IMPLANTATION TO EXCISION: A POST-HOC ANALYSIS FROM A PROSPECTIVE MULTI-SITE TRIAL

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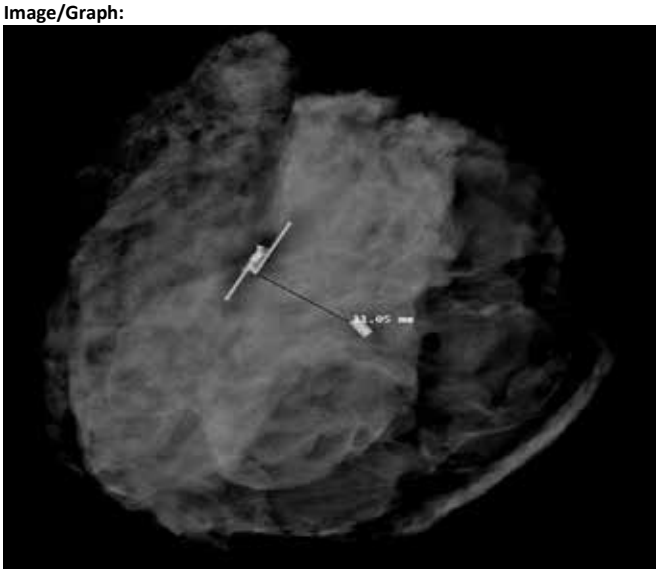
Problem Statement: The SAVI SCOUT radar localization (RL) system is a wire- and radiation-free approach to breast tumor localization and surgical guidance. SCOUT has been shown to be a reliable alternative to wire and

radioactive seed localization techniques, with good surgical outcomes, and excellent patient, radiologist, and surgeon acceptance. In this study, we analyzed post-placement and specimen images to measure the distance of the reflector from a biopsy clip to quantify possible reflector movement between implantation and excision. **Methods:** We screened de-identified data sets and images from a recently completed multi-center prospective trial designed to measure clinical utility of the SCOUT system for localization during excisional biopsy and lumpectomy cases. Of 153 cases screened, 41 cases met the following inclusion criteria: 1) the availability of post-placement mammography DICOM images showing both craniocaudal (CC) and 90-degree true lateral (TL) views, 2) the presence of a biopsy clip as the target or part of the lesion target, and 3) specimen radiography showing both reflector and clip in the same intact specimen. Three separate readers measured biopsy clip-to-reflector distances in millimeters from the available images. The distance of possible tissue migration was calculated as the absolute value of the clip-to-reflector distance in the post-placement images minus that in the specimen image. The average distance and 95% confidence interval for the population mean was calculated using the t-distribution with n-1 degrees of freedom. Breast density at the lesion location, time interval (days) between reflector deployment and surgery and the presence of other relevant findings, such as hematoma and lesion calcifications were also noted. **Results:** The study population had an average age of 60.7 (range 32 – 80) years. The time between deployment and surgery averaged 2.7 (range 0 – 6) days. Breast density at site of the lesion was scored as "fatty" in 5 (12.5%) cases, "mild/scattered" in 8 (20.0%) cases, "moderate" in 25 (62.5%) cases and "marked" in 2 (5.0%) cases. Eight (20.0%) cases had calcifications in the area of the lesion target and 2 (5.0%) cases had radiological evidence of a hematoma in the lesion. The average change in distance from clip to reflector between the placement and specimen images was 1.97 mm, with a 95% confidence interval of 1.24 – 2.69 mm. Only one case (2.4%) had an apparent migration of >1 cm and 18 cases (43.9%) had an apparent migration of <1 mm. No statistically significant differences in apparent migration based on patient age, number of days deployed, breast density, or presence of calcifications or hematomas were demonstrated.

Image/Graph:



Conclusion: Theses results suggest good geometric/anatomic stability of the SCOUT reflector implanted in breast lesions for up to 7 days. Since the FDA has recently approved implantation of the SCOUT reflectors for up to 30 days, further investigation into longer term tissue stability may be of interest.

Disclosure of Interest: J. Lee: None declared, P. Eby: None declared, S. Shivers: None declared, C. Cox Grant/Research support from: Device sponsor, Cianna Medical, Inc., Consultant for: Device sponsor, Cianna Medical, Inc., Speakers bureau for: Device sponsor, Cianna Medical, Inc.

P19

MASTECTOMY SKIN FLAP PERFUSION WHEN USING PICO® "NEGATIVE PRESSURE WOUND DRESSING" THERAPY

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Problem Statement: The single use PICO (Smith and Nephew Healthcare, Hull, United Kingdom) negative pressure wound therapy (NPWT) dressing has the potential to revolutionize our management of various acute, chronic, and high output wounds. In this trial we intend to utilise fluorescence angiography in the perioperative setting to visually assess superficial blood flow and how it is affected by the use of PICO. **Methods:** The Prospective randomized non-blinded clinical trial includes 10 participants requiring mastectomy. The participants will be randomised into received PICO vs standard dressings at the end of the procedure. Blood flow at the mastectomy wound using SPY angiography will be recorded immediately post mastectomy and at 2 weeks post. In the intervening 2 week period a PICO dressing or standard dressing will be applied. Differences between the two recordings will be analysed for changes in blood flow. **Results:** Blood flow at the mastectomy wound using SPY will be recorded immediately post mastectomy and at 2 weeks post. In the intervening 2 week period a PICO dressing will be applied (changed at 7 days). Differences between the two recordings showed blood flow was increased by 21% on average in the PICO group. This compared with a 16% increase in blood flow in the control group. **Conclusion:** Blood flow at the mastectomy wound during the post operative period was increased in patients using PICO dressings in comparison with simple occlusive dressings. PICO has potential benefit of improving mastectomy flap vascularity and therefore to improve wound healing and reduce post-operative wound complications.

Disclosure of Interest: None declared

P20

LIPOFILLING AS BRIDGE TO IMPLANT-BASED DELAYED BREAST RECONSTRUCTION IN POST-MASTECTOMY RADIATION THERAPY PATIENT

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Problem Statement: The treatment of breast cancer often involves mastectomy and radiation therapy. The deleterious effect of radiation to the chest wall rendered its skin, subcutaneous tissue, and muscle fibrotic and of poor quality. This makes the option of delayed breast reconstruction with implant feared by many reconstructive surgeons for this group of patients in view of the high risk of failure and poor cosmetic outcome. The option of autologous reconstruction is known to be associated with less complications albeit the presence of donor site morbidity. Furthermore, it may not be a suitable option for some patients. The role of lipofilling as adjunct to reconstructive options in post mastectomy radiation therapy (PMRT) patients has been increasingly recognized. The adipose-derived stromal cells (ADSC) from fat grafting are the key to the improved quality of the irradiated tissue. Lipofilling, therefore, increases the chance of post mastectomy radiation therapy (PMRT) patients receiving a safe and cosmetically-pleasing direct-to implant-based delayed breast reconstruction without the use of tissue expander. We report our experience with the use of lipofilling acting as a bridge to direct-to implant-based delayed breast reconstruction in this group of patients. **Methods:** 1st: Fat harvesting: liposuction of the abdomen and/or thighs, 200 cc/session. 2nd: Fat preparation: gravitational or mechanical methods, leaving only the cellular parts for injection. 3rd: Lipofilling into the subcutaneous and intramuscular layers with care taken to inject small amounts in each spaces and each passes, avoiding injecting large amounts directly into the mastectomy cavity. 4th: Subpectoralis pocket creation and implant insertion. Generally, 2-3 sessions of lipofilling, 3 months apart, were needed before the irradiated tissue of the mastectomy site was deemed

suitable for implant insertion. **Results:** All our cases were patients who had PMRT. The median time of patients completing PMRT to the time of delayed breast reconstruction was 46 months. We find that lipofilling improves the quality of irradiated tissue sufficiently to allow for direct-to implant-based delayed breast reconstruction with good outcome. No complications were observed in 5 cases performed thus far, at the average follow up time of 10 months.

Image/Graph:

Conclusion: Direct-to implant-based delayed breast reconstruction after lipofilling is a feasible and safe option for breast cancer patients who have had mastectomy and radiation therapy.

Disclosure of Interest: None declared

P21

COMPARISON BETWEEN NEGATIVE PRESSURE WOUND THERAPY ON PARTIAL MAMMECTOMY SCAR AND DRY DRESSING IN A PATIENT WITH HIGH RISK FACTOR OF BAD HEALING

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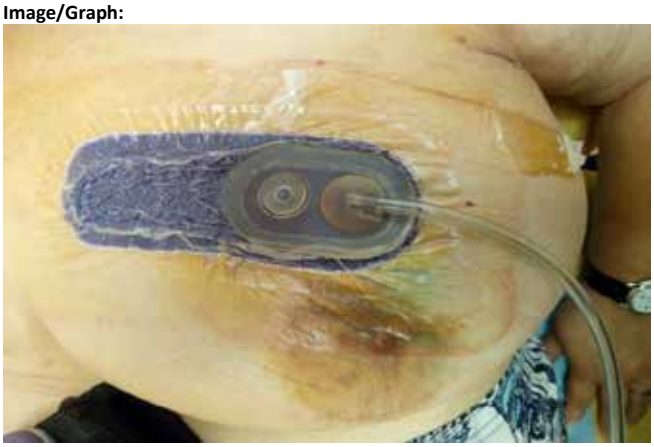
Problem Statement: It is known that some factors, like diabetes and obesity, are responsible of bad healing and local infection. The use of Negative Pressure Wound Therapy (NPWT) like PREVENA tm, applied preventively and directly on wounds, has shown efficiency in reducing postoperative morbidity in several studies after bariatric surgery, orthopedic surgery or cardiovascular surgery, particularly in patient with high risks of bad wound healing. We used this device, in prevention, in one patient, diabetic and obese, on partial mastectomy wound, compared with a dry dressing on her sentinel node scar. **Methods:** We performed a partial mastectomy associated with axillary lymph node dissection in a patient with several risks of bad wound healing (diabetes, obesity and antecedent of bad wound healing) for infiltrating ductal breast carcinoma (Scarff Bloom and Richardson three, positive hormone receptor, HER2 negative and Ki67 five percent). On the mastectomy scar we dressed directly the PREVENA TM, and on the sentinel node scar we applied a standard dry dressing. **Results:** Seven days after the operation, we controlled the two scars. There was no complication. Three days after, the patient came at our hospital for purulent discharge on her sentinel node scar. We associated antibiotic therapy and daily local care on the sentinel node scar until complete cicatrization. Partial mastectomy scar shown no complication at all compared to the sentinel node scar. Bad wound healing and surgical site infection provides additional medical costs for society by increasing hospital stay, home care nursing, antibiotics treatment, and increase morbidity. Used preventively, NPWT might help reduce bad wound healing, reduce costs for society and decrease morbidity for patients with high risks of bad wound healing.

Image/Graph:



Conclusion: Use of NPWT prevently, on patient with high risks of surgical site infection, could reduce the incidence of complication decreasing cost for society and morbidity. This case report show that NPWT could be useful on high-risk patients. A randomized multicenter trial should be conducted to validate the indication of NPWT in prevention of bad wound healing and surgical site infection on high-risk patients.

Disclosure of Interest: None declared

P22

MANAGEMENT OF CENTRAL TUMORS WITH THE GRISOTTI TECHNIQUE

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Problem Statement: Traditionally, the breast tumors located in the retro areolar region have been managed by mastectomy. Nowadays, the development of new oncoplastic procedures permit large breast glandular exeresis with good cosmetic results. In 1993, Grisotti and *al* described a new oncoplastic technique for centrally breast cancer. It consists to remove the nipple areola complex and a cone of glandular tissue, where the tumour is located, down to the pectoral fascia with mobilization of a dermo glandular flap into the central defect to remodel the breast and recreate an areola. This technique could avoid deformation related to radiotherapy and allows a better acceptance of the surgery thanks to the new areola. Few studies assess this procedure but the initial results were encouraging. The aim of this study was to assess the surgical outcome, the oncological safety and the patient satisfaction of this technique. **Methods:** From September 2016 to July 2017, we operated 9 patients in our hospital from centrally located breast tumours with the Grisotti oncoplastic procedure. We used either comma shape (4/9) or inverted-T incision (5/9). We performed axillary lymph node dissection in three patients, five patients benefited from sentinel lymph node dissection and one patient only benefited from partial mastectomy. The pre-operative histology was invasive ductal carcinoma for 8 patients and in situ papillary carcinoma for 1 patient. **Results:** The median age was 58,5 years (45; 55). The median BMI was 25,8 kg/m² (23; 32). Three patients were smokers. The median size of the tumours was 23 mm (50; 10). There was no per-operative complications and the median operative time was 96 min (60; 150). The median weight of the operative specimen was 39 g (23; 51). The post-operative histology was invasive ductal carcinoma for 8 patients and in situ papillary carcinoma for 1 patient. The margins was invaded in one patient (we performed later a mastectomy) and < 1 mm in one patient (completed by a wider resection which was free of tumor). We recorded 2 complications: surgical site infection in one patient and wound dehiscence. There was no necrosis of the new areola. The aspect of the breast after radiotherapy was excellent in terms of volume, shape and aspect of the new areola.

Image/Graph:

Conclusion: The Grisotti technique is a safe oncoplastic procedure, easily reproductible and without major complication. It permits to realize an effective central partial mastectomy, to refill the glandular central defect and rebuild a new areola that can be tattooed after radiotherapy. This technique gives a high satisfaction rate, both for the patients and the surgeons. In our hospital, we will continue to perform this procedure to treat the centrally located breast tumours. We will assess the procedure over the long term.
Disclosure of Interest: None declared

P23

BREAST ONCOPLASTIC OPERATIONS IN BREAST CANCER PATIENS WITH UNFAVORABLE PROGNOSTIC FEATURES

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Problem Statement: The aim of this work is to evaluate the results of multidisciplinary treatment of oncoplastic operations in breast cancer patients with unfavorable prognostic features. **Methods:** During 2012 01 01-2017 06 01 4201 pts with BC underwent combined treatment at National Cancer Institute. The data on vital status of all pts were summarized by July 1, 2017. The oncoplastic operation was used as primarily selection criteria. The 143 BC pts, (aged 32-80 years) with unfavorable prognostic features (young age, G3, "large" T2/ T3, multifocal/multicentric, triple negative tumors) were selected for the retrospective analysis. The median follow-up time was 48 months. 99.31% of pts were found alive by end of follow-up. The management of all pts; additional radiologic examination (MRI, breast biopsy in cases of the multifocal and multicentric disease); volume of removed tissue and oncoplastic techniques; options of the neoadjuvant and adjuvant treatment, were discussed during tumor board meetings. In pts with stage I, II BC (T<2, 5 cm) 54 oncoplastic level I (Benelli lift, Grisotti flap, "L", "J" – mammoplasties) operations were performed. In cases of large T2> 2,5 cm stage II-III BC 78 oncoplastic Level II operation with reduction mammoplasty (lateral, superior/inferior pedicle, inverted T) were performed. In cases with T2-T3 tumors and multicentric disease, nipple-sparing mastectomies with implant reconstructions (12 pts) were performed. Breast oncoplastic operations with sentinel node biopsy were performed in 45.6% of all pts, with axillary dissection (level I-II) in - 54.4%. Pts with luminal A breast cancer received adjuvant hormonotherapy. In cases of locally advanced or triple-negative BC received chemotherapy – 4 cycles AC+ 4 cycles of taxanes (docetaxel, paclitaxel). In cases of Her2 positive BC received biological therapy. All pts received postoperative irradiation. **Results:** Distributions of pts according TNM were: stage I (T1NO) -50 pts (34.72%), stage II (T1-2N1) -58 pts (40.3%), stage III (T1-2-3N2-3) -28 pts (19.7%), stage0 (TisNO) 8 pts (5.6%). In 22.4 % of pts tumor size was larger than 3 cm (range 3cm 6 cm). Distributions of pts according histology were: the invasive lobular cancer - 16 (11.8%), invasive ductal cancer - 118 pts (86.8%), invasive mucinous cancer - 2 pts (1.49%). Distributions of pts according "G" were - "G1"- 18 (13.4%), "G2"- 54 (39.7%), "G3"- 64 (47.8%). Distributions of pts according biological profile were: Luminal a 68 pts (47.2 %), Luminal b 47pts (32.6%) triple-negative 13pts- (10.4%), Her 2 3+- -9,7%. In 24.31% of pts multifocal/multicentric tumors were found. Multifocal/multicentric BC was found in 47.1% of all invasive lobular tumors. In 19.3% of all invasive ductal cancers - multifocal/multicentric tumors were diagnosed; of them -26,5% were luminal a, - 23.4% luminal b, - 22.2% Her 2 positive, - 13.3 % were triple negative. In 1,39 % of cases local recurrence was diagnosed (1 in axillae and 1 in the operated breast- T3N3M0 luminal B after 5 years). One pts died 3 years after operations (stage III T2N2M0 triple negative BC). **Conclusion:** 1. According to our preliminary data- the modern radiological evaluation of BC, tumor board meetings, adequate oncoplastic technique and multidisciplinary treatment allowed successful breast oncoplastic operations in pts with unfavorable prognostic features. 2. Pre-operative breast MRI and breast biopsy increased the detections of residual lobular and ductal non-palpable BC
Disclosure of Interest: None declared

P24

THE EFFICACY AND TOLERABILITY OF T-DM1 IN JAPANESE HER2 POSITIVE METASTATIC BREAST CANCER PATIENTS

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Problem Statement: Human epidermal growth factor receptor 2 (HER2) protein is associated with poor prognosis. But in recent years, the development of the HER2-targeted agents remarkably improved its prognosis. By the result of EMILIA study, trastuzumab emtansine (T-DM1) was approved as second-line therapeutic drug of the HER2 positive metastatic breast cancer (MBC) patient. However, there are few data about the effect and tolerability of T-DM1 in clinical practice, and it is unclear about the effect of T-DM1 in the patients who received prior pertuzumab (PER). **Methods:** A total of 73 HER2 positive MBC who has administered T-DM1, from January, 2014 to April, 2017 were analyzed retrospectively, in terms of overall survival (OS), progression free survival (PFS), time to treatment failure (TTF), response rate (RR), clinical benefit rate (CBR), disease control rate (DCR) and adverse events (AEs). Evaluation of the tumor was in accordance with Response Evaluation Criteria in Solid Tumors (RECIST; version 1.1). Patients were monitored for adverse events, which were graded by National Cancer Institute's Common Terminology Criteria for Adverse Events [NCI CTCAE], version 4.0. SPSS version 22 was used for statistical analysis. **Results:** The median observation period was 14.4 months (1.9 to 38.4 months). In 73 patients, median OS was 29.0 months, median PFS was 7.0 months (95%CI, 3.4 to 10.7), median TTF was 6.5 months (95% CI, 4.6 to 8.5) and RR was 32.9%. As 2nd line treatment (n=25), median OS was 24.4 months (95%CI, 14.6 to 34.2), median PFS was 7.0 months (95%CI, 5.0 to 9.0) and RR was 32.0%. Fifteen out of 25 patients had received prior therapy with PER, but RR was better in the group without PER. As 3rd line or latter treatment (N=35), median OS was 18.7 months (95%CI, 2.6 to 34.8), median PFS was 4.5 months (98%CI, 0.0 to 10.1) and RR was 31.4%. In 38 patients who had received prior therapy with PER, median OS was 17.5 months (95%CI, 6.4 to 28.7), median PFS was 7.5 months (95%CI, 0.2 to 14.6) and median duration of therapy was 5.1 months (range, 0.7 to 27.1 months). It tended to be short duration of T-DM1 therapy in the patients whom duration of PER were short. However, it is noteworthy that 16 out of 38 patients (42.1%) were able to administer T-DM1 longer than PER treatment success period. Safety analysis was performed on 73 cases. The frequency of adverse events in any event, any grade was 94.5% and that of grade 3 was 23.3%. The most common adverse events were GOT and GPT increase and thrombocytopenia. **Conclusion:** A total of HER2 positive MBC who has administered T-DM1 were

analyzed retrospectively. T-DM1 is effective and tolerable in each line of therapy, as previously reported in EMILIA and TH3RESA study. And it was shown that T-DM1 is also effective in the patients who received prior PER.
Disclosure of Interest: None declared

P25

SIGNIFICANCE OF KI67 IN PREDICTING RESPONSE TO NEOADJUVANT CHEMOTHERAPY IN HER2-POSITIVE BREAST CANCER PATIENTS

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Problem Statement: Breast cancer (BC) Pathological complete response (pCR) is associated with favorable event free survival in HER2 enrich subtype after neoadjuvant chemotherapy(NAC). We previously reported that pCR rate was related to higher level of ki67 index in HER2-positive BC with various regimens. In this study, we investigated the predictor of pCR for HER2-positive BC patients with the unite regimen of NAC. **Methods:** We retrospectively investigated 78 primary HER2-positive invasive BC patients, who have been treated by surgery after NAC from September 2011 to November 2016 in our institution. The patients with stage IV or inflammatory BC had been excluded. All patients were treated with anthracycline followed by taxane and trastuzumab in the NAC. Expression of HER2 was defined by either 3+ on immunohistochemistry (IHC) or 2+ on IHC with positive for fluorescence in situ hybridization (FISH) analysis. The ER expression, PgR expression, nuclear grade and ki67 index were evaluated by core needle biopsy specimens before NAC. The ki67 index was measured visually by one pathologist. These factors were evaluated pre-chemotherapy (for their relationship with pCR). Additionally, we made sub-analysis stratified by subtypes of HER2-enriched (i.e. negative for ER and PgR expression) or luminal HER2 (i.e. positive for ER and/or PgR expression). **Results:** The median age was 49.1 years (range; 23-72) and all patients were female. Forty four patients were ER positive (luminal HER2) while 34 cases were negative (HER2-enriched). Histological classification was as follows: 72 patients were invasive ductal carcinoma; 4 patients were special type. The pCR was achieved in 32 patients (41.0%) among all of patients, 9 patients (26%) among patients with luminal HER2 BC and 23 patients (52%) among patients with HER2-enriched BC. In all 78 patients, the pCR rate was significantly higher in the ER negative patients than ER positive patients (52% vs 26%, p = 0.0036). When the cut-off value of ki67 was defined as 20% or 50%, no significant difference was observed between patients with pCR and non-pCR by both cut-off, in the analysis with all patient or stratified by luminal HER 2 and HER 2-enriched. There was also no significant difference between histological evaluation for NAC and PgR expression or nuclear grade. The pCR was not observed in all three patients with ki67 index less than10% in both ER positive and negative patients. **Conclusion:** We found no patients with Ki67 lower than 10 % achieved pCR and a significantly higher pCR rate in ER negative patients than ER positive patients in HER2 subtype. Low ki67 might be took into account for the eligibility of NAC. Larger studies are needed to validate it.
Disclosure of Interest: None declared

P26

THE EXPERIENCES OF THE USE OF T-DM1 FOR DISTANT METASTASES IN HER2-POSITIVE BREAST CANCER

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Problem Statement: HER2-positive breast cancers were approximately 15% in the whole breast cancer in Japan. We can use some kinds of drugs for the chemotherapy in HER2-positive breast cancer. TDM1 was the one of the drugs for metastases of breast cancer. It's been marketed since 18 / April / 2014 in Japan. And this drug has been determined to use for the inoperability or recurrence HER2-positive breast cancer in Japan. In our institute T-DM1 was administered for 26 distant metastases cases in HER2 positive breast cancer. We retrospectively studied these cases and reported. **Methods:** In the breast center of the Showa University, we experienced 16 metastases cases, which were ER positive or PgR positive and 10 metastases cases, which were ER negative and PgR negative in HER2-positive breast cancer. These 26 cases had clinicopathological features (Age, Biomarker, History of the drugs, Drug lines, Time to Failure: TTF) and were analyzed. **Results:** T-DM1was administered to the 26 cases. The average age was 52 years old. Dosing term of T-DM1 hasn't been depended on the history of the treatment lines (p=N.S.) or the history of the Taxanes (p=0.915). However, after comparing the administration term of the TDM1 of the Lumin al-HER2 group with the HER2-enrich group, we recognized significantly the extension of TTF in Luminal-HER2 group than HER2-enrich group (p=0.0004). Graph: The TTF Luminal-HER2 group was superior than HER2-enrich group) (Table: The average duration of T-DM1 chemotherapy of each Lumi-HER2 and HER2-enrich group which has not been affected by T-DM1 treatment line).

Image/Graph:

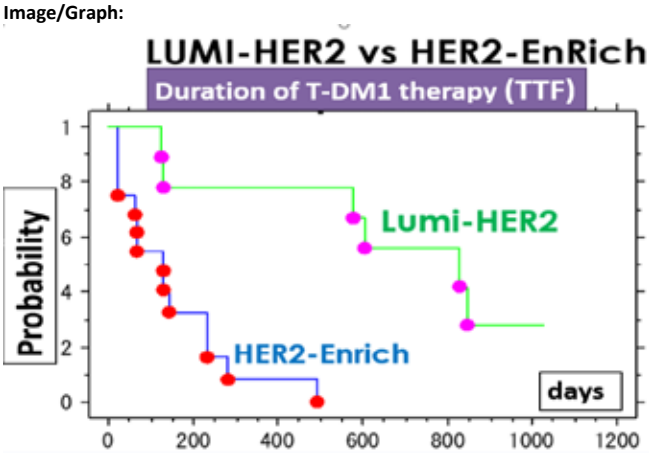

Table:

T-DM1 Treatment Line \ Subtype	Luminal-HER2 group Average duration of the T-DM1 treatment (day)	HER2-enrich group Average duration of the T-DM1 treatment (day)
1st line	605	21
2nd line	467	155
3rd line	546	250
4th line	42	45
5th and later	894	79

Conclusion: These results were useful for everyday medical treatment that the long-term administration (TTF) had in the Luminal-HER2 group than the HER2-enrich group. Although the furthermore experiences of T-DM1 treatment might be required, we think that Luminal-HER2 group would more likely become a predict factor for chemotherapy of T-DM1 effect.
Disclosure of Interest: None declared

P27

COMPARISON OF SENTINEL LYMPH NODE BIOPSY BETWEEN INVASIVE LOBULAR CARCINOMA AND INVASIVE DUCTAL CARCINOMA

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Problem Statement: Introduction: Invasive lobular carcinoma (ILC) constitutes 5–15% of all breast carcinoma, and its pathological and clinical features are different from those of invasive ductal carcinoma (IDC). Axillary lymph node dissection (ALND) can provide regional control for breast cancer with axillary lymph node (ALN) metastasis, however, this carries substantial side-effects such as edema. Thus, sentinel lymph node (SLN) biopsy is the standard surgery for early-stage breast cancer. Furthermore, recent studies reported that SLN biopsy did not result in an inferior prognosis compared with ALND when limited SLNs were positive, and they suggested that ALND can be avoided in breast cancer patients with limited SLN metastasis. However, these trials included only a few ILC cases, and as such the validity of omitting ALND for ILC is still controversial. Therefore, in this study, we considered whether omitting ALND is adoptable in ILC treatment. **Methods:** Methods: Three thousand seven hundred seventy one patients underwent surgery for breast cancer at Aichi Cancer Center hospital between January 2006 and December 2015. We obtained clinical and pathological data of all patients from their medical records retrospectively. ILC diagnosis was defined by a typical appearance of microscopic pathological features and immunohistochemical staining of E-cadherin. We excluded patients with neoadjuvant therapy (chemotherapy and endocrine therapy) or without axillary management, and identified 185 patients with ILC and 2420 with IDC. We compared the axillary dissection procedure and the rates of patients with SLN metastasis between the ILC and IDC cohorts. Moreover, we examined the number of total ALN metastasis including SLNs and non-SLNs in patients with SLN metastasis, and the factors that influenced non-SLN metastasis when the SLNs were positive. The data were examined using STATA software version 12.0. **Results:** Results: Patient characteristics (age, clinical stage, hormone receptor status, HER2 status) were well balanced between the ILC and IDC cohorts. Initial ALND was performed in 14(7%) ILC and 271(11%) IDC cases. SLN biopsies were performed in 171(93%) ILC and 2149(89%) IDC cases, and SLN-positive patients were 25(14%) and 368(17%), respectively (p=0.21). Among SLN-positive patients, patients with non-SLN metastasis comprised 18(72%) in the ILC group and 158(42%) in the IDC group (p<0.05). Moreover, the number of non-SLN metastasis was greater in ILC compared with IDC. Multivariate analysis showed that, among pathology, age, stage, hormone receptor status and HER2 status, ILC was the most influential factor predicting non-SLN metastasis in patients with SLN metastasis. **Conclusion:** Conclusion: ILC had more non-SLN metastasis than IDC, and it was an important factor for the prediction of non-SLN positivity in SLN-positive cases. Therefore, omitting ALND for ILC might underestimate the number of lymph metastases, risking less accurate staging, and selection, therefore, of less effective adjuvant therapy. Omitting ALND for ILC with positive SLNs needs more consideration.

Disclosure of Interest: None declared

P28

THE CHARACTERISTICS AND MANAGEMENT OF OUTCOMES IN OLDER WOMEN WITH BREAST CANCER IN NEW ZEALAND

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Problem Statement: The aim of this study was to understand the characteristics of older women with breast cancer and to describe the current patterns of treatment and breast cancer specific mortality outcomes. **Methods:** The study included data from the combined Auckland and Waikato breast cancer registers, which hold information for 12, 372 women diagnosed with stage I-IV breast cancer. Between June 2000 and May 2013, 2,671 (21.6%) women over 70 were diagnosed with breast cancer. Characteristics, treatment type and survival were compared across five year age groups (70-74, 75-79, 80-84, 85+). **Results:** 85.2% of women were New Zealand European, and 20.7% had stage III-IV disease. Biomarker status was largely ER (79%) and PR (61.9%) positive, with only a small number HER2 positive (6.9%). 33.7% of women presented with two or more comorbidities. Surgical treatment was given to 81.3% of women, with 59.8% having a mastectomy and 40.2% having breast conserving surgery. Use of surgery declined with advancing age and stage of disease. Women with metastatic disease were more likely to be treated non-surgically (78.5%), while 13.6% of women with stage I or II disease did not have surgery. Chemotherapy was rarely used and administration of radiotherapy decreased with increasing age. Endocrine therapy was the most widely administered treatment across age groups. Breast cancer specific five –year survival rates for women 70-74 and 75-79 were similar, at 86% (95% CI: -0.01-0.04) and 85% (95% CI: -0.02-0.04) respectively, but breast cancer specific five-year survival was worse in women aged 80-85+, at 80% (95% CI: -0.02-0.06) and 76% (95% CI: -0.03-0.06) respectively. **Conclusion:** Characteristics of older women with breast cancer vary somewhat from younger women. Most older women were treated surgically or with endocrine therapy. Chemotherapy was rarely used and radiotherapy use decreased with increasing age. Generally guidelines for the treatment of women with breast cancer are being followed in older women although chemotherapy may be under-used.

Disclosure of Interest: None declared

P29

MANPOWER AND RESOURCE PLANNING FOR SETTING UP A DEEP INSPIRATORY BREATH HOLD (DIBH) RADIATION THERAPY: A PROSPECTIVE STUDY

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Problem Statement: Cardiac morbidity following adjuvant left sided breast/chest wall radiotherapy (RT) is one of the most important treatment-related long-term toxicity. Heart-sparing RT techniques like deep inspiratory breath hold (DIBH) have conclusively reduced the dose to the heart. Unfortunately, such techniques are resource intensive and many centers around the world are yet to commission the same. We report the feasibility, dosimetric gain and the resource intensiveness associated with the delivery of DIBH-RT which includes safe irradiation of the supraclavicular fossa along with tangents to the chest wall or breast. **Methods:** A prospective time audit of each of the steps involved in DIBH-RT planning was performed. The personnel (radiographer, physicist and clinician) involved were recorded and a weightage of 1, 2 and 3 respectively was given to allow a simple approximate financial resource estimate. For each DIBH treatment plan, a second plan was produced on a free breathing (FBRT) scan and respective mean heart doses were noted. The average time and personnel type required per patient and per Gray reduction of mean heart dose (MHD) were calculated using Person-Hours (PH) and weighted Person-Hours (WPH). Person-Hours = (No. of Person involved x Time in Minutes)/60. Weighted Person-Hours = (Weightage x No. of Person involved x Time in Minutes)/60. Wilcoxon Signed-Rank Test was used to compare the mean heart dose between DIBH-RT plans and FBRT plans whilst Mann-Whitney U-test was used to compare the Person-Hours between the two cohorts. **Results:** Fifty patients (42% post-mastectomy) receiving DIBH radiation were included in the analysis. The median MHD was 148.6cGy (IQR:227.4cGy–463.5cGy) for DIBH-RT versus 329.1cGy (IQR:227.4–463.5cGy) for FBRT (p<0.001). The median Person-Hours per patient with DIBH-RT was 18.68 PH, with radiographers spending the highest time (Median – 15.42PH, IQR:12.87–17.52). DIBH required an extra 6.46PH or 7.13WPH over FBRT to reduce the MHD by 1.81Gy (p<0.001). Accordingly, the extra resources required to reduce the risk of MHD by 1Gy were calculated as 3.57PH and 3.94WPH. There seemed to be a trend for better time efficiency after a learning process in the initial cohort of 20 patients (Median: 22.48WPH vs

21.04WPH). **Conclusion:** Our technique of DIBH-RT with SCF matching is feasible and reduces heart dose significantly. It is associated with increased time inputs from all groups of staff, mainly from radiographers. Anticipation of such extra manpower and time may be used to plan and commission a proper DIBH setup.
Disclosure of Interest: None declared

P30
COMPARISON OF AJCC 8TH AND 7TH EDITION STAGING FOR CARCINOMA BREAST- A SURVIVAL ANALYSIS
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Problem Statement: Since 1959, TNM classification of AJCC has been used as a comprehensive tool for prognostication and management of breast cancer. Recently AJCC 8th staging incorporated biological factors in addition to traditional anatomical factors such as tumor grade, proliferation rate, estrogen, progesterone and human epidermal growth factor 2 (HER2) receptor status with gene expression prognostic panels. Stage migration comparing AJCC 8th versus AJCC 7th and its effects on survival statistics has being investigated in this study. **Methods:** Prospectively maintained data of patients treated in a tertiary care centre getting upfront surgery from June 2011 to June 2014, was analysed. Stage wise survival analysis was done by using Kaplan Meier statistics. **Results:** A total of 261 patients' data was analysed. Mean age was 54 (28-70) years and median follow up was 42 (1.5-72.23) months. The stage to stage comparison between the AJCC 7th versus AJCC 8th revealed upstaging in 53(20.3%) and downstaging in 84(32.2%) patients. Both AJCC 7th (log rank p<0.01) and AJCC 8th staging (log rank p = 0.03) system predicted disease free survival (DFS) significantly. Overall survival (OS) was significantly associated with AJCC 8th staging (log rank p=0.04) but not with AJCC 7th (log rank p=0.16). Among the factors added in 8th edition over that of 7th edition of AJCC only PR receptor positivity was found to correlate with improved OS with a p value of 0.02. **Conclusion:** The newly released AJCC 8TH staging system provided more accurate OS information. The comparison between downstaged, upstaged and staging unchanged patients did not show any statistically significant difference in DFS and OS. A positive PR receptor status was the only added factor in AJCC 8th edition found to be associated with improved OS.
Disclosure of Interest: None declared

P31
DISCORDANCE OF HORMONE RECEPTOR AND HUMAN EPIDERMAL GROWTH FACTOR RECEPTOR2 AS A PROGNOSTIC FACTOR OF SURVIVAL BETWEEN PRIMARY BREAST CANCER AND RECURRENT BREAST CANCER
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Problem Statement: The aim of this study was to compare the hormone receptor (HR) and Her2/neu status between primary and metastatic breast cancer and also to evaluate the impact of discordance and other clinicopathologic factors on survival. **Methods:** This study retrospectively reviewed 427 recurrent breast cancer patients who were confirmed by histological sampling of loco-regional relapse site from Jan 1999 to Dec 2008. Estrogen receptor (ER), Progesterone receptor (PR) and human epidermal growth factor receptor2 (Her2) assessment were performed on the primary and recurred specimen at the same laboratory. **Results:** Discordance rates of ER, PR and Her2 were 15.0%, 30.4% and 17.8% respectively. Concordant positive group of ER had statistically significant better cancer specific survival (CSS) and post-recurrence survival (PRS). Switch of ER or PR from positive to negative resulted worse CSS and PRS. (p<0.001 for ER, p=0.003 for PR) Also PR concordant positive group would expect longer disease free survival (DFS) compare to patients with losing their positivity. But patients who have turned into their subtype from others to triple negative by changing HR and Her2 would have worse PRS compare to patients who did not change their receptor from HR+/Her2-. (P=0.004) A multivariate analysis indicated that ER discordance was an independent prognostic factor for CSS. (HR=2.6 95% CI)
Image/Graph:

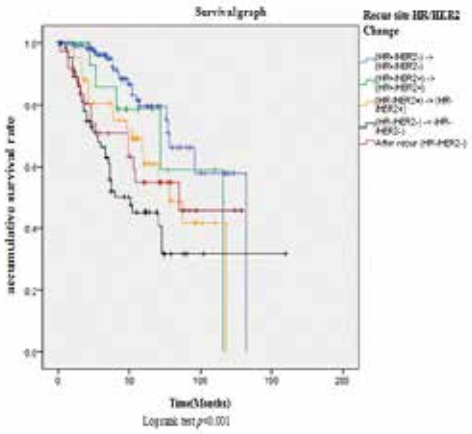

Figure 3. Post recurrent survival by subtype change between Primary and Recur site HR/HER2 maintained group and Triple negative group after HR/HER2 change

Table:

Table 1. Change Hormone receptors and HER2 between the primary tumor and the recurrence

Primary site				%		Recur site		%
ER+			228	53.4		ER+	226	52.9
ER-			199	46.6		ER-	201	47.1
PR+			202	47.3		PR+	176	41.2
PR-			225	52.7		PR-	251	58.8
HER2+			211	56.1		HER2+	110	29.3
HER2-			165	43.9		HER2-	266	70.7
		%			%			%
ER+→ER+	195	45.7	PR+→PR+	124	29.0	HER2+→HER2+	77	23.6
ER+→ER-	33	7.7	PR+→PR-	78	18.3	HER2+→HER2-	33	10.1
ER-→ER-	168	39.3	PR-→PR-	173	40.5	HER2-→HER2-	191	50.0
ER-→ER+	31	7.3	PR-→PR+	52	12.2	HER2-→HER2+	25	58.6
ER								
			Concordance			363	85.0%	
			Discordance			64	15.0%	
PR								
			Concordance			297	69.6%	
			Discordance			130	30.0%	
HER2								
			Concordance			268	82.3%	
			Discordance			58	17.8%	

ER : Estrogen receptor, PR : Progesterone receptor, HER2 : human epidermal growth factor receptor2

Conclusion: Estrogen receptor changing from positive to negative is worse prognostic factor for CSS and PRS. And triple negative subtype after recurrence by alteration of HR, HER2 is worse prognostic factor for PRS.
Disclosure of Interest: None declared

P32

IS SUPRACLAVICULAR LYMPH NODE DISSECTION RECOMMENDED FOR CLINICAL N3C BREAST CANCER AFTER NEOADJUVANT CHEMOTHERAPY?

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Problem Statement: To evaluate the treatment outcome and efficacy of supraclavicular lymph node dissection after neoadjuvant chemotherapy (NAC) in patients with clinical N3c (cN3c) breast cancer. **Methods:** Between 2004 and 2013, a total 98 patients with supraclavicular nodes (SCN) involvement in the absence of distant metastasis, as diagnosed by an initial positron emission tomography, were retrospectively analyzed. All patients were treated with NAC, followed by surgery and radiotherapy. According to the extent of nodal dissection, the patients were divided into two groups; 44 patients underwent axillary lymph node dissection (ALND), 54 patients underwent ALND with SCN dissection. SCN regions were irradiated in both groups regardless of SCN dissection. **Results:** There was no difference on clinicopathologic characteristics between two groups except for the rates of pathologic confirmation for SCN at diagnosis (n = 38, $p < 0.001$) and the number of retrieved nodes ($p = 0.008$). On univariate analysis, SCN dissection was not associated with improved disease free survival (DFS) and overall survival (OS). On multivariate analyses adjusted for factors including cT stage, clinical nodal involvement (SCN vs. SCN with internal mammary node), ypT stage, histologic grade and extent of nodal dissection, SCN dissection was not associated with improved DFS and OS. Clinical nodal involvement and ypT stage were associated with DFS and OS, and histologic grade was associated with OS. **Conclusion:** SCN dissection in patients with cN3c breast cancer after NAC might not improve DFS and OS. The clinical nodal involvement, ypT stage and histologic grade were associated with prognosis.

Disclosure of Interest: None declared

P33

MASTECTOMY OR BREAST CONSERVATION SURGERY IN EARLY BREAST CANCER? FACTORS AFFECTING PATIENT CHOICE

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Problem Statement: For over 20 years it has been known that breast conserving surgery (BCS) in combination with radiotherapy offers comparable survival rates to mastectomy in early breast cancer (EBC)[1]. BCS negates the need for reconstruction or prosthesis and better preserves the body image of the patient.[2] When BCS was introduced, it was not readily accepted as standard of practice in many centers and thus mastectomy rate for T1 tumors was used as a key performance indicator by many centers as a quality assurance. However, currently BCS has become widely adopted in practice and now its standard of care to offer patients the choice of BCS or mastectomy in EBC. Given that patients' choice determines the current surgical practice, use of mastectomy rate in T1 as a surgical practice indicator needs to be re-evaluated. There is a general paucity in the literature describing factors that influences patient's' choice to have mastectomy instead of BCS for EBC. The standard of practice at the Royal Brisbane and Women's Hospital (RBWH) is to offer all breast conservation candidates the choice between BCS and mastectomy. The purpose of this study is to describe the characteristics of the patients choosing mastectomy over BCS for T1N0 (Stage IA) breast cancer and to explore the factors influencing their decisions. By outlining the significant impact that patient factors have on the mastectomy rate we aim to prove the irrelevance of the use of mastectomy rate as a KPI in the contemporary setting. **Methods:** We identified all patients who have undergone mastectomy or BCS for Stage 1A disease at the RBWH between the years of 2008 and 2013. Patients with multifocal disease, previous breast cancer in the same breast, completion mastectomies, and prophylactic mastectomies were excluded from this study. Retrospective data collection included demographics, risk factor profile, mode of presentation, operative details, adjuvant treatment regimen and histopathology. The variables were compared and analysed between the two groups. **Results:** Of 321 patients who underwent breast surgery for Stage IA breast cancer from 2008 and 2013, a total of 75 (23.4%) patients were treated with index mastectomy, which is comparable to the reported Queensland state mastectomy rates for T1 tumors. When stratifying for age, we noted a trend of increased mastectomy rate in the elderly population. (45/174, 26%, women aged ≥60yrs compared with 30/147, 20%, less than 60yrs) Of the group who chose to have mastectomy; 7/75 (10%) patients have had prior history of breast cancer on the contralateral breast, 18/75 (24%) patients had first degree relative with breast cancer, and 31/75 (41%) patients had 2 or more risk factors for breast cancer. **Conclusion:** Our data shows that despite being provided with the treatment option of BCS a significant number of women still choose to undergo mastectomy. We have identified patients with prior history and family history of breast cancer were more likely to choose to have mastectomy. Where documented, the other reasons for choosing mastectomy included desire to have reconstruction and wish to avoid radiation treatment. Considering the complexity of the patient's decision between the two surgical options, mastectomy rate no longer serves as a valuable KPI in assessing treatment practice.

Disclosure of Interest: None declared

P34

CHARACTERISTICS AND TREATMENT FOR BREAST CANCER FOR ASIAN AND PACIFIC WOMEN IN NEW ZEALAND

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Problem Statement: Equity in access to healthcare services has always been an important public health issue. This study aims to compare the characteristics and treatment between European women and Asian and Pacific women diagnosed with breast cancer in New Zealand. **Methods:** European, Asian and Pacific women diagnosed with invasive breast cancer between June 2000 and May 2013 recorded in the Waikato and Auckland Breast Cancer Registers were identified. Patient characteristics and treatments were explored by ethnic group. Forward stepwise logistic regression analyses were performed to examine the differences in treatment by ethnic group. **Results:** 9421 European women, 983 Asian women and 808 Pacific women were included in this study. Compared to European women, Asian women were more likely to have higher grade cancer and be diagnosed at a younger age but less likely to have comorbidities, and Pacific women were more likely to have worse cancer stage, higher grade, more comorbidities and be diagnosed at a younger age but less likely to be screen detected. Compared to European women, Asian and Pacific women were less likely to receive treatments except endocrine therapy for Pacific women, and surgery, chemotherapy and endocrine therapy for Asian women, after adjustment for other significant factors (Table 1).

Table:

Table 1. Odds ratio of having different treatments for Asian and Pacific women compared to European women

	Pacific vs European			Asian vs European			Adjusted factors
	p-value	odds ratio	95% CI	p-value	odds ratio	95% CI	
Surgery (BCS and Mastectomy)	<0.001	0.31	0.21-0.45	0.082	1.86	0.92-3.77	Stage, grade, comorbidities, year, age, region, screen detected or not, public/private hospital
BCS vs Mastectomy (Only for those who had surgery)	0.006	0.77	0.64-0.93	<0.001	0.62	0.53-0.72	Stage, grade, age, region, screen detected or not, public/private hospital
Reconstruction (Only for those who had mastectomy)	<0.001	0.27	0.19-0.38	<0.001	0.34	0.26-0.45	Stage, grade, comorbidities, age, screen detected or not, public/private hospital
Radiotherapy	0.026	0.82	0.69-0.98	<0.001	0.70	0.60-0.81	Stage, grade, comorbidities, year, age, region, screen detected or not, public/private hospital
Chemotherapy	<0.001	0.48	0.38-0.61	0.108	0.85	0.69-1.04	Stage, grade, comorbidities, year, age, region, public/private hospital
Endocrine therapy (Only for those who were ER/PR positive)	0.621	1.06	0.83-1.35	0.331	1.11	0.90-1.37	Stage, grade, year, age
Trastuzumab (Only for those who were HER2 positive)	<0.001	0.25	0.16-0.41	0.006	0.54	0.35-0.84	Stage, grade, comorbidities, year, age, region, public/private hospital

BCS: breastconservingsurgery

Conclusion: Both Asian and Pacific women have disadvantage in access to treatment for breast cancer. Further research in breast cancer outcomes of these women by treatment type is needed.
Disclosure of Interest: None declared

P35
WILL SYSTEMIC ADJUVANT THERAPY BE NECESSARY AFTER CONCERVING BREAST RECURRENCES?
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Problem Statement: It is said that concerving breast recurrences are observed at a frequency of 5 to 20% after surgery. In the breast cancer clinical practice guidelines, it is recommended to treat aimed at cure in case of recurrence localized in the concerving breast. In the case of hormone receptor positive breast cancer, it is recommended that hormone therapy be performed after excision of local recurrences, while recommended evidence for chemotherapy has not been established. **Methods:** A retrospective study was conducted with the aim of examining the necessity of adjuvant therapy after breast concerving surgery by subtype. **Results:** Breast cancer concerving surgery was 1127 cases and mastectomy operation was 1353 cases in primary breast cancer cases underwent surgery at our hospital from October 2011 to January 2017. There were 38 cases (3.3%) in which surgery was performed with spared metastasis without spontaneous metastasis, surgery was performed in 38 cases (3.3%), as a reoperation for concerving breast recurrence,5 patients were performed re-concerving surgery, 33 patients were performed mastectomy. **Conclusion:** Subtypes of local recurrence were 28 cases of Luminal type, 6 cases of HER2 type and 4 cases of TN type. Postoperative adjuvant therapy (hormone therapy; 22 cases, anticancer drug treatment; 1 case) was performed in 23 (82.1%) of the 28 recurrence cases with relapsed luminal type, but recurrence occurred. In 5 patients (17.8%) (4 cases of local relapse and 1 case of distant metastasis recurrence), 3 cases (60.0%) of adjuvant therapy were performed. In TN, 2 out of 4 cases (50.0%) who developed local recurrence had recurrence with distant metastasis.
Disclosure of Interest: None declared

P36
IS RELIABLE TO PRESERVE LYMPHATICS OF THE ARM IN AXILLA AND REDUCED OCCURENCE OF LYMPHEDEMA IN BREAST CANCER PATIENT WITH AXILA SURGERY? THE ANATOMICAL STUDY
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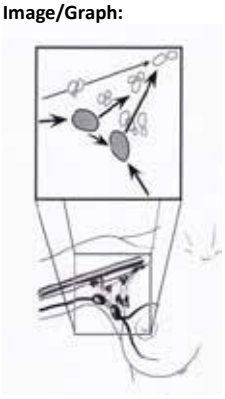
Problem Statement: To simplify and improve the technique of targeted dissection of the axila with aim to spare lymphatics passing from arm, based on the functional anatomy of the breast. To acquire a basic orientation and to map the lymphatics of arm running through the axilla and to reduce occurrence of lymphedema of the upper arm after breast cancer surgery. **Methods:** A post mortem study was performed on 30 female cadavers. After slow intradermal and subcutaneus administration of blue dye into the medial upper part of the arm and into the periareolar region of the breast, the lympahtics were visualized. A scheme of the lymphatic vessels running through axilla was based on summation of all patterns. **Results:** After intradermal and subcutaneous administration of patent blue, the lymphatics of the upper extremity demonstrated great variability which is demonstrated on figures. Most often were two main lymphatic collectors visualized. One run along axillary vein up to clavicle. Second run caudal from the axillary vein and usually led to the nodes in central axillary region, where were found numerous collaterals and junctions between nodes. From central axilla run net of vessels to the apex of the axilla. In six cases led lymphatic collectors from arm and breast to the same node (sentinel node of the breast). Final scheme of the lymphatic vessels running through axilla is displayed bellow.
Image/Graph:



Conclusion: From the course of the superficial lymphatic vessels of the medial side of the arm we can assume, that is highly unlikely to spare all lymphatics running from arm when axilla dissection is performed. Reliable prevention of the occurrence of lymphedema remains still dubious. There is need to perform subsequent clinical study to prove results of this study.
Disclosure of Interest: None declared

P37

FACTORS INFLUENCING REOPERATION FOLLOWING BREAST CONSERVING SURGERY

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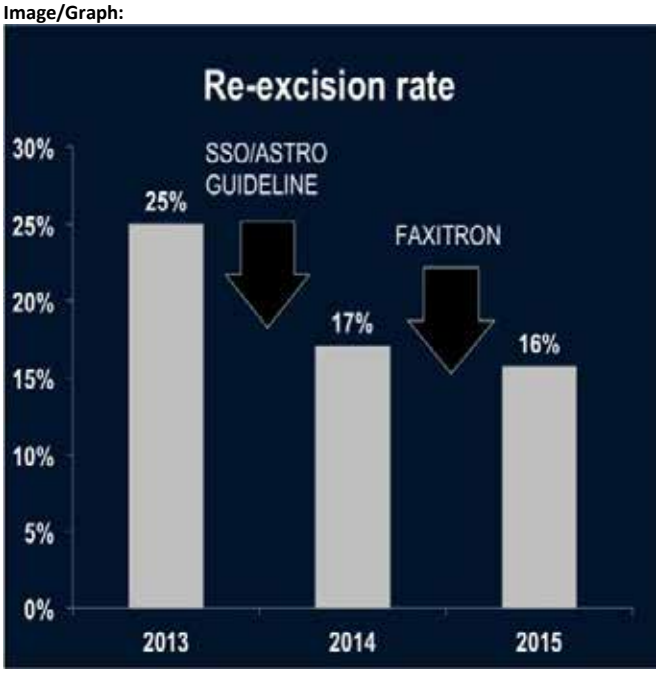
Problem Statement: Reoperation rates following breast conserving surgery (BCS) vary between 10-46%. Prior to 2014, our policy was to reoperate when cancer/in situ carcinoma was within 2mm of the surgical margin. After the 2014 SSO/ASTRO guidelines we adopted "no ink on tumor" as adequate margin for invasive cancer. In January 2015 we introduced routine intraoperative specimen X-ray (Faxitron) at one site. We aim to identify the influence of these events on reoperation rate at our centre. **Methods:** All 562 patients who underwent BCS for core-biopsy proven in situ or invasive breast cancer at the Royal Melbourne Hospital from 2013-2015 and Royal Women's Hospital from 2013-2014 were included in our study. Medical records, radiology, pathology and our electronic database were retrospectively reviewed to identify patients who underwent reoperation (re-excision or total mastectomy) within 100 days of their primary procedure. **Results:** The rate of reoperation at our institution was 19.5%. There was a trend in reduction of reoperation rate from 25% to 17% (p=0.05) with the introduction of SSO/ASTRO guidelines and 17% to 16% (p=0.73) with the introduction of Faxitron. On multivariate analysis the factors which significantly increased reoperation rate were the presence of multifocality on mammogram (p<0.01), larger lesion size on mammogram (p<0.01), smaller volume of surgical resection (p<0.01) and the presence of ductal carcinoma insitu (p<0.01).

Image/Graph:



Conclusion: There has been a trend in reduction of reoperation rates since 2014 SSO/ASTRO guidelines and our introduction of Faxitron, but neither was significant. Other influential factors are multifocality on mammogram, lesion size on mammogram, volume of surgical resection and the presence of ductal carcinoma insitu.

Disclosure of Interest: None declared

P38

PAGET'S DISEASE OF THE BREAST. A CLINICOPATHOLOGIC STUDY

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Problem Statement: Paget's disease of the breast is a rare type of intraepithelial malignancy, accounting for 1-3% of breast cancers. It is predominantly seen in women in the sixth and seventh decades of life. It was first reported in 1874 by Sir James Paget, who described 15 patients with eczematous lesions of the nipple-areola complex. Paget's disease is often associated with an underlying in situ and/or invasive cancer in the breast parenchyma. The aim of this study is to describe our experience in the diagnostic evaluation and management of patients with Paget's disease of the breast. **Methods:** We retrospectively reviewed the medical records of patients who were diagnosed with Paget's disease of the breast at the Breast Cancer Surgery Units of 401 Army General Hospital and 251 Hellenic Air Force General Hospital, over a 13-year period. Clinical, mammographic, sonographic and pathological findings were analyzed. **Results:** From January 2004 to December 2016, sixteen pathologically proven cases of Paget's disease of the breast were identified. All patients were female, with an average age of 58.1 years (range 32 to 90 years; SD:16.6) The most common clinical presentation was an eczematous lesion of the nipple-areola complex (93.7%). One (6.25%) patient presented with bilateral disease. Fourteen (87.5%) patients underwent mastectomy, one (6.25%) patient underwent central excision, whereas one (6.25%) patient who presented with an extensive Paget's disease associated with invasive breast carcinoma and liver secondary lesions received chemotherapy only. Pure Paget's disease was detected in 2 (12.5%) patients, while underlying invasive breast carcinoma was detected in 8 (50%) patients, ductal carcinoma in situ in 2 (12.5%) patients, and invasive carcinoma associated with ductal in situ carcinoma in 4 (25%) patients. Axillary lymph node metastases were detected in 8 (50%) patients. Positivity for Estrogen receptors and Her 2/ neu was detected in 5 (31.3%) and 10 (62.5%) patients respectively. Nine (56.3%) patients received adjuvant chemotherapy and 8(50%) patients received adjuvant radiotherapy. Two patients aged 48 and 90 years, developed metastatic disease 28 and 16 months respectively after surgery. Median follow-up was 64.1 months (range 16-144 months). Five-year disease-free survival was 81.3%. **Conclusion:** Paget's disease of the breast is a rare clinical entity. In the vast majority of the cases it is associated with an underlying breast carcinoma. Paget's disease should always be considered as a differential diagnosis in patients presenting with eczematous lesions of the nipple areola complex, in order to avoid treatment delays. Magnetic resonance imaging may be helpful in delineating the extent of the disease. Sentinel node biopsy is indicated in cases with underlying invasive cancer or when mastectomy is considered. Breast conservation with central excision plus radiation therapy may be safely performed in selected patients.

Disclosure of Interest: None declared

P39

MALE BREAST CANCER. DIAGNOSTIC EVALUATION AND MANAGEMENT. A CLINICOPATHOLOGIC STUDY

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Problem Statement: Male breast cancer is a rare clinical entity accounting for 1% of all breast cancers and less than 1% of malignant tumours in men. Because of the rarity of the disease no randomized trials have yet been conducted to address the optimal treatment and therefore treatment recommendations have been extrapolated from results of trials conducted in female patients. The aim of this study is to describe our experience in the diagnostic evaluation and management of male patients with breast cancer who were treated at our institutions. **Methods:** We retrospectively reviewed

the medical records of male patients who were diagnosed with breast cancer at the Breast Cancer Surgery Units of 401 Army General Hospital and 251 Hellenic Air Force General Hospital, over an 13-year period. Clinical, mammographic, sonographic and pathological findings were analyzed. **Results:** From January 2004 to December 2016, seventeen pathologically proven cases of male breast cancer were identified. The mean age of the patients was 68.6 years (range 28 to 87 years; SD:14.74). Tumors ranged in size from 0.5 to 5 cm (mean 2.2cm; SD:1.3). The most common clinical presentation was a firm subareolar mass (76.5%). Nipple discharge was noted in 2 (11.8%) patients and ulceration in 3(17.7%) patients. Fifteen (88.2%) lesions were palpable. One (5.9%) patient presented with bilateral disease. Invasive ductal carcinoma was the most common pathological type (88.2%) followed by ductal carcinoma in situ (11.8%). Two (11.8%) patients were found to have metastatic pulmonary and bone disease at presentation. Fifteen (88.2%) patients underwent mastectomy and 2 (11.8%) patients underwent wide local excision with preservation of the nipple. The proportions of ER and PR positivity were 88.2% and 70.5% respectively. Metastatic axillary lymphadenopathy was detected in 10 (58.8%) patients. Nine (53%) patients received adjuvant chemotherapy, 4 (23.5%) patients received adjuvant radiotherapy and 14 (82.4%) patients received hormonal therapy. Two patients who presented with metastatic disease died within 12 months from presentation despite combination chemotherapy, whereas four patients died due to unrelated causes during follow-up. For the remaining patients the median follow-up was 69.5 months (range 9-154 months). The 5-year overall survival was 88.2%. **Conclusion:** Male breast cancer is a relatively rare disease and therefore the optimal treatment has not yet been evaluated by randomized controlled trials. Surgical resection with axillary dissection or sentinel node biopsy remains the gold standard treatment approach. Hormonal therapy with tamoxifen is the standard adjuvant therapy. The use of adjuvant chemotherapy and radiotherapy as well as the outcome is similar to those of female breast cancer patients at equal stages.
Disclosure of Interest: None declared

P40

INVASIVE MICROPAPILLARY CARCINOMA OF THE BREAST. A RARE PRESENTATION OF AN AGRRESSIVE MALIGNANCY AND REVIEW OF THE LITERATURE

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Problem Statement: Invasive micropapillary carcinoma of the breast (IMCB) is a rare distinct variant of infiltrating ductal carcinoma, accounting for less than 2% of all breast cancers. It was first reported in 1993 by Siriaunkgul and Tavassoli who described nine cases of a rare variant of invasive breast carcinoma that was histologically characterized by the formation of micropapillae within clear spaces separated by a fibrocollagenous or fibrovascular stroma. IMBC was listed by World Health Organization (WHO) as a rare variant of epithelial tumor of the breast in 2003. IMBC most commonly affects women in the fifth and sixth decades of life. The aim of this study is to describe an exceedingly rare presentation of IMBC as a locally advanced breast tumor in a 25-year old patient. Diagnostic evaluation and treatment of the patient are presented along with a review of the relevant literature. **Methods:** A 25-year-old woman with no family history of breast or ovarian cancer presented with a 2-month history of progressive left breast enlargement. Clinical examination revealed a locally advanced breast tumor associated with extensive axillary lymph nodes involvement. The patient underwent breast ultrasound and MRI followed by core needle biopsies of the tumor and the axillary nodes. **Results:** A core needle biopsy of the breast mass and axillary lymph nodes revealed IMBC. On immunohistochemical analysis, the tumor cells were negative for ER, PR, and Her-2/neu. Staging investigations including abdominal and chest computed tomography scans as well as bone scan were negative. The patient received neoadjuvant chemotherapy consisted of 6 cycles of TAC regimen. She then underwent a left modified radical mastectomy. Histological evaluation revealed a Grade II, IMBC measuring 2,5x2,3x2 cm with focal necrosis associated with in situ micropapillary carcinoma and the presence of lymphatic tumor emboli. Six out of 17 resected lymph nodes were found to harbor metastatic disease. On immunohistochemical analysis, the tumor cells were triple negative and the Ki-67 proliferative index was 25-30%. Postoperatively, the patient was treated with adjuvant radiotherapy. Ten months after surgery she developed clinical signs of local recurrence, associated with pulmonary nodules indicative of metastatic disease. After a histological confirmation, she is being treated with chemotherapy. **Conclusion:** IMBC is a rare, distinct variant of breast cancer with an aggressive clinical behavior. It is associated with a high propensity for lymphovascular invasion and locoregional lymph node metastases, recurrences, distal metastases and a poor prognosis. Imaging characteristics of IMBC are indistinguishable from those of ductal breast carcinomas. Aggressive neoadjuvant chemotherapy should be considered in these patients. Because of the rarity of the tumor, the optimal treatment has not yet been clearly defined. Further studies are necessary to clarify the precise molecular mechanisms responsible for the poor prognosis of IMBC.
Disclosure of Interest: None declared

P41

AXILLARY DISSECTION AFTER SENTINEL LYMPH NODE BIOPSY: ARE UPDATED ASCO GUIDELINES UNIVERSALLY APPLICABLE?

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Problem Statement: Updated ASCO guidelines for Sentinel Lymph Node Biopsy (SLNB) were published in November 2016. For Early Breast Cancer (EBC), defined as a tumour size < 5cm with one or two metastatic sentinel lymph nodes (SLNs), the guidelines recommend that following breast conserving surgery and conventionally fractionated whole-breast radiotherapy, completion axillary dissection (ALND) is no longer required. In the context of these recommendations, we analyzed our data for a consecutive series of patients who underwent SLNB followed by ALND. **Methods:** Patients from 2012 to 2016 who underwent SLNB for EBC in our institution were included. Patients meeting the inclusion criteria for the Z-0011 and IBCSG-23 trials were identified and were compared to the published data from these two trials. Chi square/Fisher exact test was used for statistical analysis. **Results:** In total, 320 patients with EBC had SLNB. SLN metastases were found in 113(35%) patients, of whom 72 patients were met Z-0011 inclusion criteria and were compared with ALND arm of same trial. In present cohort, non-sentinel nodal positivity was nearly double, 44.4% vs 23.1% (x^2=11.37, p<0.01). Our patients have statistically significant differences in clinical stage (x^2=57.3, p<0.01), presence of lymphovascular invasion (x^2=47.85, p<0.01) and tumor grade (x^2=9.5, p<0.01). Of the 16 patients with micromets 14 met IBCSG-23 inclusion criteria and were also compared with ALND arm of same trial. The non-SLN positivity was 25% vs 3% (x^2=2.1, p=0.15). Present cohort have statistically significant differences in in tumor size (x^2=21.67, p<0.01) and histological grade (x^2=12.62, p<0.01). **Conclusion:** ASCO recommendations on avoiding ALND which are based on Z-0011 & IBCSG-23 trials, may not be universally applicable, particularly in symptomatic women with grade III and larger T2 tumours, who have significantly higher chance of non-SLN positivity.
Disclosure of Interest: None declared

P42

THIRTY-SIX CASES THAT WERE CLINICALLY NODE POSITIVE AT DIAGNOSIS AND UNDERWENT SENTINEL NODE BIOPSY AFTER NEOADJUVANT CHEMOTHERAPY FOLLOWED BY OMITTING AXILLARY DISSECTION

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Problem Statement: In breast cancer therapy, progression of systemic therapy have made it possible to reduce resection area of breast and axillary lymph nodes. Multidisciplinary treatment have contributed both reducing surgical complication and prognostic improvement. Z0011 trial showed axillary dissection (AxD) could be omitted for patient who is clinically node negative and scheduled to undergo partial resection followed by whole breast radiation and sentinel nodes biopsy even if there were macro-metastases in one or two sentinel nodes. Whereas, the safety and efficacy for omission of axillary dissection in patient who is clinically node positive at diagnosis and downstages (ycN-) after systemic therapy, sentinel node is negative are controversial. Enokido et al examined accuracy of sentinel node biopsy (SNB) after neoadjuvant chemotherapy, for the patients who were clinically node positive and turned to be node negative after chemotherapy. They revealed that false negative rate was especially higher when primary lesion was hormone receptor positive and HER2 negative. There are no reports showing the safety and utility of SNB after neoadjuvant chemotherapy from the point of recurrence rate and survival rate. **Methods:** We retrospectively collected the data of thirty-six patients from medical records. They were all scheduled to undergo breast surgery and SNB from January 2011 to December 2015 in our hospital after receiving neoadjuvant chemotherapy. They were initially diagnosed breast cancer with clinically node positive and turned to be suspicious node negative (ycN-) judged by the findings of preoperative US, CT or MRI. When thickened lymph cortex compared to contralateral side was observed, we defined the lymph node metastasis positive. Then their sentinel lymph nodes were confirmed to be no metastasis and AxD was omitted. **Results:** Thirty-six women's median age was 52 years (range, 32 to 77 years). Median follow-up was 43 months (range, 19 to 76 months). Their stage at diagnosis was as follows: 2B,28(78%); 3A,4(11%); 3B,2(6%); 3C,2(6%). Their subtype was as follows: ER+ HER2-,11(31%); ER+HER2+,9(25%); HER2+,4(11%); TN,12(33%). Thirty-two patients (89%) underwent partial resection followed by whole breast radiation. None of four patients who underwent mastectomy underwent radiation. Median number of sentinel nodes was 2 (range, 1 to 6). Twenty-four patients (67%) underwent adjuvant systemic therapy such as trastuzumab, endocrinetherapy. There were 4 recurrences during follow up.

Table:

case	clinical stage	surgical procedure	subtype	therapeutic effect of primary	Disease free interval (M)	Recurrence site
1	2B	Bp	TN	0	9	lung
2	2B	Bp	TN	3	26	breast
3	3B	Bp	L-B HER2+	2b	30	breast
4	2B	Bt	L-B HER2-	1a	19	skin

Conclusion: We examined retrospectively clinically node positive breast cancer patients who turned to be node negative after systemic therapy and confirmed to be metastasis negative by SNB. Four recurrent cases (4/36; 11.1%) were observed and there were no recurrence of locoregional axillary area, even in ER+ HER2- subtype which was reported to be higher incidence of false negative in SNB after neoadjuvant chemotherapy. We cannot conclusive proposal from this small number retrospective study. However this study would be an important data to consider the utility and safety of omitting axillary dissection for the patients who were clinically yielded node negative after neoadjuvant chemotherapy.

Disclosure of Interest: None declared

P43

THE IMPACT OF CLASSIFICATION ON BREAST CONSERVATION RATES FOR MULTIFOCAL AND MULTICENTRIC BREAST CANCERS

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Problem Statement: Defining the optimum treatment for multifocal(MF) multicentric (MC) breast cancer (BC) poses clinical and technical challenges. Firstly, there is no universally accepted standard of classification of this disease. Secondly, the use of breast conservation therapy(BCT) for MFMCBC is controversial as there are concerns regarding cosmesis and local control. At present, there is emerging data to suggest that survival outcomes are acceptable if negative margins are achieved for all tumour foci and radiotherapy is administered. However, the lack of a standard classification for MFMCBC results in the absence of a consistent surgical approach for BCT. MFMCBC is conventionally defined by quadrants, with tumours occurring in the same quadrant defined as MF and foci in different quadrants MC disease. For example, an ongoing prospective randomised controlled trial, the American College of Surgical Oncology Group (ACOSOG)-Z11102 study, defines multiplicity on the basis of the quadrant classification, as well as a separation distance of 2 cm between tumours. This study also allows the use of two lumpectomies, which infringes on the 2017 National Comprehensive Cancer Network (NCCN) guidelines. The quadrant classification denotes relative positions but does not provide an intuitive surgical approach for resection of all tumour foci through a single incision in accordance to the NCCN recommendations. To achieve the latter for BCT in MFMCBC, a segment classification was proposed. This study was performed to explore the impact of the different classifications on successful BCT rates for MFMCBC. **Methods:** Consecutive patients who were diagnosed to have MFMCBC and treated at a single institution between Jan 2009 & Dec 2011 were included in the study. Diagnosis was made on the basis of preoperative biopsy and postoperative histologic evaluation. Successful BCT for MFMCBC were defined as attainment of negative margins for all foci, followed by completion of adjuvant therapy. **Results:** A total of 40 patients were diagnosed with MFMCBC during the study period. Based on the segment classification, 24(60%) were MF & 16(40%) were MC lesions. BCT rates were 87.5% & 81.3% for MF & MC disease, respectively. If the tumours were categorised based on quadrants, then 28(70%) would be MF and 12(30%) would have MC disease, with BCT rates of 85.7% & 83.3% respectively. Five-year overall survival and disease-free survival for the entire cohort were 95% & 92.5%, respectively. A separate analysis demonstrated that all patients were at least satisfied with their aesthetic result and none rated their cosmetic outcome as fair or poor. **Conclusion:** The majority of women with MFMCBC underwent successful BCT in this study. The classification of MFMCBC according to segments or quadrants did not affect BCT rates. However, the segment classification provides an additional dimension by offering a roadmap for a consistent, intuitive reductionist surgical approach to achieve BCT with reasonable cosmesis and acceptable overall survival. As all patients had only one lumpectomy incision, current recommended guidelines were not contravened. This preliminary study provides opportunities for further evaluation of classification methods for MFMCBC.

Disclosure of Interest: None declared

P44

VIDEO-ASSISTED BREAST SUGERY (VABS) EXCELS IN THE TREATMENT RESULTS AND THE POSTOPERATIVE AESTHETIC RESULTS

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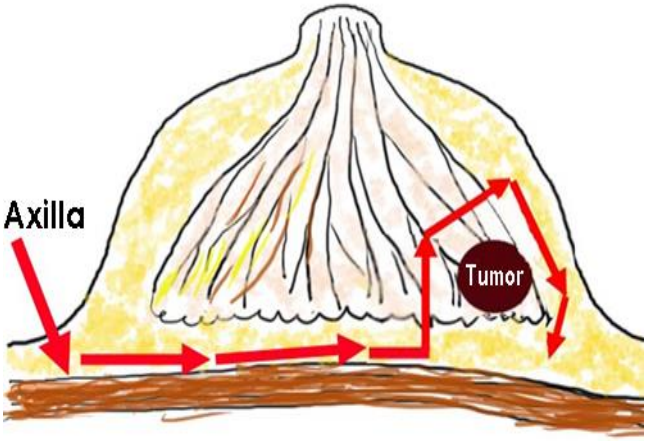
Problem Statement: Many large-scale clinical trials showed the superiority of breast conserving surgery plus radiotherapy over mastectomy in overall survival and local recurrence. We are worried about the tendency easily to choice mastectomy plus reconstruction even in advanced cases in Japan. We devised endoscopic video assisted breast surgery (VABS) to perform partial and total mastectomy without any wound on the breast. We have performed on more than 400 patients since 2001. **Methods:** VABS consists of BCS, mastectomy, sentinel node (SN) biopsy, axillary node dissection, and breast reconstructions. It uses periareolar approach and/or axillary approach. Trans-axillary retromammary approach (TARM) is a single port surgery with an axillary skin incision. The each wound length is usually 2.5cm, but 1cm for SN biopsy. We cut the mammary gland with clear surgical margin from behind the mammary gland. The postoperative aesthetic results were evaluated by ABNSW. **Results:** BCS was performed on 350 patients and skin-sparing mastectomy on 50 patients. The operative cost is very low as the conventional one. There was no significant difference in operational infestation. There was no serious complication after surgery. Surgical margin was minimally positive in 2 patients. The original shapes of the breast were preserved well. The follow-up is 160 months at maximum. There is 3 locoregional recurrences and 14 distant metastases. 5-year survival rate is 97.5%. The postoperative aesthetic results were excellent and better. The sensory disturbance was minimal. All patients expressed great satisfaction.

Image/Graph:



Conclusion: VABS can be considered as a best surgical procedure in curability and aesthetics.

Disclosure of Interest: None declared

P45

PRE-OPERATIVE ULTRASOUND GUIDANCE COMBINED WITH A CARBON NANOPARTICLE TRACER FOR SENTINEL LYMPH NODE BIOPSY IN BREAST CANCER PATIENTS

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Problem Statement: Sentinel lymph node biopsy (SLNB) has replaced axillary lymph node dissection (ALND) for staging axillary lymph nodes in women with early breast cancer, and different advantages and disadvantages are associated with different tracer methods. The aim of our study was to retrospectively analyze the feasibility and accuracy of pre-operative ultrasound guidance combined with the use of a carbon nanoparticle tracer for the sentinel lymph node (SLN) procedure in breast cancer patients. **Methods:** The single-center, retrospective study included breast cancer patients who underwent SLNB from April 1, 2016, to December 31, 2016, in the department of breast cancer, Guangdong General Hospital. A pre-operative ultrasound scan along the lymphatic drainage pathway was performed to mark the first met lymph node to initially identify the SLN. All patients received standard SLNB surgery using a carbon nanoparticle tracer. **Results:** In this study, 194 cases were considered. The mean operative time for SLNB was 7.2±2.1 minutes. The SLN identification rate was 98.5% (191/194), and the mean number of SLNs was 6.8 (range, 2–18). Sentinel node metastasis was found in 16.2% cases, and 83.9% of those were macrometastases. The sensitivity was 95.7% (22/23), the specificity was 100% (34/34), the positive predictive value was 100% (22/22), the negative predictive value was 97.1% (34/35) and the false-negative rate was 4.3% (1/23).

Image/Graph:

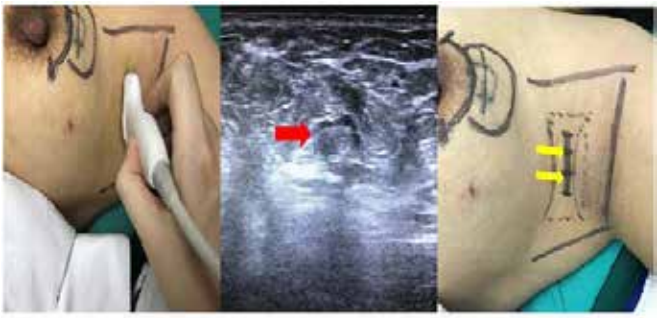

Fig. 1 Ultrasound scan performed before the SLN biopsy.

a: The probe was moved from the upper outer quadrant of the breast to the axilla along the lymphatic drainage pathway. b: The first met lymph node was detected and marked (red arrow). c: A line was drawn as a surgical incision site to identify the marked lymph nodes under ultrasound guidance (yellow arrow)

Table:

Table 3 Diagnostic value of sentinel nodes (n = 57)

Se.	Sp.	PPV	NPV	FNR
95.7%	100%	100%	97.1%	4.3%

Se: sensitivity, Sp: specificity

PPV: positive predictive value, NPV: negative predictive value

FNR: false-negative rates

Conclusion: Pre-operative ultrasound guidance combined with carbon nanoparticle tracer for SLNB has favorable identification rates and predictive values. SLNs were identified and resected rapidly and easily.

Disclosure of Interest: None declared

P46

THE USE OF ONCOTYPE DX TO EVALUATE THE SIGNIFICANCE OF HER2 PROTEIN EXPRESSION IN HORMONE-POSITIVE BREAST CANCER

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Problem Statement: Breast cancer is a very heterogeneous tumor, particularly hormone-positive HER2-positive breast cancer is heterogeneous biologically and clinically. Current guidelines recommend anti-HER2 therapy in combination with chemotherapy to treat hormone-positive HER2-positive breast cancer; however, neo-adjuvant chemotherapy reportedly has no effect on the prognosis of hormone-positive HER2-positive breast cancer, like that in the case of luminal A type. Therefore, it is uncertain whether adjuvant chemotherapy contributes to an improved prognosis. On the other hand, Oncotype DX is a test based on RT-PCR that measures the expression levels of 16 tumor-related genes and 5 reference genes, including HER2 gene, using RNA from cancer cells. Oncotype DX has been proven to be effective in diagnosing early-stage hormone-positive breast cancer. Therefore, we evaluated the changes in the recurrence risk relative to the changes in HER2-protein expression in hormone-positive breast cancer cases in which Oncotype DX was performed. **Methods:** Of all the hormone-positive breast cancer cases in which Oncotype DX was performed at our hospital, a total of 93 cases of lymph node metastasis-negative premenopausal breast cancer or postmenopausal breast cancer with metastasis limited to 3 lymph nodes were followed up in the present study. **Results:** We identified 76 cases of breast cancer with HER2 protein expression scores of 0 or 1+ (A group) and 17 cases with HER2 protein expression scores of 2+ (B group). No significant difference was observed between the two groups in terms of age, menopause state, histological type, tumor size, number of lymph node metastases, nuclear grade, ER state, PgR state, or Ki67 index. Strong ER protein expression was observed in almost all cases in groups A and B. The median Oncotype DX recurrence scores in groups A and B were 16 (2–43) and 19 (10–52), respectively, with no significant difference in the recurrence risk observed between the two groups (P = 0.250). In terms of the HER2 scores of Oncotype DX, only two cases in group A were observed to be equivocal and all other cases were found to be negative. In group B, FISH testing revealed 11/17 cases and two cases (amplified by a rate of 2.1 and 2.3, respectively) were found to be positive; however, the HER2 scores of Oncotype DX were negative in 16 cases, and only one case, the HER2 score determined by Oncotype DX was equivocal and classified as having a low recurrence risk. Furthermore, cases in group B were categorized into two groups: the low recurrence risk group (eight cases) and the intermediate or high recurrence risk group (nine cases). The nuclear grade was higher (P = 0.038), and the number of cases with lymph node metastasis tend to be higher (P = 0.074) in the intermediate or high recurrence risk group, and no significant difference was observed with respect to the HER2 scores of Oncotype DX (P = 0.527). **Conclusion:** In strongly ER-positive breast cancer, HER2 protein expression has been posited to be associated with a recurrence risk calculated using Oncotype DX, indicating a possibility of avoiding chemotherapy in majority of cases. Even if HER2 protein expression was equivocal or positive, it may be included the cases that is classified as a low risk in Oncotype DX within hormone strong positive breast cancer.

Disclosure of Interest: None declared

P47

TRAIL SENSITIZES CYSTIDINE DEPRIVATION-MEDIATED CELL DEATH IN HYPOXIA

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Problem Statement: Recent amino acid is possible new target for cancer therapy. Tumor frequently encounter hypoxic stress and hypoxic conditions lead to chemotherapy and radiotherapy resistance. In the present study, effects of amino acid deprivation in MDA-MB-231 cells were investigated in hypoxic condition. **Methods:** Cell viability was measured using MTT assay and cell death was evaluated using the Annexin V-FITC Apoptosis Detection kit I according to manufacturer's instructions (Biovision; Milpitas, CA, USA), and analyzed using a FACScan flow cytometer (BD Science; San Jose, CA, USA). Protein (15 μg) were separated by SDS-PAGE and transferred to NC membranes. The membranes were incubated with primary antibodies, followed by horseradish peroxidase-conjugated secondary antibodies. The protein expression levels were detected by Western blot. **Results:** MDA-MB-231 breast cancer cells were treated with medium containing individual amino acid deprivation for 48 h. Among individual amino acid deprivation, cystine deprivation induced ~90% cell death. Sulfasalazine, a potent inhibitor of cystine transporter (xCT), also increased the cell death in MDA-MB-231 cells. However, sulfasalazine-mediated cell death significantly reduced in hypoxia condition. TNF-related apoptosis-inducing ligand (TRAIL) sensitized sufasalazine-mediated cell death in hypoxia; TRAIL alone did not induce cell death. We further investigated the mechanism that ATF4/CHOP-induced expression of the TRAIL receptor DR5 associated with cystine deprivation-mediated cell death. **Conclusion:** The present study indicated that the potential application of combining treatment of TRAIL and cystine deprivation in hypoxia.

Disclosure of Interest: None declared

P48

ALOE-EMODIN ENHANCES TAMOXIFEN CYTOTOXICITY BY SUPPRESSING RAS/ERK AND PI3K/MTOR IN BREAST CANCER CELLS

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Problem Statement: Aloe-emodin (AE) is derived from Aloe vera and rhubarb (Rheum palmatum) and exhibits anticancer activities via multiple regulatory mechanisms in various cancers. AE can also enhance the anticancer efficacy of cisplatin, doxorubicin, docetaxel, and 5-fluorouracil; however, its effects remain poorly characterized. MCF-7, MDA-MB-231, MDA-MB-468, BT-474, and HCC-1954 breast cancer cell lines were treated with the indicated conditions of AE, and cell viability assays were performed. The expression levels of signaling proteins were determined by western blot analysis, intracellular reactive oxygen species (ROS), cell cycle distributions, and rates of apoptosis as estimated by flow cytometry. In comparison with other cells, MCF-7 cells were more sensitive to AE treatment. **Methods:** MCF-7, MDA-MB-231, MDA-MB-468, BT-474, and HCC-1954 breast cancer cell lines were treated with the indicated conditions of AE, and cell viability assays were performed. The expression levels of signaling proteins were determined by western blot analysis, intracellular reactive oxygen species (ROS), cell cycle distributions, and rates of apoptosis as estimated by flow cytometry. **Results:** In comparison with other cells, MCF-7 cells were more sensitive to AE treatment; AE enhanced the cytotoxicity of 9 μg/ml tamoxifen by reducing EGFR, ERα, Ras, ERK, c-Myc, and mTOR protein expression and blocking PI3K and mTOR activation. Finally, although co-treatment of AE with tamoxifen increased intracellular ROS, there were no effects on cell cycle progression. **Conclusion:** Besides facilitating tamoxifen-induced cell death, AE also enhanced the antiproliferative activity of tamoxifen by blocking Ras/ERK and PI3K/mTOR pathways in breast cancer cells, thus demonstrating the chemosensitizing potential of AE.

Disclosure of Interest: None declared

P49

HIF-1ALPHA K674 ACETYLATION BY TRICHOSTATIN A IS ASSOCIATED WITH DRUG RESISTANCE INDUCTION UNDER NORMOXIC CONDITIONS

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Problem Statement: Hypoxia-inducible factor 1 (HIF-1) participates in tumor angiogenesis by upregulating target genes, such as vascular endothelial growth factor (VEGF). Trichostatin A (TSA) is an anticancer drug that inhibits histone deacetylases (HDACs). In the present study, we investigated whether TSA treatment increases HIF-1a stabilization *via* acetylation under normoxic conditions, which would lead to VEGF upregulation and resistance to anticancer drugs. **Methods:** We used MTT assay, HRE promoter activity assay, immunostaining, immunoblotting, RT-PCR, Q-PCR, immunoprecipitation and a chromatin immunoprecipitation (ChIP) assay. **Results:** TSA enhanced total HIF-1a and VEGF-HRE reporter activity under normoxic conditions. When cells were transfected with GFP-HIF-1a, treatment with TSA increased the number of green fluorescence protein (GFP)-positive cells. TSA also enhanced the nuclear translocation of HIF-1a protein, as assessed by immunoblotting and as evidenced by increased nuclear localization of GFP-HIF-1a. An increase in the interaction between HIF-1a and the VEGF promoter, which was assessed by ChIP assay, led to activation of the VEGF promoter. TSA acetylated HIF-1a at lysine (K) 674, which resulted in an increase in TSA-induced VEGF-HRE reporter activity. TSA-mediated cell death was reduced by the overexpression of HIF-1a but was recovered by transfection with a HIF-1a mutant (K674R). **Conclusion:** These data demonstrate that HIF-1a may be stabilized and translocated to the nucleus by TSA-mediated acetylation at K674 under normoxic conditions. These findings suggest that HIF-1a acetylation may lead to resistance to anticancer therapeutics, such as HDAC inhibitors, including TSA.

Disclosure of Interest: None declared

P50

PREDICTIVE VALUE OF THE 21-GENE RECURRENCE SCORE FOR INVASIVE LOBULAR CARCINOMA

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Problem Statement: The 21-gene Recurrence Score (RS) (Oncotype DX®; Genomic Health, CA) is widely used to estimate the risk of distant recurrence and predict the benefit of chemotherapy in patients with Estrogen receptor (ER)-positive/HER2-negative invasive breast cancer. Invasive lobular carcinoma (ILC) is the second most common type of invasive breast cancer. The clinicopathological features of ILC, including tumor grade, hormone receptor status, and incidence of bilateral breast cancer, has been reported to differ from those of invasive ductal carcinoma (IDC). The majority of patients with ILC has low-grade ER positive tumors and is unlikely to derive significant benefit from either adjuvant or neoadjuvant chemotherapy, while the overall survival of patients with ILC has been shown to be higher than those in patients with IDC. However, regardless of the better prognosis of ILC compared to IDC, the utility of the Oncotype DX for ILC is not well known. The aim of this study was to compare the recurrence risk shown by Oncotype Dx between ILC and IDC. **Methods:** Among ER-positive/HER2-negative primary breast cancer patients who underwent surgery and Oncotype Dx at St. Luke's international hospital from 2009 to May 2017, 325 patients with IDC and 20 patients with ILC were assessed. Risk of recurrence was defined as low risk for RS 1-17, intermediate risk for RS 18-30, and high risk for RS 31-100. The clinicopathological factors, including age, menopausal status, nuclear grade, progesterone receptor (PR) status, Ki-67 levels, tumor size, and lymph node status, in association with risk of recurrence were assessed. Chi-squared test was used to test for association between the clinicopathological factors and risk of recurrence. **Results:** The mean age at diagnosis was 50 years (range, 25-74 years) for IDC and 52 years (range, 35-68 years) for ILC. According to the tumor size, T1 was in 187 (52.5%) with IDC and in 2 (10%) of ILC, and T2-3 was in 138 (42.4%) patients with IDC and in 18 (90%) of ILC. For the 325 patients with IDC, 187(57.5%) had low risk (RS<18), 104 (32%) had intermediate risk (RS18-30), and 34(10.5%) had high risk (RS>30), while all of the patients with ILC had low/intermediate risk; 14 of the 20 patients (70%) had low risk and 6 (30%) had intermediate risk. For IDC, low nuclear grade ($p<0.01$), PR-positive ($p<0.01$), and low Ki-67 level ($p<0.01$) were associated with low risk. In multivariate analysis, nuclear grade ($p<0.01$), PR status ($p<0.01$), and Ki-67 level ($p<0.01$) were the independent predictors risk of recurrence of IDC. For ILC, premenopausal status ($p=0.003$) and PR-positive ($p<0.01$) were associated with low risk. In multivariate analysis, however, there was no factor to predict risk of recurrence of ILC. **Conclusion:** We showed that the distribution of risk of recurrence predicted by Oncotype Dx was different between ILC and IDC. Because all patients with ILC had low/intermediate risk, the majority of these populations with ILC who were considered to apply to Oncotype Dx may avoid adjuvant chemotherapy. Further studies with large sample size are needed to assess the prognostic impact of our results.

Disclosure of Interest: None declared

P51

CLINICAL CHARACTERISTICS OF THE BREAST CANCER PATIENTS TREATED WITH CHEMOTHERAPY BY THE HISTOCULTURE DRUG RESPONSE ASSAY AT A SINGLE INSTITUTION

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Problem Statement: Breast cancer is the most common cancer in women worldwide. Chemosensitivity testing is a significant outcome predictor in patients with breast cancer. Histoculture drug response assay(HDRA) has been known for reliable methods. Using the in vitro HDRA, we have evaluated the correlation between the HDRA assessment positivity and chemotherapy responses in breast cancer patients. **Methods:** Tumor specimens from 70 patients with breast cancer were evaluated using the HDRA. Tumor tissues were cultured on gelfoam sponge gel in 24-well plates, followed by treatment with Adriamycin (6ug/ml), cyclophosphamide (20ug/ml) and taxane (75ug/ml) in triplicate. A control group received no drug treatment. The sensitivity of a chemotherapy regimen was defined as a tumor inhibition rate(IR) in excess of 30%. In all patients, Chemotherapy was performed by based on HDRA results with IR>30%. We retrospectively examined between clininopathological factors and HDRA results. **Results:** Pathologic findings of 70 patients were obtained as follows: all patients were diagnosed with Invasive ductal carcinoma. The median age was 50 years. The median follow-up duration was 31months. 3 patients were recurred at ipsilateral axillary LN and lung metastasis with recurrence rate only 4.2%. all the patients underwent chemotherapy for HDRA results. There was no significant relationship between clinopathological factor and IR of HDRA results. **Conclusion:** In conclusions, results of HDRA are related with low recurrence rate. Even though IR rate of HDRA results were independent from the clinopathological factor. Chemosensitivity as determined by the HDRA is a useful tool for predicting clinical outcome.

Disclosure of Interest: None declared

P52

DOWNREGULATION OF BREAST CARCINOMA AMPLIFICATION SEQUENCE 1 (BCAS1) OVERCOMES TAMOXIFEN-RESISTANT IN BREAST CANCER CELLS

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Problem Statement: Breast cancer is most common cancer in women. More than 70% of all breast cancer patients expresses estrogen receptor (ER). For ER+ patients, selective ER modulators, tamoxifen (Tam), used as endocrine therapy. However, about 30% breast cancer are resistant to tamoxifen, mechanism of tamoxifen resistant is not yet clear. Breast carcinoma associated

sequence 1 (BCAS1) is also high expressed in breast cancer, and amplified BCAS1 is associated with more aggressive tumor phenotypes. However, the functional study of BCAS1 as oncogene does not have enough evidences. In the present study, role of BCAS1 on tamoxifen resistant in breast cancer were studied. **Methods:** Cell viability was measured using MTT assay and cell death was evaluated using the Annexin V-FITC Apoptosis Detection kit I according to manufacturer's instructions (Biovision; Milpitas, CA, USA), and analyzed using a FACScan flow cytometer (BD Science; San Jose, CA, USA). Protein (15 μg) were separated by SDS-PAGE and transferred to NC membranes. The membranes were incubated with primary antibodies, followed by horseradish peroxidase-conjugated secondary antibodies. The protein expression levels were detected by Western blot. **Results:** In tamoxifen resistance MCF-7 (TR) cells, BCAS1 mRNA levels was 8 times higher compared to parental MCF-7 (P) cells, and BCAS1 protein levels also increased. BCAS1 downregulation reduced tamoxifen resistant in TR cells. Tamoxifen also induced BCAS1 mRNA levels. Induced BCAS1 protein in TR cells were reduced tamoxifen-mediated cell viability. Downregulation of BCAS1 recovered the sensitivity of tamoxifen by phosphorylation of JNK in TR cells. Ionizing radiation enhanced BCAS1 downregulation-mediated cell death in TR. **Conclusion:** Targeting BCAS1 could be overcomes resistant of tamoxifen or radiation therapy.
Disclosure of Interest: None declared

P53
THE EXPRESSION OF HUMAN EPIDIDYMIS PROTEIN 4 IN BREAST CANCER
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Problem Statement: Human epididymis protein 4 (HE4) was first identified in the epithelium of the distal epididymis and originally predicted to be a protease inhibitor involved in sperm maturation. The overexpression of human epididymis protein 4 (HE4) has been found in several human malignancies. However, there is still very limited information about the role of HE4 in breast cancer. Tissue microarray (TMA) analyzes thousands of specimens in parallel with minimal damage to the origin blocks. This study was to determine the HE4 status in breast cancer by using TMA **Methods:** Archival tissue specimens from 105 patients with primary invasive breast cancer were analyzed for HE4 expression by immunhistochemical staining with TMA. Results were compared to clinicopathologic data by multivariate analysis. **Results:** There were 6 patients (6%) with score 0,30 patients (28%) with score 1, 56 patients (54%) with score 2 and 13 patients (12%) with score 3. There was no significant relationship between HE4 expression and age (p=0.609), estrogen receptor status (p=0.280), histological grading (p=0.947), primary tumor staging (p=0.091), Node Status (p=0.890), TNM staging (p=0.420). TNM stage was significantly related to the overall 5-year survival rate(p=0.000). Nevertheless, HE4 expression has no significant relationship to overall five-year survival(p=0.955).
Image/Graph:

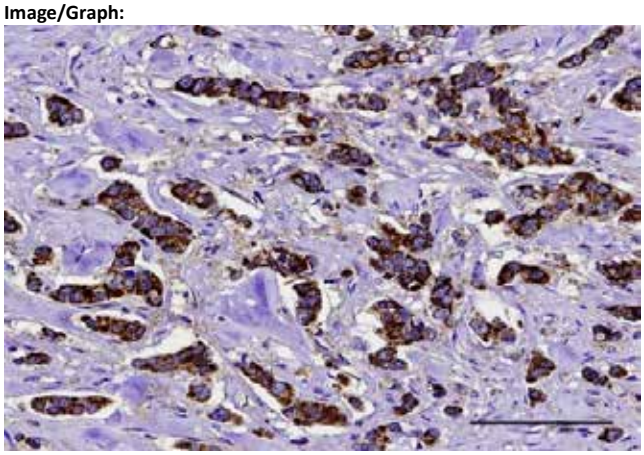

Table:
Table. Multivariate analysis for overall 5-yerar survival rate

Variable	p value	OR	95% CI	
Age	.371	0.7	0.3	1.5
TNM stage (I, II, III, IV)	.000	12.3	5.3	28.3
ER status (postive vs. negative)	.130	0.5	0.2	1.2
Histologic grading (1, 2, 3)	.130	1.6	0.9	2.7
HE4 (0, 1, 2, 3)	.955	1.0	0.6	1.6

OR: Odds ratio; CI: confidence interval
HE 4: human epididymis protein 4
ER status: estrogen receptor status

Conclusion: Conclusion: Immunohistochemical staining with TMA was convenient and feasible for analyzing HE4 expression status in breast cancer. Our preliminary results show that HE4 expression had no significant prognostic value in breast cancer. Figure Immunohistochemical study for HE4 on the tissue array of breast cancers. The representative case shows strong cytoplasmic immunoreactivity for HE4 in a granular pattern in the tumor cells, scored as 3+. Scale bar, 100 um.
Disclosure of Interest: None declared

P54
THE CURRENT STATUS OF 21-GENE SIGNATURE IN EARLY BREAST CANCER PATIENTS WITH HORMONE RECEPTOR POSITIVE AT SINGLE INSTITUTION IN JAPAN
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Problem Statement: There is the accumulated evidence to recommend a 21-gene Recurrence Score assay (Oncotype DX[R]; ODX) to optimize adjuvant treatment for patients with early stage breast cancer (EBC) with hormone receptor-positive (HR+) and human epidermal growth factor receptor-2 negative (HER2−) tumors. ODX has been commercially available in Japan since 2007. Some observational studies support the validation of the assay in Japan as a strong predictor of distant recurrence risk. Additionally, the cost-effectiveness of the assay in Japan has also been reported. However it is not generalized to use ODX in our clinical setting. The conceivable reasons are it is not covered by Japanese healthcare insurance and long duration (4 weeks) is needed to take the results. Here, we conduct a retrospective analysis to investigate our actual condition of recommendation and usage of ODX at Aichi Cancer Center Hospital (ACC). **Methods:** A retrospective analysis was performed in 1,804 HR+/HER2- EBC patients who underwent surgery between January 2012 and June 2017 at Aichi Cancer Center Hospital. We define the criteria of ACC intermediate risk group who wondered whether endocrine therapy or chemotherapy followed by endocrine therapy to detect the suitable population for the assay as follow. Luminal A like with more than 3 cm tumor size or 1 to 3 positive nodes, Luminal B like with less than 0.5mm or node negative, or relatively less malignant feature (Histological grade 1 or 2). Luminal A like is defined as follows; allred score of ER+PgR≧13, Ki67 < 20%, histological grade 1 or 2. Luminal B like is defined as the tumors not fulfilling of Luminal A like criteria. We investigate the frequency of recommendation for ODX at postoperative team conference, actual number of order the assay and how the treatment decision changed based on the assay results. **Results:** 192 patients were identified as ACC intermediate risk group. Among them, 38 (20%) patients were recommended for ODX at postoperative conference. Seventeen patients (45%) of 38 patients underwent the assay (ODX group). Among 17 patients, the rates of low-, intermediate- and high-risk classified by Recurrence Score were 47% (n=8), 47% (n=8) and 6% (n=1), respectively. Although 88% (n=15) patients were recommended chemotherapy before the assay, 3 patients of intermediate risk and one patient of high risk patient (24% of ODX group) finally underwent adjuvant chemotherapy based on the results of the assay. Among the 175 patients of ACC intermediate risk without ODX

(non-ODX group), 35% (n=58) were underwent adjuvant chemotherapy based on classical clinical and pathological findings. There have been 3 cases of distant recurrence observed in the non-ODX group and 1 case in the ODX group with a median follow-up of 32.7months (1.0-65.7). **Conclusion:** This analysis revealed the relatively low frequency of recommendation and examination of ODX in our institution. Even after the recommendation, more than half of the patients did not choose to examine the assay. The reason can be considered as expensiveness and insufficient certainty of the assay. In order to firmly recommend the assay, further results of the studies such as TAILORx are needed to confirm the superior usefulness of ODX to conventional clinical factors. With those results, we may have to reconsider our current status for recommendation of ODX.
Disclosure of Interest: None declared

P55

CLINICAL AND POTENTIAL MOLECULAR PARAMETERS FOR PREDICTING RECURRENCE OF PATIENTS DIAGNOSED WITH BREAST PHYLLODES TUMORS

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Problem Statement: Although the prognoses of breast phyllodes tumors (PTs) were excellent, they have recurrent and even metastatic potentials. Previous studies showed that early local recurrence was presented adverse effect on outcomes of PTs. The standard treatment of PTs is surgical excision with a definite margin. This study investigated the impact of clinical characteristics and possible molecular parameters on recurrence. **Methods:** Data of 319 patients diagnosed with PTs who received surgical intervention at National Taiwan University Hospital (NTUH) from 1991 to 2013 were retrospectively reviewed. **Results:** Of the 319 patients, 8 (2.5%) developed metastasis. All but 1 died of metastasis and metastasis was associated with poor prognosis. Forty patients (12.5%) developed local recurrences. Among them, 18 were diagnosed with benign, 13 with borderline and 9 with malignant PTs. Patients who received partial mastectomy without free margin were positive associated with recurrence by using Cox stepwise regression analysis (p=0.035). Using direct sequencing, we analysed MED12 exon 2 mutations for the 13 recurrent patients diagnosed with benign PTs initially. Somatic mutation of MED12 was observed in 7 patients (53.8%). The mutation patterns were similar (6/7, 85.7%) between initial and recurrent PTs, with codon 44 being involved for all 6 patients. **Conclusion:** Besides histology and clinical parameters, more parameters (including molecular parameters) should be investigated to predict recurrence of PTs.
Disclosure of Interest: None declared

P56

PROGNOSTIC EFFECT OF SENTINEL LYMPH NODE BIOPSY AFTER NEOADJUVANT CHEMOTHERAPY IN NODE-POSITIVE BREAST CANCER

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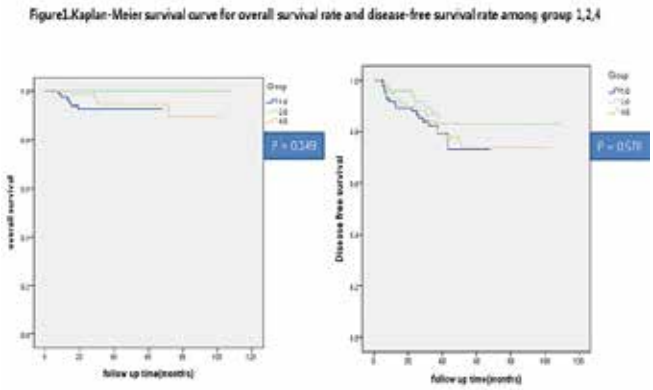
Problem Statement: To evaluate the prognostic effect in axillary recurrence or survival of sentinel lymph node biopsy (SLNB) in patients with cytology-proven, node-positive breast cancer after neoadjuvant chemotherapy (NAC).
Methods: This retrospective study included 506 patients who were diagnosed with invasive breast cancer and axillary lymph nodes metastasis and treated with NAC followed by curative surgery at Samsung Medical Center between January 2007 and December 2014. We analyzed and compared outcomes including prognoses and survivals among all groups. **Results:** The median age at the time of surgery was 44.4 years. Median follow-up time was 47 months (range, 1 to 115 months). The 134 patients had negative SLNs on frozen-section analysis. 85 patients with negative SLN status had no further dissection (Group 1); 49 patients with negative SLN status had further axillary lymph node dissection (ALND) (Group 2); 104 patients with positive or undetected SLNs had further ALND (Group 3); 79 patients had ALND with no residual axillary metastasis (Group 4); and 189 patients with pathologic nodal-positive disease underwent ALND (Group 5). The SLN identification rate was 98.3% (234 of 238 patients) and the false negative rate (FNR) of SLNB after NAC was 7.8% (6 of 104 patients). In survival analysis, there was no significant difference in the overall survival (OS, $p = 0.149$) and in the disease-free survival (DFS, $p = 0.578$) among Groups 1, 2, and 4.
Image/Graph:



Conclusion: These results suggest that SLNB may be feasible after NAC for node-positive breast cancer and may help reduce morbidity by avoiding standard axillary lymph node dissection (ALND) in negative SLN patients.
Disclosure of Interest: None declared

P57

ANTI-CANCER SYNERGY EFFECTS FOR ANEMARRHENA ASPHODELOIDES BUNGE AND COPTIS CHINENSIS USING CONDITIONALLY REPROGRAMMED BREAST CANCER CELL AND BREAST CANCER CELL LINES

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Problem Statement: Though used as therapeutic agents, the conventional chemotherapeutic agents showed many side effects. The author had studied herbal regimens to enhance anti-cancer effects and to reduce side effects of the chemotherapeutic agents. *Anemarrhena asphodeloides bunge* (AAB) and *Coptis chinensis* (CC) were selected to evaluate their synergistic effect with the chemotherapeutic agents. **Methods:** Seven breast cancer cells were used for the combinational anti-cancer effects. The breast cancer cells were composed of 4 conditionally reprogrammed cancer (CRC) cells and 3 cancer cell lines (MDA231, MDA361 and MDA453) respectively. The CRC cells were isolated from the cancer patients diagnosed and resected at the Daegu Catholic University Medical Center. As combinational agents with AAB and CC, Tamoxifen (TMX) and Paclitaxel (PTX) were used. The combinational chemo-

sensitivity test was performed with MTT assay, and the anti-cancer synergy effects were evaluated with the dosage reducing index and combination index using CompuSyn program. **Results:** In CC + TMX combination with 25:1 ratio, 3 cells (42.9%) showed synergic effects at 32.5±14.6ug/mL of median effect dose (Dm), while in CC + PTX combination with 4:1 ratio, all cells (100%) showed synergic effects with 38.6±15.4ug/mL of Dm. In AAB + TMX and AAB + PTX combination with 50:1 and 8:1 ratio respectively, 3 cells (42.9%) showed synergic effects with 35.8±9.4ug/mL and 32.9±11.6ug/mL of Dm respectively. **Conclusion:** AAB and CC disclosed good synergic effects with the conventional chemotherapeutic agents. In CC and PTX combination, their synergic effects were 100%. The effective concentrations of TMX and PTX were much lower than their ordinary blood concentrations. Even though in vitro chemo-sensitivity test does not fully reflect their in vivo effects, AAB and CC might be good candidates for combinational anti-cancer agents.
Disclosure of Interest: None declared

P58

NEUROENDOCRINE BREAST CARCINOMA – CAN SURGERY BE AVOIDED?

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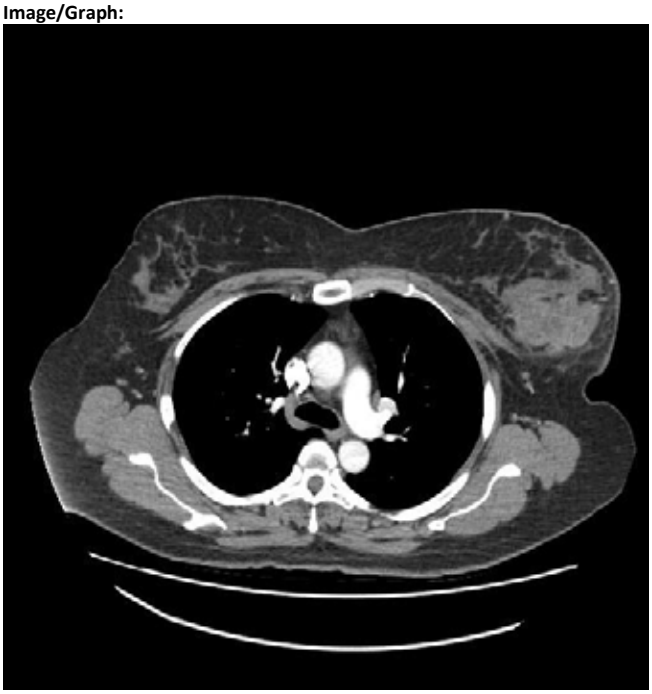
Problem Statement: Neuroendocrine breast cancer (NEBC) is a rare variant of breast cancer. International experience and understanding of this condition are still limited and guidelines on management non-existent. We present our case of NEBC, which showed a pathologic complete response (PCR) to neo-adjuvant chemotherapy (NACH) and question whether surgery could be avoided in this condition. **Methods:** A 54 year old woman was referred to the breast clinic, having noted a rapidly enlarging mass in the left breast. Triple assessment showed it to be an aggressive neuroendocrine breast cancer, with regional lymphadenopathy, but no distant spread, nor signs of gastro-intestinal or lung disease. Fig 1. CT showing large mass in left breast Staining showed the cancer to be positive for synaptophysin, CD56, GATA3 and ER. The Ki67 index was greater than 80%. Notable negative stains were chromogranin, CK7, pancytokeratin, PR and CERB2. The patient commenced and completed 6 cycles of Cisplatin/Etoposide as per a lung SCC protocol. The question of avoiding surgery was discussed at length, but little international support for this approach could be found. Hence an uncomplicated mastectomy and axillary clearance was subsequently performed. Histopathological assessment of the breast and axillary contents revealed a *pathological complete response*, with no residual tumour in either breast parenchyma or lymphoid tissue. Adjuvant radiotherapy to the chest wall and supraclavicular fossa was completed as planned pre-operatively. At over 36 months post-diagnosis and treatment, the patient is still disease free. **Results:** Although neuro-endocrine cancers (NECs) occur throughout the body, they most commonly occur in the respiratory or gastro-intestinal tracts[1]. These extra-pulmonary small cell carcinomas (ESCCs) are often characterized by locally advanced disease or metastases on presentation and despite aggressive locoregional treatment and adjuvant therapies, the natural course is often of relapse and limited long-term survival[2]. Guidelines on the management of the various extra-pulmonary sites are vague and generally recommend an *organ-specific* approach, rather than an *ESCC-specific* one. At the time of this paper, literature on neo-adjuvant therapy for NEBC is limited and guidelines non-existent. Research and publications on this topic have increased recently. Four reviews are noted in this respect: *Murata et al*[3], *Yang et al*[1], *Rovera et al*[4] and *Roininin et al*[5]. What all four reviews demonstrate is the highly variable treatment protocols adopted for this disease. The use of NACH is still uncommon and even when it is employed, no consensus exists on which protocol to follow. It was this lack of certainty that we encountered when faced with a patient with this rare condition.

Image/Graph:



Conclusion: NEBC is a rare form of breast cancer, with limited international experience and no consensus on management. Our patient's pathologic complete response implies that surgery was unnecessary and suggests that NACH, followed by re-staging should at least be entertained as a possible treatment protocol. We believe our patient and her pathological complete response to NACH suggest that an alternative to surgery exists.
Disclosure of Interest: None declared

P59

THE ROLE OF L1 RETROTRANSPOSONS IN TRIPLE NEGATIVE BREAST CANCER

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Problem Statement:
Triple-negative breast cancer (TNBC) refers to breast cancers that does not express the genes for estrogen receptor (ER), progesterone receptor (PR) and *Her2/neu* [Collignonet *et al.*, 2016]. Thus treatment of TNBC is more challenging because current hormone therapies target these receptors. Depending on the stage of its diagnosis, TNBC can be particularly aggressive, and more likely to recur than the other subtypes of breast cancer. In addition, TNBC accounts for a significant 15%>25% of breast cancer cases [Reddy, 2011]. Thus, improved diagnostic and therapeutic approaches for TNBC are urgently needed. Long Interspersed Nuclear Element 1 (L1) is one of the common retrotransposons present in the human genome comprising approximately 17% of the genomic sequence. L1 is rarely expressed in normal healthy tissues but its expression is common in a variety of human cancers including breast cancer [Rodic and Burns, 2013]. L1 encodes a reverse transcriptase (RT) enzyme that may have a key role in tumorigenesis [Rangasamy, 2014] and recent studies have revealed that anti-retroviral drugs targeting L1-RT may effectively reduce cancer cell proliferation in prostate and pancreatic cancer [Houédé *et al.*, 2014; Hecht *et al.*, 2015]. Inhibition of RT activity has also been shown to promote differentiation in a number of progenitor and transformed cell types [Spadafora, 2004]. The aim of this study is to explore the efficacy and mechanisms of blockade of L1-RT in a range of TNBC cell lines with anti-retroviral drugs, which target the RT of HIV-1, and may target L1-RT as well.

Methods: The experiments in this study were based on the comparisons between anti-retroviral drug treated and untreated-control TNBC cells. Immunofluorescence was used to inspect morphological changes in drug-treated and control TNBC cells, followed by quantitative RT-PCR and western blotting for the expression of L1 RNA and L1 protein. Flow cytometry was used to detect cell proliferation, cell cycle progression and apoptosis. **Results:** All tested TNBC cell lines express L1 protein whereas non-cancerous cells express L1 at minimal levels. Our studies show that some, but not all, anti-retroviral drugs reduce the expression of L1 at both the RNA and protein levels and reduce cell proliferation. We also observed that exposure of TNBC cells to anti-retroviral drugs induces apoptosis, affects the cell cycle and leads to morphological changes. **Conclusion:** This study:
- Indicate that L1 expression might be a useful diagnostic biomarker for TNBC.
- Confirm that L1 can be inhibited effectively by certain anti-retroviral drugs.
- Characterize the morphological and physiological effects of certain anti-retroviral drugs in TNBC cells.
- Reveal that anti-retroviral drugs may cause cancer cell death though targeting L1 and blocking its reverse transcriptase function.
- Imply that blockade of L1-RT may have potential therapeutic value in TNBC.
Additional studies are necessary to understand the molecular mechanisms of these anti-retroviral drugs.
Disclosure of Interest: None declared

P60

DIFFERENCES IN TRIORGANOMETALLICS-INDUCED CYTOTOXICITY AND MODULATION OF MIGRATION IN TRIPLE-NEGATIVE BREAST CANCER CELL LINE MDA-MB-231

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Problem Statement: Organometallic compounds have been gaining growing importance in oncology Among them, tin derivatives appear to be very promising as potential drug candidates. We studied eight triorganometallic derivatives, nuclear retinoid X receptor (RXR) ligands and two germanium containing derivates that do not serve as RXR ligands. **Methods:** Cytotoxicity was determined by MTT assay, the concentration of drug that inhibited cell survival to 50% (IC_{50}) was determined by Calcusyn software (version 1.1, Biosoft). Migration assay was performed in the IncuCyte ZOOM™ Kinetic Imaging System and evaluated by IncuCyte ZOOM™ 2013A software (Essen BioScience, UK) based on the relative wound density measurements. **Results:** Tributylgermanium chloride (TBGe) and triphenylgermanium chloride (TPGe) did not inhibit growth of human triple negative MDA-MB-231 breast cancer cells. On the other hand, the tributyltin derivatives were highly, the triphenyltin derivatives less cytotoxic, both groups with IC_{50} values of nanomolar range. Those derivatives that showed no or weak cytotoxicity, TBGe, TPGe, and triphenyltin acetate, we found to reduce migration of tested triple negative breast cancer cells. **Conclusion:** In conclusion, our data has shown that the cytotoxic trialkyltin- or triaryltin derivatives behave differently in comparison with the non-toxic trialkylgermanium or triarylgermanium compounds. Nontoxic concentrations of two triorganogermanium (TBGe, TPGe) compounds and one triorganotin derivative, (TPT-Ac) can reduce migration of triple negative breast cancer cells.

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Disclosure of Interest: None declared

P61

HIGH PD-L1 EXPRESSION IS CLOSELY ASSOCIATED WITH TUMOR-INFILTRATING LYMPHOCYTES AND LEADS TO GOOD CLINICAL OUTCOMES IN CHINESE TRIPLE NEGATIVE BREAST CANCER PATIENTS

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Problem Statement: In order to investigate the role of Programmed death ligand 1 (PD-L1) expression and tumor-infiltrating lymphocytes (TILs) in tumor recurrence and metastasis of Chinese patients suffering from triple negative breast cancer(TNBC). **Methods:** PD-L1 immunohistochemistry was performed on 215 TNBCs. Also, the prevalence of TILs correlated with the expression of PD-L1 and TILs with clinical outcomes. Kaplan-Meier and the model analyses of univariate Cox proportional hazards were utilized to compare the survival rate of patients with positive PD-L1 expression with those with negative PD-L1 expression. **Results:** The median follow-up time was 67.7 months (range: 7-159 months). PD-L1-positive breast cancer patients had significantly longer disease-free survival (DFS) and Overall survival (OS) compared with PD-L1-negative patients (P=0.046; P=0.019) in TNBC. The presence of increased stromal lymphocytic infiltrates (STILs) was significantly associated with overall survival (P=0.026). The model analysis of univariate Cox proportional hazards showed that PD-L1 and STILs were independent prognostic factors for tumor prognosis.
Image/Graph:

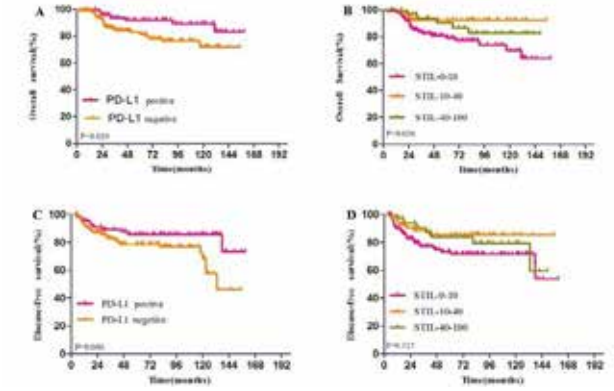

Table:

Multivariate analyses for OS and DFS

Variable	OS			DFS		
	HR	95% CI	P	HR	95% CI	P
Tumor size (<2.0 v 2.1-5.0 v >5cm)	1.615	0.868 to 3.004	0.13	1.763	0.936 to 3.323	0.079
Grade (I v II v III)	0.587	0.114 to 3.031	0.525	0.779	0.155 to 3.915	0.761
Positive Lymph nodes (0 v 1-3 v 4-9 v ≥10)	2.685	1.925 to 3.747	<0.01	2.368	1.759 to 3.187	<0.01
PD-L1 (positive v negative)	0.302	0.127 to 0.721	0.007	0.451	0.211 to 0.963	0.04
Stromal TIL (0-10 v 11-40 v 41-100)	0.418	0.092 to 1.891	0.257	1.249	0.337 to 4.632	0.74
TOTAL TIL (0-10 v 11-40 v 41-100)	1.017	0.302 to 3.420	0.979	0.656	0.200 to 2.154	0.487
Stromal TIL (<50 v ≥50(LPBC))	10.549	1.740 to 63.952	0.01	2.202	0.535 to 9.057	0.274

Abbreviations: Programmed death ligand 1 (PD-L1) and stromal lymphocytic infiltrates (STILs)

Conclusion: This study found that PD-L1 expression and TILs in particular were biologically important in TNBC. Our study found that high levels of PD-L1 could be expressed in TNBC, which was correlated with the prevalence of TILs. This study suggested that the potential of using PD-L1 was based on immunotherapy for the TNBC treatment.
Disclosure of Interest: None declared

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APPROPRIATE MANAGEMENT FOR ELDERLY PATIENTS WITH TRIPLE NEGATIVE BREAST CANCER

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Problem Statement: Recently, elderly breast cancer patients have been increasing as the population is aging rapidly in Japan. The population of triple negative breast cancer (TNBC) in elderly is also increasing. There is no established standard chemotherapy that was ensured necessity and safety for elderly TNBC patients, therefore we often skip chemotherapy for them. We tried to analyze clinicopathological characteristics, prognosis and treatment of TNBC patients whose ages were over 70. **Methods:** We picked up patients in our surgical database who were over 70 years old at their operation date from January 2010 to April 2017. Then we chose invasive ductal carcinoma (IDC) with TNBC, except for Stage IV. Finally, 35 patients met the criteria. They were divided into 2 groups, one was the patients from 70 to 80 (70 -80), the other was over 80 years of age (over 80). We compared these two groups on clinicopathological characteristics, process of treatment. Moreover, relapse-free survival (RFS) and overall survival (OS) were compared among these groups by Kaplan-Meier curves, and log-rank tests. **Results:** All patients were female with median age of 76 years. Median follow-up periods were 27 months. Twenty-seven patients were classified into 70 – 80 group, and 8 patients were over 80. Mastectomy was performed in 24 (89%) patients and breast-conserving surgery was performed in 3 (11%) patients in 70-80 group, whereas, all the patients over 80 group received mastectomy (NS). In 70-80 group, 23 patients had sentinel lymph node biopsy (SNB), nine patients had Axillary lymph node dissection (Ax) including 5 with SNB positive cases. In over 80 group seven patients had SNB, two patients had Ax including one with positive case (NS). In 70-80 group 13 (48%) patients were diagnosed with IDC and the other 14 (52%) patients were diagnosed with special type, on the other hand, in over 80 group all patients were diagnosed with IDC (p=0.015). The median greatest dimension of their invasive lesion is 1.7cm (1.4-3.0cm) in 70-80 group and 3.0cm (2.1-3.6cm) in over 80 group (p=0.36). Seven patients (26%) had axillary lymph node metastases in 70-80 group, and only one (12.5%) in over 80 group (p=0.65). The median Ki-67 score is 35% (20-65%) in 70-80 group, 60% (32.5-65%) in over 80 group(p=0.363). Sixteen (59%) surgical specimens showed nuclear grade 3 in 70-80 group, while 7 (88%) in over 80 group (p=0.6). Eight (30%) patients received neoadjuvant or adjuvant chemotherapy in 70-80 group, on the other hand, none had in over 80 group (p=0.15). Three (11%) patients in 70-80 group and two (25%) patients in over 80 group occurred recurrences during follow-up period. Only one patient in both groups died during the period. There were no significant differences with both RFS and OS between the two groups. (p=0.34, p=0.40)

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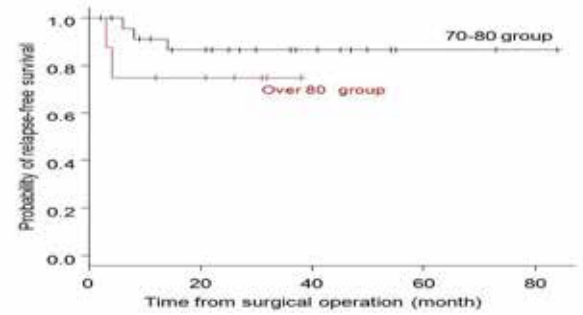

Conclusion: Between 70-80 group and over 80 group, there were almost no significant differences in clinicopathological characteristics, treatment, prognosis except for rate of special type, especially 7 apocrine type. They had rather favorable prognosis in spite of high Ki67 and insufficient chemotherapy.

Disclosure of Interest: None declared

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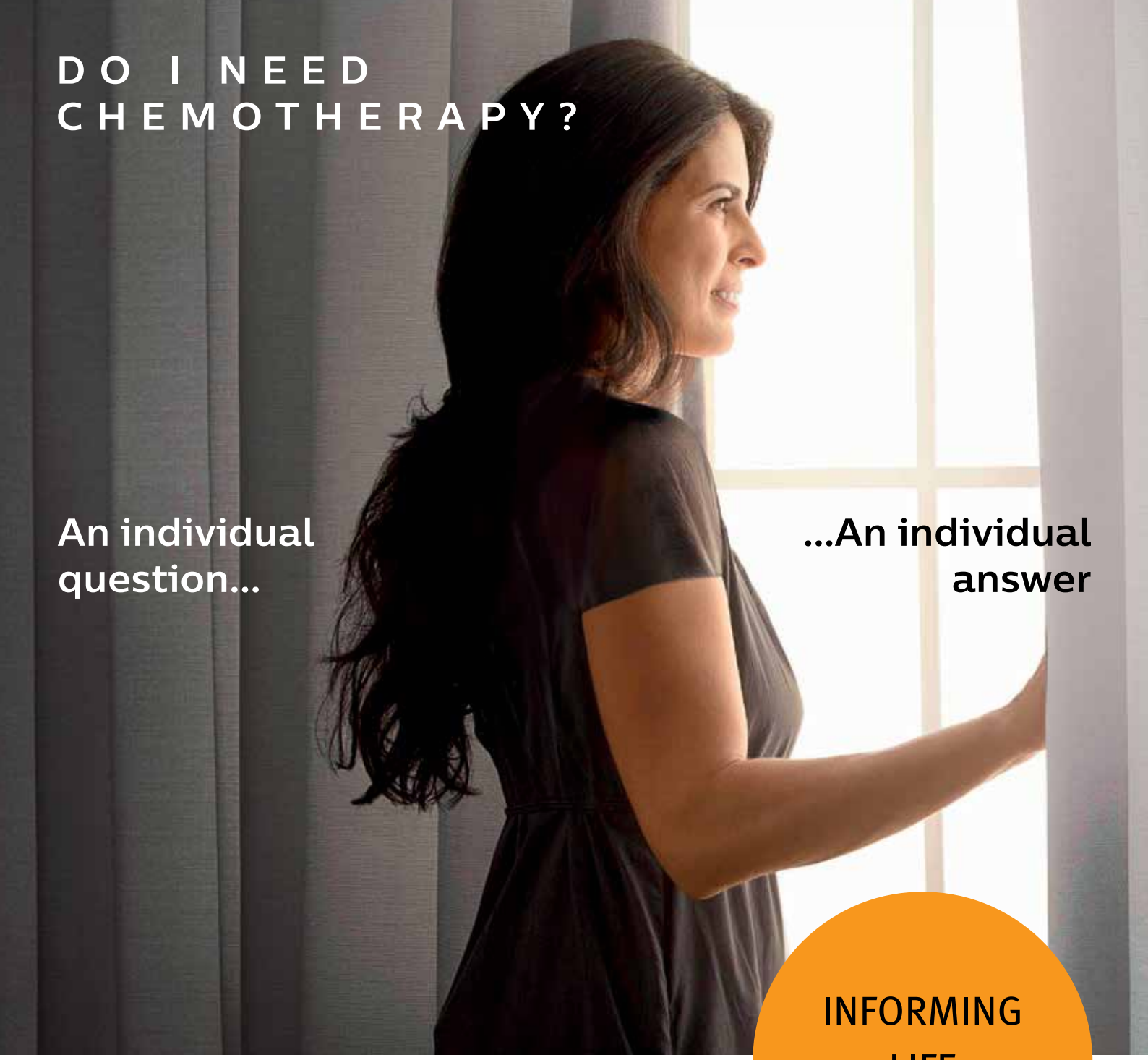

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3. Paik S et al. *J Clin Oncol* 2006; 24: 3726-3734; **4.** Albain KS et al. *Lancet Oncol* 2010;11: 55-65.

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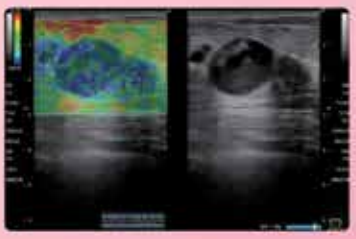

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