Melbourne International Joint Breast Congress

Australasian Society for Breast Disease (ASBD)

4th World Congress on Controversies in Breast Cancer (CoBrCa)

Breast Surgeons of Australia & New Zealand (BreastSurgANZ)

MELBOURNE Convention Bureau

MELBOURNE Victoria Australia

CONGRESS PROGRAM

Melbourne, Australia

October 11-13, 2018

www.melbournebreast2018.org

TIMETABLE

Thursday, October 11, 2018

	Hall A	Hall B	Hall C	Hall D
09:00-12:20		**Pre-Congress Workshop 1:** From concept to publication: Clinical trials in cancer	**Pre-Congress Workshop 2:** Pathology – shades of grey: When the answer is non-definitive	**Pre-Congress Workshop 3:** The challenging patient
12:20-13:20	*Lunch break*			
13:20-16:40		**Pre-Congress Workshop 4:** Managing breast cancer in resource poor locations	**Pre-Congress Workshop 5:** Radiation oncology	**Pre-Congress Workshop 6:** The tortuous road to diagnosis
16:40-17:15	*Break*			
17:15-17:30	**Congress Opening**			
17:30-19:00	**Plenary Session 1:** Neoadjuvant therapy			
19:00	**Networking Reception**			

Friday, October 12, 2018

	Hall A	Hall B	Hall C
07:00-08:30	**Morning Industry Symposium:** Practice changing new perspectives on genomic profiling in the management of ER+, HER2- Early Breast Cancer *Supported by Genomic Health*	**Morning Industry Symposium:** CDK4/6 inhibitors in advanced breast cancer: The future is now *Supported by Pfizer*	
08:30-09:30	**Parallel Session 2:** Screening	**Parallel Session 3:** Keeping patients on their endocrine treatments	**Parallel Session 4:** Free Papers: Medical oncology
09:30-11:00	**Plenary Session 5:** Genetics		
11:00-11:30	*Coffee break and poster viewing*		
11:30-12:30	**Parallel Session 6:** Imaging	**Industry Symposium:** Clinical controversies in HER2+ early breast cancer *Supported by Roche*	**Parallel Session 7:** Free Papers: Surgery/Radiotherapy
12:30-13:30	*Lunch break and poster viewing*		
13:30-14:30	**Parallel Session 8:** Controversies in reconstruction	**Industry Symposium:** New paradigms in the treatment of HR+HER2- mBC: CDK4/6 inhibitors and beyond *Supported by Novartis*	
14:30-15:50	**Plenary Session 9:** Adjuvant endocrine therapy		
15:50-16:10	*Coffee break and poster viewing*		
16:10-17:30	**Parallel Session 10:** Molecular assays	**Parallel Session 11:** Life after breast cancer	

Saturday, October 13, 2018

	Hall A	Hall B	Hall C
07:00-08:30		**Morning Industry Symposium:** Old favourites, new strategies: Chemotherapy and the treatment of MBC *Supported by Eisai*	**Morning Industry Symposium:** Attractive techniques for localisation and staging: Tools for everyone *Supported by EBOS and Magseed*
08:30-09:30	**Parallel Session 12:** DCIS	**Parallel Session 13:** Topics in chemotherapy	**Parallel Session 14:** Free Papers: Screening/Treatment effects/ Supportive care
09:30-11:00	**Plenary Session 15:** Loco-Regional therapy		**10:30-13:00** **Breast Cancer Network Australia**
11:00-11:30	*Coffee break and poster viewing*		
11:30-13:00	**Parallel Session 16:** Local therapy	**Industry Symposium:** Key issues around bone health *Supported by Amgen*	
13:00-14:00	*Lunch break and poster viewing*		
14:00-15:00	**Parallel Session 17:** Exercise and lymphoedema	**Parallel Session 18:** CNS metastases	**Parallel Session 19:** Breast surgery
15:00-16:15	**Plenary Session 20:** Breast Cancer 2025		
16:15-16:30	Congress closing and Award presentation		

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WELCOME LETTER

Dear Friends and Colleagues,

We are pleased to welcome you to the Melbourne International Joint Breast Congress (MIBC), held jointly with the Australasian Society for Breast Disease (ASBD), 4th World Congress on Controversies in Breast Cancer (CoBrCa) and Breast Surgeons of Australia and New Zealand (BreastSurgANZ).

The Joint Congress combines the traditional features of the conferences of all three organisations - a wide multidisciplinary program, in depth analysis of various aspects of breast surgical practice, and an approach of directly addressing key issues facing clinicians in their daily practice. We believe that the collaboration has created a multi-faceted congress of interest to all involved in the treatment of breast disease.

We are delighted to have assembled a stellar international and national faculty, and thank all of those who have agreed to participate and those who have submitted abstracts.

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 is an informative and enjoyable experience.

Enjoy your time in the exciting and modern city of Melbourne.

Sincerely,
Congress Chairpersons

Yvonne Zissiadis, Australia
Australasian Society for Breast Disease (ASBD)

Bruce Mann, Australia
4th World Congress on Controversies in Breast Cancer (CoBrCa)

Christobel Saunders, Australia
Breast Surgeons of Australia and New Zealand (BreastSurgANZ)

MESSAGE OF WELCOME FROM THE MINISTER FOR HEALTH & AMBULANCE SERVICES

It gives me great pleasure to welcome you to Victoria for the Melbourne International Joint Breast Congress.

Victoria has been at the forefront of evolving state, national and international approaches to improve breast cancer outcomes. We are proudly home to some of the best and brightest medical minds who are leading the way in revolutionary discoveries that will save lives.

The Victorian Government has a broad, comprehensive strategy to tackle cancer and cancer-related illnesses, through our *Victorian cancer plan 2016-2020*. The plan establishes long-term goals to prevent cancer, increase survival, improve the experience of the cancer treatment and care system and achieve equitable outcomes for all Victorians.

Breast cancer is the most common new cancer for women in Australia. We know that a diagnosis of breast cancer can be challenging for the patient, their family, their friends and their community. It is wonderful to know that over the last few decades, advances in treatment and care have led to Victoria achieving a five-year survival rate of 91 per cent.

The Victorian Government is proud to support services and initiatives across the whole cancer continuum including breast cancer screening, peer support organisations, survivorship, clinicians and researchers to improve outcomes associated with breast disease.

The Melbourne International Joint Breast Congress brings together world leading experts to discuss current issues in breast disease including medical oncology, surgery, radiation oncology, pathology, reconstruction, breast imaging, allied health and survivorship issues.

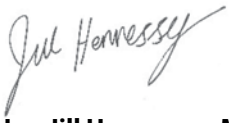
I encourage you all to use this event as an opportunity to share ideas and strengthen international relationships to effectively address clinical and therapeutic problems in breast disease.

As you take part in this important event, I hope you have the chance to enjoy some of what our great state has to offer.

Melbourne is a city celebrated for its food, shopping, sports, arts, culture and year-round festivities, and, within a stone's throw of the city we have spectacular coastlines, wildlife reserves, wineries, temperate rainforests, surf beaches, mountains and historic townships.

Please enjoy your time here in our wonderful state, and I wish you the very best for a very productive meeting.

Yours sincerely



Hon Jill Hennessey MP

Minister for Health
Minister for Ambulance Services
State Government of Victoria

COMMITTEES

Chairpersons

Yvonne Zissiadis, *Australia*
Australasian Society for Breast Disease (ASBD)

Bruce Mann, *Australia*
4th World Congress on Controversies in Breast Cancer (CoBrCa)

Christobel Saunders, *Australia*
Breast Surgeons of Australia and New Zealand (BreastSurgANZ)

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Catherine Shannon, Brisbane
Lisa Sheeran, Melbourne
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Lesley Stafford, Melbourne
Nicholas Wilcken, Sydney

GENERAL INFORMATION

Congress Venue
Melbourne Convention and Exhibition Centre (MCEC)
1 Convention Centre Pl,
South Wharf, Melbourne Victoria,
Australia 3006
mcec.com.au

Language
English is the official language of the Melbourne International Joint Breast Congress (MIBC).

Registration Desk
The registration desk will be open during the following hours:

Thursday, October 11, 2018	**07:30 – 19:30**
Friday, October 12, 2018	**06:45 – 17:30**
Saturday, October 13, 2018	**06:45 – 16:30**

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 13, 2018.

Exhibition
The exhibition will be open during session hours. Lunch and coffee breaks will be held at the exhibition area on Friday, October 12 and Saturday, October 13, 2018.

Clothing
Business casual for all occasions.

Smoking policy
This is a non-smoking event.

Refreshments
A Networking Reception will be held in the exhibition area on Thursday, October 11, 2018 at 19:00.
Breakfast will be served prior to the morning symposia on Friday, October 12 and Saturday, October 13, 2018.
Lunch will be served in the exhibition area during the lunch breaks on Friday, October 12 and Saturday, October 13, 2018.
Coffee will be served during the coffee breaks throughout the congress.

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 poster board number on which you should display your poster/s.
There will be two poster shifts. Posters should be mounted between 07:30-08:30 on:
Friday, October 12, 2018 and removed by the end of sessions on the same day
OR
Saturday, October 13, 2018 and removed by the end of sessions on the same day.

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 Melbourne International Joint Breast Congress. Participants should make their own arrangements with respect to health and travel insurance.

Congress Organizer

CongressMed
www.congressmed.com

CPD ACCREDITATION

Royal Australasian College of Physicians (RACP)
Fellows of the Royal Australasian College of Physicians (RACP) should individually claim CPD credits in the online MyCPD program, based on the number of hours they have attended. The MyCPD program is a self-directed and self-reporting tool enabling participants to record and report on CPD activities they judge relevant to the scope of their practice.

Fellows can claim 1 credit per hour of attendance at the MIBC congress in the MyCPD program.

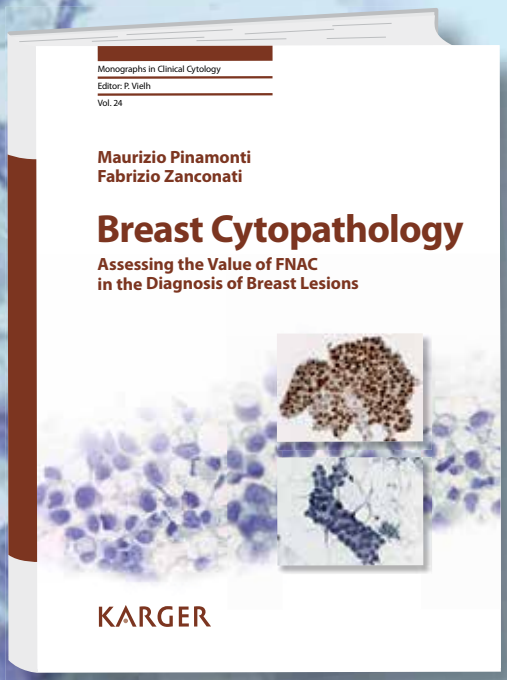
Royal Australasian College of General Practitioners (RACGP)
Fellows of the Royal Australasian College of General Practitioners (RACGP) may claim QI&CPD points by self-recording online at the RACGP website www.racgp.org.au and supplying a certificate of attendance with the program outline.

The Royal Australian and New Zealand College of Radiologists (RANZCR)
A total of 20.25 RANZCR CPD points can be claimed for attendance at the Melbourne International Joint Breast Congress (MIBC).
4.75 points may be claimed for attendance on 11/10/2018.
8 points may be claimed for attendance on 12/10/2018.
7.5 points may be claimed for attendance on 13/10/2018.
For anyone who attends only part of a session, points may be claimed pro rata at 1 point per hour per lecture.

Royal Australasian College of Surgeons
This educational activity has been approved in the RACS CPD Program. Fellows who participate can claim one point per hour in Maintenance of Knowledge and Skills.

Participation in this activity will be populated into your RACS CPD Online.

Key titles for you!



Monographs in Clinical Cytology, Vol. 24

Pinamonti, M.; Zanconati, F. (Trieste)

Breast Cytopathology

Assessing the Value of FNAC in the Diagnosis of Breast Lesions

VI + 118 p., 126 fig., 119 in color, hard cover, 2018
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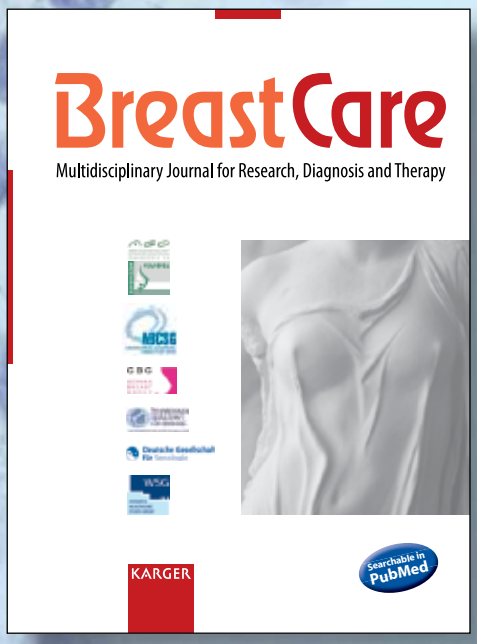

BreastCare

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SCIENTIFIC PROGRAM

Melbourne International Joint Breast Congress

Australasian Society for Breast Disease (ASBD)

4th World Congress on Controversies in Breast Cancer (CoBrCa)

Breast Surgeons of Australia & New Zealand (BreastSurgANZ)

Editor in Chief

Ruth O'Regan, MD

Clinical Breast Cancer

Clinical Breast Cancer is a peer-reviewed bimonthly journal that publishes original articles describing various aspects of clinical and translational research of **breast cancer**. *Clinical Breast Cancer* is devoted to articles on **detection**, **diagnosis**, **prevention**, and **treatment** of breast cancer. The main emphasis is on recent scientific developments in all areas related to breast cancer. Specific areas of interest include clinical research reports from various therapeutic modalities, cancer genetics, drug sensitivity and resistance, novel imaging, tumor genomics, biomarkers, and chemoprevention strategies.

MOST DOWNLOADED ARTICLES FROM SCIENCE DIRECT IN THE LAST 90 DAYS

Molecular Testing and the Pathologist's Role in Clinical Trials of Breast Cancer *Volume 16, Issue 3, June 2016, Pages 166-179*
Han, H.; Magliocco, A..

Vaginal Atrophy in Breast Cancer Survivors: Attitude and Approaches Among Oncologists *Volume 17, Issue 8, December 2017, Pages 611-617*
Biglia, N.; Bounous, V.; D'Alonzo, M.; Ottino, L.; Tuninetti, V.; Robba, E.; Perrone, T.

Effects of Second and Subsequent Lines of Chemotherapy for Metastatic Breast Cancer *Volume 15, Issue 1, February 2015, Pages e55-62*
Park, I.; Lee, K.; Ro, J.

SUPPORTS OPEN ACCESS

Clinical Breast Cancer offers authors the option to publish papers Open Access. See the journal homepage for details:
www. clinical-breast-cancer.com

MOST CITED ARTICLES PUBLISHED SINCE 2014, EXTRACTED FROM SCOPUS

Equivalent Survival with Mastectomy or Breast-conserving Surgery Plus Radiation in Young Women Aged < 40 Years with Early-Stage Breast Cancer: A National Registry-based Stage-by-Stage Comparison
Volume 15, Issue 5, 1 October 2015, Pages 390-397
Ye, J.C., Yan, W., Christos, P.J., Nori, D., Ravi, A.

Utility of Oncotype DX Risk Assessment in Patients with Invasive Lobular Carcinoma *Volume 16, Issue 1, 1 February 2016, Pages 45-50*
Tsai, M.L., Lillemoe, T.J., Finkelstein, M.J., Money, J.E., Susnik, B., Grimm, E., Kang, S.-H.L., Swenson, K.K.

Dosing and Safety Implications for Oncologists When Administering Everolimus to Patients with Hormone Receptor-Positive Breast Cancer *Volume 16, Issue 1, 1 February 2016, Pages 18-22*
Rugo, H.S.

ELSEVIER

Visit the journal homepage and check out a FREE sample issue:
www.clinical-breast-cancer.com

Thursday, October 11, 2018

09:00-12:20 **Pre-Congress Workshop 1:**
From concept to publication: Clinical trials in cancer

Hall B

Chairperson: **Arlene Chan,** *Australia*

Speakers: **Arlene Chan,** *Australia* - Medical oncology
Boon Chua, *Australia* - Radiation oncology
Andrew Spillane, *Australia* - Breast surgery

09:00-09:10 Opening: Goals and benefits of clinical research
Arlene Chan, *Australia*

09:10-09:40 Goals of workshop: Spectrum of research, GCP/NHMRC, trial conduct, protocol basics
Arlene Chan, *Australia*

Questions from the audience

09:45-10:00 Phases of clinical trials, protocol development
Arlene Chan, *Australia*

Regulatory, ethics and governance
Arlene Chan, *Australia*

10:00-10:30 Group activity

10:30-10:50 *Coffee Break*

10:50-11:20 Group presentation and discussion

11:20-11:40 Scope and pitfalls of surgical research
Andrew Spillane, *Australia*

11:40-12:00 Scope and pitfalls of radiation oncology research
Boon Chua, *Australia*

12:00-12:15 How to present at a clinical meeting
Arlene Chan, *Australia*

12:15-12:20 Roundup

09:00-12:20 **Pre-Congress Workshop 2:**
Pathology – shades of grey: When the answer is non-definitive

Hall C

Chairperson: **Nirmala Pathmanathan,** *Australia*

09:00-09:30 Spindle cell lesions of the breast and their significance
Stephen Fox, *Australia*

09:30-10:00 The spectrum of lesions from atypia to DCIS and lobular neoplasia, significance and management
Sunil Lakhani, *Australia*

10:00-10:30 Radial scars, papillomas and other benign proliferative lesions, significance and management
Gelareh Farshid, *Australia*

10:30-10:50 *Coffee Break*

10:50-11:20 ER, PR and HER2 testing controversies and the classification of breast cancer
David Clouston, *Australia*

11:20-12:10 Breast cancer prognosis: Is grade still relevant?
Nirmala Pathmanathan, *Australia*

12:10-12:20 Panel discussion

09:00-12:20 **Pre-Congress Workshop 3:**
The challenging patient

Hall D

Chairperson: **Norman Swan,** *Australia*

09:00-09:15 Who are the challenging patients and how do they challenge us?
Christobel Saunders, *Australia*

09:15-09:35 Can we understand their challenges?
Jane Turner, *Australia*

09:35-09:55 What are our legal obligations?
Ian Freckelton, *Australia*

09:55-10:15 The US experience
Reshma Jagsi, *USA*

10:15-10:30 Managing challenging ~~patients~~ clinician-patient encounters
Lesley Stafford, *Australia*

10:30-10:50 *Coffee Break*

10:50-12:20 Panel and audience discussion
Christobel Saunders, *Australia*; **Ian Freckelton,** *Australia;* **Reshma Jagsi,** *USA;* **Lesley Stafford,** *Australia;* **Fran Boyle,** *Australia;* **Jane Turner,** *Australia*; **Alexis Butler,** *Australia;* **Kerry Shanahan,** *Australia;* **Danielle Spence,** *Australia*

12:20-13:20 *Lunch Break*

13:20-16:40 **Pre-Congress Workshop 4:**
Managing breast cancer in resource poor locations

Hall B

Chairperson: **Jacinta Elston,** *Australia*

13:20-13:30 Introduction
Jacinta Elston, *Australia*

13:30-14:00 East Timor - setting up a breast service in one of the world's most resource poor nations
Alito Soares, *Timor Leste*
Danielle Spence, *Australia*
Christobel Saunders, *Australia*

14:00-14:20 Developing breast cancer services and advocacy in India
Raghu Ram, *India*

14:20-14:40 How to get radiotherapy to resource-poor nations
Mei Ling Yap, *Australia*

14:40-15:00 *Coffee Break*

15:00-15:20 Breast cancer in Maori and Pasifika
Ian Campbell, *New Zealand*

15:20-15:50 Breast cancer in Indigenous Australia
Jacinta Elston, *Australia*
Jennifer Chynoweth, *Australia*

15:50-16:40 Panel discussion:
Jacinta Elston, *Australia*; **Alito Soares,** *Timor Leste*; **Danielle Spence,** *Australia*; **Christobel Saunders,** *Australia*; **Raghu Ram,** *India*; **Mei-Ling Yap,** *Australia*; **Ian Campbell**, *New Zealand*; **Jennifer Chynoweth,** *Australia*; **Josese Turageva,** *Fiji*

13:20-16:40 **Pre-Congress Workshop 5:**
Radiation oncology

Hall C

Chairpersons: **Minjae Lah,** *Australia*
Yvonne Zissiadis, *Australia*

13:20-13:25 Welcome and introduction of speakers
Minjae Lah, *Australia*
Yvonne Zissiadis, *Australia*

13:25-13:45 Post-mastectomy RT in node negative and N1 patients
Reshma Jagsi, *USA*

13:45-14:05 Discussion

14:05-14:25 Cardiotoxicity: When do we start to worry?
Lori Pierce, *USA*

14:25-14:50 Discussion

14:50-15:10 *Coffee Break*

15:10-15:30 Integrating RT and breast reconstruction
Reshma Jagsi, *USA*

15:30-15:45 Discussion

15:45-16:00 Cardio-oncology programs: Part of our quality control?
Lori Pierce, *USA*

16:00-16:20 Q & A

13:20-16:40 **Pre-Congress Workshop 6: The tortuous road to diagnosis** — **Hall D**

Chairperson: **Jill Evans,** *Australia*

13:20-13:40 When is a lump a lump?
Jennifer O'Sullivan, *Australia*

Radiology:
13:40-14:10 Breastscreen assessment: Not always smooth sailing
Nick Repin, *Australia*

14:10-14:40 Imaging diagnostic conundrums
Liz Wylie, *Australia*

14:40-15:00 *Coffee Break*

Surgery & Pathology:
15:00-16:00 Uncertainties and grey areas in breast pathology: When is surgical intervention needed?
Nirmala Pathmanathan, *Australia*
Elisabeth Elder, *Australia*

16:00-16:40 Panel and audience discussion

17:15-17:30 **Congress Opening** — **Hall A**

17:30-19:00 **Plenary Session 1: Neoadjuvant therapy** — **Hall A**

Chairpersons: **Richard de Boer,** *Australia*
Christobel Saunders, *Australia*

17:30-18:00 **DEBATE:** That decisions regarding NAST should be based on TN stage rather than breast cancer subtype
17:30 **TN stage: Bruce Mann**, *Australia*
17:40 **Breast cancer subtypes: Stephen Johnston**, *UK*
17:50 Discussion

18:00-18:30 The potential of neoadjuvant endocrine therapy
Mitch Dowsett, *UK*

18:30-19:00 **DEBATE:** That further chemotherapy should be recommended for patients with ER-ve cancer not achieving pCR
18:30 **Yes: Stacy Moulder**, *USA*
18:40 **No: Nicholas Wilcken**, *Australia*
18:50 Discussion

19:00 **Networking Reception**

Friday, October 12, 2018

07:00-08:30 **Morning Industry Symposium:**
Practice-changing new perspectives on genomic profiling in the management of HR+, HER2- Early Breast Cancer
Supported by Genomic Health

Hall A

Breakfast will be served prior to the session

For full details, please refer to page 109

07:00-08:30 **Morning Industry Symposium:**
CDK4/6 inhibitors in advanced breast cancer: The future is now
Supported by Pfizer

Hall B

Breakfast will be served prior to the session

For full details, please refer to page 109

08:30-09:30 **Parallel Session 2:**
Screening

Hall A

Chairpersons: **Gelareh Farshid,** *Australia*
Allison Rose, *Australia*

08:30-09:05 **DEBATE:** That BreastScreen Australia requires urgent and radical reform
08:30 **Yes: Alexandra Barratt**, *Australia*
08:40 **No: Bruce Mann**, *Australia*
08:50 Discussion

09:05-09:20 Mammographic density
Jack Cuzick, *UK*

09:20-09:30 Validation of iPrevent, an online breast cancer risk assessment and risk management decision support tool
Kelly-Anne Phillips, *Australia*

08:30-09:30 **Parallel Session 3:**
Keeping patients on their endocrine treatments

Hall B

Chairpersons: **Nicole McCarthy,** *Australia*
Lisa Sheeran, *Australia*

08:30-08:50 The biology of endocrine side effects
Mitch Dowsett, *UKend*

08:50-09:05 Below the breast: Managing genitourinary symptoms
Martha Hickey, *Australia*

09:05-09:30 **DEBATE:** How to best manage endocrine therapy symptoms: Pharma or sweat?
09:05 **SWEAT: Prue Cormie**, *Australia*
09:15 **PHARMA: Fran Boyle**, *Australia*
09:25 Discussion

08:30-09:30 **Parallel Session 4:**
Free Papers: Medical oncology

Hall C

Chairpersons: **Nick Murray,** *Australia*
Catherine Oakman, *Australia*

08:30-08:40 Neoadjuvant chemotherapy rates for breast cancer in Australia: Are we there yet?
Paul Patiniott, *Australia*

08:40-08:50 Curative Intent Stereotactic Ablative Body Radiotherapy (SABR) in oligometastatic breast cancer: Final results of a Phase I clinical trial
Steven David, *Australia*

08:50-09:00 Cryoablation of breast cancer in metastatic patients. Preliminary experience
Claudio Pusceddu, *Italy*

09:00-09:10 Ribociclib with endocrine therapy for premenopausal women with hormone receptor positive (HR+), HER2-negative (HER2–) advanced breast cancer (ABC): Additional results from the Monaleesa-7 trial
Louis Chow, *Hong Kong*

09:10-09:20 Canassist-breast: Unique immunohistochemistry based test for risk of recurrence prediction for early stage breast cancer patients: A cost-effective, accurate and broad based solution for Asia
Manjiri Bakre, *India*

09:20-09:30 Phase 2 keynote-086 trial: Relationship between response to pembrolizumab and tumor infiltrating lymphocyte (TIL) levels in metastatic triple-negative breast cancer (mTNBC)
Sherene Loi, *Australia*

09:30-11:00 **Plenary Session 5:**
Genetics

Hall A

Chairpersons: **Geoff Lindeman,** *Australia*
Lara Lipton, *Australia*

09:30-10:00 **DEBATE:** That most patients with breast cancer should be panel tested for germline mutations
09:30 **Yes: Paul James,** *Australia*
09:40 **No: Marion Harris,** *Australia*
09:50 Discussion

10:00-10:30 The medical implications of panel testing: Platinums/PARPi's
Rebecca Dent, *Singapore*

10:30-11:00 **DEBATE:** That gene carriers diagnosed with cancer should be strongly advised to undergo bilateral mastectomy
10:30 **Yes: James French,** *Australia*
10:40 **No: Christopher Pyke,** *Australia*
10:50 Discussion

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

11:30-12:30 **Parallel Session 6: Imaging** — **Hall A**

Chairpersons: **Seigo Nakamura,** *Japan*
Belinda Yeo, *Australia*

11:30-11:50 Assessment of response to neoadjuvant chemotherapy
Clair Shadbolt, *Australia*

11:50-12:10 New paradigms in breast imaging: The 7-8 minutes that make a difference
Allison Rose, *Australia*

12:10-12:30 PET in breast cancer
Kate Moodie, *Australia*

11:30-12:30 **Industry Symposium: Clinical controversies in HER2+ early breast cancer** — **Hall B**
Supported by Roche

For full details, please refer to page 111

11:30-12:30 **Parallel Session 7: Free Papers: Surgery/Radiotherapy** — **Hall C**

Chairpersons: **Michael Chao,** *Australia*
Sanjay Warrier, *Australia*

11:30-11:40 Radioactive iodine seed localization in axilla with sentinel node biopsy (RISAS): A Dutch prospective multicenter trial on axillary staging after neoadjuvant chemotherapy in node positive breast cancer
Natacha Ruyssers, *Belgium*

11:40-11:50 Spy fluoresence angiography: An adjunct to identifying cases suitable for staged breast reconstruction
Nita Bartlett, *Australia*

11:50-12:00 Intraoperative Assessment (IOA) of the Sentinel Node (SN) in breast cancer by One Step Nucleic acid Assay (OSNA): Warwick experience of over 1100 patients
Dayalan Clarke, *UK*

12:00-12:10 Implications of the St George randomized breast boost trial for reduced volume or dose breast radiotherapy strategies
Peter Graham, *Australia*

12:10-12:20 Active monitoring is an acceptable choice for women with low risk ductal carcinoma in situ (DCIS): An assessment of quality of life
Hannah Bromley, *Australia*

12:20-12:30 The UK-ANZ NeST (neoadjuvant systemic therapy in breast cancer) multicenter collaborative study
Stuart McIntosh, *UK*

12:30-13:30 *Lunch break and poster viewing*

13:30-14:30 **Parallel Session 8:**
Controversies in reconstruction

Hall A

Chairpersons: **Elisabeth Elder,** *Australia*
Andrew Spillane, *Australia*

13:30-14:00	**DEBATE:** That neoadjuvant RT prior to TM/reconstruction is a better approach than post-mastectomy RT
13:30	**Yes: Caroline Baker,** *Australia*
13:40	**No: Boon Chua,** *Australia*
13.50	Discussion

14:00-14:30	**DEBATE:** That two-stage implant based reconstruction is rarely indicated in the setting of skin or nipple sparing mastectomy
14:00	**Yes: James French,** *Australia*
14:10	**No: Dean Trotter,** *Australia*
14.20	Discussion

13:30-14:30 **Industry Symposium:**
New paradigms in the treatment of HR+HER2- mBC: CDK4/6 inhibitors and beyond
Supported by Novartis

Hall B

For full details, please refer to page 111

14:30-15:50 **Plenary Session 9:**
Adjuvant endocrine therapy

Hall A

Chairpersons: **Stephen Johnston,** *UK*
Linda Vahdat, *USA*

14:30-14:40 What is the ER/PR threshold at which endocrine therapy should be prescribed, or may be relied upon?
Nirmala Pathmanathan, *Australia*

14:40-15:10	**DEBATE:** That topical oestrogens are an acceptable treatment in pts with HR+ve early breast cancer
14:40	**Yes: Yoland Antill,** *Australia*
14:50	**No: Catherine Oakman,** *Australia*
15:00	Discussion

15:10-15:20 Update on SOFT/TEXT
Prue Francis, *Australia*

15:20-15:50	**DEBATE:** That 10 years of AET is overtreatment
15:20	**Yes: Janice Tsang,** *Hong Kong*
15:30	**No: Nicole McCarthy,** *Australia*
15:40	Discussion

15:50-16:10 *Coffee break and poster viewing*

16:10-17:30 **Parallel Session 10: Molecular assays**

Hall A

Chairpersons: **Bruce Mann,** *Australia*
Louis Chow, *Hong Kong*

16:10-16:25 The case for using Oncotype DX
Virginia Kaklamani, *USA*

16:25-16:40 The case for using Endopredict
Mitch Dowsett, *UK*

16:40-16:55 The case for using Mammaprint
Alastair Thompson, *USA*

16:55-17:10 The case for using Prosigna
Janice Tsang, *Hong Kong*

17:10-17:25 The case for rarely using an assay
Belinda Yeo, *Australia*

17:25-17:30 Discussion

16:10-17:30 **Parallel Session 11: Life after breast cancer**

Hall B

Chairperson: **Lesley Stafford,** *Australia*

16:10-16:40 Risking another cancer: Who should have a mastectomy/CPM?
Laura Esserman, *USA*

16:40-17:00 Motivational interviewing: How to get the best lifestyle outcomes from your patients
Sarah Hardcastle, *Australia*

17:00-17:30 Brains (cognitive decline) and breast cancer
Adam Walker, *Australia*

Saturday, October 13, 2018

07:00-08:30 **Morning Industry Symposium:**
Old favourites, new strategies: Chemotherapy and the treatment of MBC
Supported by Eisai

Hall B

Breakfast will be served prior to the session

For full details, please refer to page 113

07:00-08:30 **Morning Industry Symposium:**
Attractive techniques for localisation and staging: Tools for everyone
Supported by EBOS and Magseed

Hall C

Breakfast will be served prior to the session

For full details, please refer to page 113

08:30-09:30 **Parallel Session 12:**
DCIS

Hall A

Chairpersons: **Christopher Pyke,** *Australia*
Yvonne Zissiadis, *Australia*

08:30-09:00	**DEBATE:** That RT after WE for DCIS is usually overtreatment
08:30	**Yes: Laura Esserman,** *USA*
08:40	**No: Lori Pierce,** *USA*
08:50	Discussion

09:00-09:20 Active surveillance is an option for low-risk DCIS
Christobel Saunders, *Australia*

09:20-09:30 Discussion

08:30-09:30 **Parallel Session 13:**
Topics in chemotherapy

Hall B

Chairpersons: **Rebecca Dent,** *Singapore*
Elgene Lim, *Australia*

08:30-09:00	**DEBATE:** That dose-dense chemotherapy should be the standard for all subtypes of early breast cancer
08:30	**Yes: Linda Vahdat,** *USA*
08:40	**No: Richard de Boer,** *Australia*
08:50	Discussion

09:00-09:15 New strategies in early stage TNBC
Stacy Moulder, *USA*

09:15-09:30 Will NGS become a standard part of management of breast cancer?
Sarah-Jane Dawson, *Australia*

08:30-09:30 **Parallel Session 14:**
Free Papers: Screening/Treatment effects/Supportive care

Hall C

Chairpersons: **Jocelyn Lippey,** *Australia*
Kerry Shanahan, *Australia*

08:30-08:40 Liposuction for advanced breast cancer-related lymphoedema: Outcomes of a multidisciplinary team approach
John Boyages, *Australia*

08:40-08:50 Identification of breast cancer survivors' side effects and supportive care needs
Christina Kozul, *Australia*

08:50-09:00 Physical function following breast reconstructive surgery: Are musculoskeletal side-effects a problem?
Deirdre McGhee, *Australia*

09:00-09:10 Patient reported experiences from the persephone early breast cancer trial
Janet Dunn, *UK*

09:10-09:20 Prospective three-arm triple-blinded comparative study for breast cancer screening in low resource setting countries with a noninvasive and low-cost technique using a handheld point-of-care medical device (iBreastexam)
S.P. Somashekhar, *India*

09:20-09:30 Health system barriers to the provision of breast reconstruction options in Australia: Improving informed choice through appropriate referral
Kathy Flitcroft, *Australia*

09:30-11:00 **Plenary Session 15:**
Loco-Regional therapy

Hall A

Chairpersons: **Caroline Baker,** *Australia*
Boon Chua, *Australia*

09:30-10:00 **DEBATE:** That all patients with axillary nodal disease pre-NACT should have axillary dissection or radiation
09:30 **Yes: Yvonne Zissiadis,** *Australia*
09:40 **No: Jane O'Brien,** *Australia*
09:50 Discussion

10:00-10:20 The implications of the AMAROS study
Lori Pierce, *USA*

10:20-11:00 **DEBATE:** That regional nodal radiation is appropriate for most patients with nodal disease
10:20 **Yes: Reshma Jagsi,** *USA*
10:35 **No: Louis Chow,** *Hong Kong*
10:50 Discussion

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

11:30-13:00 **Parallel Session 16: Local therapy** — **Hall A**

Chairpersons: **James French,** *Australia*
Jane Fox, *Australia*

11:30-12:00	**DEBATE:** Margins: That "no tumour on ink" is a dangerous over-simplification
11:30	**Yes: Ian Campbell,** *New Zealand*
11:40	**No: Raghu Ram,** *India*
11:50	Discussion

12:00-12:30 The status of intra-operative techniques for localization/margin assessment
Alistair Thompson, *USA*

12:30-13:00	**DEBATE:** That IORT is ready for prime time
12:30	**Yes: Dennis R. Holmes,** *USA*
12:40	**No: Michael Chao,** *Australia*
12:50	Discussion

11:30-13:00 **Industry Symposium: Key issues around bone health** — **Hall B**
Supported by Amgen

For full details, please refer to page 113

10:30-13:00 **Breast Cancer Network Australia: Metastatic breast cancer** — **Hall C**

13:00-14:00 *Lunch break and poster viewing*

14:00-15:00 **Parallel Session 17: Exercise and lymphoedema** — **Hall A**

Chairpersons: **Kerry Shanahan,** *Australia*
Lisa Sheeran, *Australia*

14:00-14:20 Surgery for lymphoedema: A new paradigm
Ramin Shayan, *Australia*

14:20-14:40 Prescribing exercise and putting it into practice
Prue Cormie, *Australia*

14:40-15:00 Wearable technology and influencing health behaviours
Sarah Hardcastle, *Australia*

14:00-15:00 **Parallel Session 18: CNS metastases** — **Hall B**

Chairpersons: **Minjae Lah,** *Australia*
Stacy Moulder, *USA*

14:00-14:20 Molecular pathology of CNS metastases
Sunil R. Lakhani, *Australia*

14:20-14:40 Local therapy for CNS metastases: The roles of surgery, SRS and WBRT in 2018
Claire Phillips, *Australia*

14:40-15:00 Drug treatment for CNS metastasis
Arlene Chan, *Australia*

14:00-15:00 **Parallel Session 19: Breast surgery** — **Hall C**

Chairpersons: **Ian Campbell,** *New Zealand*
Raghu Ram, *India*

14:00-14:15 Onco-anaesthesia: Is anaesthetic technique a risk factor for outcome?
Bernhard Riedel, *Australia*

14:15-14:45 **DEBATE:** That percutaneous ablation is a useful treatment option in early breast cancer
14:15 **Yes: Dennis Holmes,** *USA*
14:25 **No: Andrew Spillane,** *Australia*
14:35 Discussion

14:45-15:00 How should quality of life be assessed after breast cancer surgery
Elisabeth Elder, *Australia*

15:00-16:15 **Plenary Session 20: Breast Cancer 2025** — **Hall A**

Chairpersons: **Christobel Saunders,** *Australia*
Yvonne Zissiadis, *Australia*

15:00-15:15 Breast cancer prevention in 2025
Jack Cuzick, *UK*

15:15-15:30 A pathologist's view of breast cancer in 2025
Sunil R. Lakhani, *Australia*

15:30-15:45 How might immunotherapy be used in breast cancer?
Sherene Loi, *Australia*

15:45-16:00 A radiation oncologist's view of breast cancer in 2025
Reshma Jagsi, *USA*

16:00-16:15 A surgeon's view of breast cancer in 2025
Laura Esserman, *USA*

16:15-16:30 **Congress closing and Award presentation** — **Hall A**

Chairpersons: **Christobel Saunders,** *Australia*
Yvonne Zissiadis, *Australia*
Bruce Mann, *Australia*

POSTER PRESENTATIONS

Friday, October 12, 2018

Adjuvant endocrine therapy

P01 ANTI-HORMONAL THERAPY ALONE IN N1 STAGE BREAST CANCER PATIENTS WITH HORMONE RECEPTOR POSITIVE AND HER-2 NEGATIVE
Sung-Ui Jung, *South Korea*

P02 MALE BREAST CANCER IN AUSTRALIA: COMPLIANCE WITH TREATMENT KEY PERFORMANCE INDICATORS – 99,768 BREAST CANCERS OVER A 10 YEAR PERIOD
Chris Lomma, *Australia*

P03 SYSTEMIC ADJUVANT TREATMENT RECOMMENDATIONS AND COMPLIANCE IN AUSTRALIAN PATIENTS WITH EARLY BREAST CANCER
Chris Lomma, *Australia*

Bone health

P04 PERCUTANEOUS PEDICLE SCREW FIXATION FOLLOWED BY CEMENTOPLASTY:
A MINIMALLY INVASIVE TECHNIQUE FOR SPINAL METASTASIS IN BREAST CANCER PATIENTS
Claudio Pusceddu, *Italy*

Breast cancer genetics

P05 PREVALENCE OF OESTROGEN RECEPTOR POSITIVE BREAST CANCER IN OBESITY PATIENTS: A RETROSPECTIVE STUDY
Nur Aziah Binti Adib Anuar, *Malaysia*

P06 LVI IS IT MORE WORSE PREDICT OUTCOME THAN WE BELIEVE WE KNOW ABOUT IT? SYSTEMIC REVIEW OF SINGLE INSTITUTE IN SAUDI ARABIA
Abdulaziz Alhamad, *Saudi Arabia*

P07 METHYLATION STATUS OF MGMT AND MEG3 GENE'S PROMOTERS IN TRIPLE-NEGATIVE BREAST CANCER
Sylwia Sloniec, *Poland*

Breast imaging

P08 FEATURE OF THE BREAST LESION CAN BE DECEPTIVE: MIMICKERS OF BREAST MALIGNANCY
Visnja Baksa Reynolds, *Singapore*

P09 SHEAR WAVE ULTRASOUND AND HIGH MAMMOGRAPHIC BREAST DENSITY (HMBD);
A PILOT STUDY OF BREAST STIFFNESS REDUCTION IN PRE-MENOPAUSAL WOMEN WITH HMBD
Stephen Birrell, *Australia*

P10 LITERATURE REVIEW AND CASE REPORT OF GRANULAR CELL TUMOUR IN BREAST
Amy Cao, *Australia*

P11 THE IMPACT OF PRE-OPERATIVE MRI IN THE MANAGEMENT OF INVASIVE LOBULAR CARCINOMA OF THE BREAST
Jennifer Chang, *New Zealand*

P12 KEEP CALM, IT`S JUST `MOOBS`
Mei Chan Chin, *Australia*

P13 THE BRILLIANCE OF CONTRAST ENHANCED SPECTRAL MAMMOGRAPHY (CESM)
Laurence Gluch, *Australia*

P14 COMPARISON OF USEFULNESS OF ULTRASOUND AND MRI FOR DIAGNOSIS OF SILICON BREAST IMPLANT RUPTURE
Naoya Gomi, *Japan*

P15 FEATURES OF IMAGE FINDINGS OF DIGITAL BREAST TOMOSYNTHESIS (DBT) UNDETECTED BREAST CANCER
Mari Kikuchi, *Japan*

P16 APPROACHING BREAST IMPLANT ASSOCIATED COMPLICATION WITH ULTRASOUND AND CHECKLIST
Angela Soeun Lee, *South Korea*

P17 SQUAMOUS CELL METAPLASIA OF LACTIFEROUS DUCTS IN MALE PATIENTS
Rachael Manning, *Australia*

P18 WHICH IS THE BETTER METHOD TO DETECT ABNORMALITIES BY VISUAL ESTIMATE OR VOLPARA™ FOR WOMEN WITH DENSE BREAST?
Misaki Matsuyanagi, *Japan*

P19 FALSE NEGATIVE ON COMPUTER-AIDED DETECTION APPLICATION IN PREOPERATIVE AUTOMATED BREAST ULTRASOUND OF BREAST CANCER PATIENTS
Jiwon Rim, *South Korea*

P20 IMPACT OF PRE-OPERATIVE BREAST MRI ON BREAST CANCER TREATMENT PLANNING
Masuma Sarker, *UK*

P21 THE BREAST CANCER RELATED-RISKS IN WOMEN WITH DENSE BREAST TISSUE IS CLARIFIED BY USING VOLPARA™
Terumasa Sawada, *Japan*

P22 DIAGNOSTIC VALIDITY OF SURGEON-PERFORMED BREAST ULTRASOUND FOR FEMALES WITH PALPABLE BREAST MASSES
Apple Valparaiso, *Philippines*

P23 THE DIFFERENTIAL DIAGNOSIS OF THE BREAST FINDINGS USING AUTOMATED BREAST VOLUME SCANNER (ABVS) AND ADVANCED ELASTOGRAPHY
Mihaela Vancu, *Romania*

P24 INFLUENCE OF PRE-OPERATIVE BREAST CANCER LOCALIZATION TECHNIQUES ON RATES OF SENTINEL LYMPH NODE VISUALIZATION WITH PREOPERATIVE LYMPHOSCINTIGRAPHY
Shipra Verma, *Australia*

Breast reconstruction

P25 PREPECTORAL IMMEDIATE IMPLANT-BASED RECONSTRUCTION USING BRAXON: AN ACELLULAR DERMAL MATRIX – NATIONAL AUDIT FROM THE UNITED KINGDOM
Dayalan Clarke, *UK*

Endocrine resistance

P26 RIBOCICLIB + FULVESTRANT IN POSTMENOPAUSAL WOMEN WITH HORMONE RECEPTOR-POSITIVE (HR+), HER2-NEGATIVE (HER2–) ADVANCED BREAST CANCER (ABC): RESULTS FROM MONALEESA-3
Arlene Chan, *Australia*

P27 SINGLE CENTER STUDY IN THE PHILIPPINES ON ERIBULIN MESYLATE IN METASTATIC BREAST CANCER FROM 2013 - 2016
Amabelle Trina Gerona, *Philippines*

Molecular assays

P28 OPTIMA: A PROSPECTIVE RANDOMISED TRIAL TO VALIDATE THE CLINICAL UTILITY AND COST-EFFECTIVENESS OF GENE EXPRESSION TEST-GUIDED CHEMOTHERAPY DECISIONS IN HIGH CLINICAL RISK EARLY BREAST CANCER
Janet Dunn, *UK*

P29 TUMOR MICROENVIRONMENT AND ITS PHARMACOLOGICAL MODULATION IN A BREAST CANCER MODEL: PARALLELS TO SKIN WOUND HEALING
Peter Gal, *Slovakia*

P30 EXPLORING IN VITRO ANDROGEN BIOASSAYS AS A CLINICAL TOOL FOR BREAST CANCER
Rachel Lund, *New Zealand*

Neoadjuvant therapy

P31 PATHOLOGIC OUTCOMES OF HER2 POSITIVE NON METASTATIC BREAST CANCER PATIENTS TREATED WITH NEOADJUVANT DUAL ANTI HER2 THERAPY AND TAXANE AT SYDNEY ADVENTIST HOSPITAL (SAH)
Joseph Do Woong Choi, *Australia*

P32 DESIGN OF PERSIA: PERTUZUMAB STUDY FOR HER2-POSITIVE NON-METASTATIC BREAST CANCER IN THE NEOADJUVANT SETTING IN AUSTRALIA
Richard De Boer, *Australia*

P33 PREDICTIVE FACTORS OF STABLE OR PROGRESSIVE DISEASE DURING ANTHRACYCLINE WITH/WITHOUT TAXANE- BASED NEOADJUVANT CHEMOTHERAPY IN BREAST CANCER
Ji Young Kim, *South Korea*

Prevention

P34 EARLY-LIFE BODY FATNESS IN RELATION TO TEXTURE VARIATION ON A MAMMOGRAM
Hannah Oh, *South Korea*

P35 COMPLIANCE WITH MULTIDISCIPLINARY TEAM MEETING TREATMENT RECOMMENDATIONS
Amali Samarasinghe, *Australia*

Radiotherapy

P36 DOES THE TUMOR BED SURGICAL CLIPS AFFECT DOSIMETRIC CHANGES IN THREE-DIMENSIONAL FIELD-IN-FIELD WHOLE-BREAST IRRADIATION TECHNIQUES FOR PATIENTS UNDERGOING BREAST CONSERVING SURGERY?
Dong Soo Lee, *South Korea*

Supportive care

P37 IMAGING-PROVEN VENOUS THROMBOEMBOLISM AMONG BREAST CANCER PATIENTS IN A TERTIARY HOSPITAL IN THE PHILIPPINES FROM 2010-2015
Amabelle Trina Gerona, *Philippines*

P38 THE EFFICACY OF BILASTINE FOR TAXANE REGIMENS INDUCED RASH
Taizo Hirata, *Japan*

P39 FEASIBILITY OF SEGMENTAL ECW/TBW RATIO FOR MILD TO MODERATE DEGREE BREAST CANCER-RELATED LYMPHEMDEMA: CORRELATION WITH TAPE CIRCUMFERENTIAL VOLUME MEASUREMENT
Woo Gyeong Kim, *South Korea*

P40 CONSENT IN THE AGE OF WHITAKER AND MONTGOMERY: TIPTOEING THROUGH THE MINEFIELD OF PATIENT AUTONOMY
Mona Tan, *Singapore*

Survivorship

P41 LYMPHATIC MICROSURGICAL PREVENTING HEALING APPROACH (LYMPHA): A SYSTEMATIC REVIEW
Natalia Garibotto, *Australia*

P42 PLEOMORPHIC LOBULAR BREAST CANCER: DOES MORPHOLOGY MATTER?
Laurence Gluch, *Australia*

P43 ETHNIC DISPARITIES IN THE INCIDENCE OF PHYLLODES TUMOURS AT COUNTIES MANUKAU HEALTH
Megan Grinlinton, *New Zealand*

P44 UTILITY OF SERUM TUMOUR MARKER VELOCITY OF CANCER ANTIGEN 15-3 (CA15-3) AND CARCINOEMBRYONIC ANTIGEN (CEA) IN BREAST CANCER SURVEILLANCE
Jun Xian Hing, *Singapore*

P45 TREATMENT PATTERNS AND CLINICAL OUTCOMES IN ELDERLY BREAST CANCER PATIENTS
Eunyoung Kang, *South Korea*

P46 IMPACT OF VITAMIN D ON BREAST CANCER OUTCOME
Trisha Khoo, *Australia*

P47 OLIGOMETASTATIC BREAST CANCER: CAN WE EVER SAY CURE?
Tahlia Molinaro, *Australia*

P48 QUALITY OF LIFE AND BODY IMAGE IN WOMEN WITH SURGERY FOR BREAST CANCER IN SINGAPORE
Siau Wei Tang, *Singapore*

P49 ESTABLISHING ROUTINE COLLECTION OF PATIENT-REPORTED OUTCOMES VIA THE BREASTSURGANZ QUALITY AUDIT: A PROOF-OF-PRINCIPLE PROJECT TO TEST FEASIBILITY
David Walters, *Australia*

P50 BREAST CANCER FOLLOW-UP: THE PATIENTS PERSPECTIVE
Maggie Wilcox, *UK*

P51 PHYSIOTHERAPY MANAGEMENT OF BREAST CANCER TREATMENT-RELATED FATIGUE, LYMPHOEDEMA, METASTATIC AND RADIATION-INDUCED BRACHIAL PLEXOPATHY: A CASE REPORT
Wai Yeung, *Australia*

P52 WALKING THE BOUNDARIES: IS THE 6-MINUTE WALK TEST ACHIEVABLE IN AN OUTPATIENT BREAST CLINIC?
Lei Ying, *Australia*

Triple negative breast cancer

P53 HEALTH CARE RESOURCE UTILIZATION FOR PATIENTS WITH METASTATIC TRIPLE NEGATIVE BREAST CANCER (mTNBC) IN THE REAL WORLD CLINICAL SETTING: AN OBSERVATIONAL BREAST CANCER (OBTAIN) STUDY FROM AUSTRALIA
Elani Bowers, *Australia*

P54 THE MANAGEMENT OF BRCA PATIENTS IN THE WELLINGTON REGION: A 10 YEAR OVERVIEW
Sue Hui Ong, *New Zealand*

P55 RADIOGENOMIC ANALYSIS OF TRIPLE NEGATIVE BREAST CANCER: FEATURES OF RADIOMICS AND TRANSCRIPTOMICS
Sung Ui Shin, *South Korea*

Saturday, October 13, 2018

Breast cancer screening

P01 LOBULAR NEOPLASIA IN BREAST SCREEN SETTING MULTICENTRE STUDY (ST VINCENT AND MONASH) RETROSPECTIVE, DESCRIPTIVE STUDY: 23 YEARS (1993-2016)
Parisa Aminzadeh, *Australia*

P02 ZnR/GPR39 MODULATES KCC ACTIVITY IN ESTROGEN NEGATIVE BREAST CANCER CELLS
Moumita Chakraborty, *Israel*

P03 ROS-MEDIATED APOPTOSIS INDUCED BY FRUIT POLYPHENOLS IS FOLLOWED BY P38MAPK, ERK1/2 AND THE AKT SIGNALING PATHWAYS MODULATION IN BREAST CARCINOMA MODEL
Matus Coma, *Slovakia*

P04 IS ASYMPTOMATIC SURVEILLANCE AFTER STANDARD TREATMENT BENEFICIAL?: A 10 YR-SURVIVAL ANALYSIS OF RECURRENT BREAST CANCER PATIENTS BY DETECTION METHOD OF RECURRENCE
Han Shin Lee, *South Korea*

P05 OPTIMISING THE EARLY DETECTION OF BREAST CANCER IN AUSTRALIA
Carolyn Nickson, *Australia*

P06 USING THE GAIL MODEL TO RISK-STRATIFY WOMEN FOR BREAST CANCER SCREENING: MODEL VALIDATION ON 40,000 AUSTRALIAN WOMEN ATTENDING BREASTSCREEN
Carolyn Nickson, *Australia*

P07 SOME OPTIONS FOR COMBINING QUESTIONNAIRE AND MAMMOGRAPHIC DENSITY MEASURES TO ESTIMATE RISK OF FUTURE INVASIVE BREAST CANCER AND INTERVAL CANCERS IN SCREENED WOMEN
Carolyn Nickson, *Australia*

P08 MACHINE LEARNING MODELS FOR POPULATION-LEVEL RISK STRATIFICATION
Pietro Procopio, *Australia*

P09 RELIABILITY OF SUSPICION OF MALIGNANT BREAST MASS IN AUTOMATED BREAST ULTRASOUND (ABUS) EXAMINATION: AUTOMATED VERSUS HANDHELD BREAST ULTRASOUND
Jiwon Rim, *South Korea*

Breast reconstruction

P10 SCARLESS LATISSIMUS DORSI FLAP: AN EXCELLENT OPTION FOR LOWER POLE COVER IN IMPLANT BASED RECONSTRUCTION FOR A CHALLENGING SUBSET OF PATIENTS
Vanitha Budhavaram, *Australia*

P11 SINGLE PORT LAPAROSCOPIC HARVESTED OMENTAL FLAP FOR IMMEDIATE BREAST RECONSTRUCTION: EXPERIENCE IN SEOUL NATIONAL UNIVERSITY BUNDANG HOSPITAL
Sumin Chae, *South Korea*

P12 DOES IMMEDIATE BREAST RECONSTRUCTION LEAD TO A DELAY IN ADJUVANT CHEMOTHERAPY FOR BREAST CANCER?: A META-ANALYSIS AND SYSTEMATIC REVIEW
Patrick Cook, *Australia*

P13 BREAST RECONSTRUCTION IN THE REGIONAL SETTING: 5 YEARS OF EXPERIENCE
Daniel Keating, *Australia*

P14 CLINICAL AUDIT REDUCTION MAMMOPLASTY FROM 2011 TO 2016: AN ASSESSMENT OF SURGICAL OUTCOME AND WAITING PERIOD IN A TERTIARY PUBLIC HOSPITAL
Jeffrey Smith, *Australia*

DCIS

P15 ACTIVE MONITORING VERSUS IMMEDIATE TREATMENT FOR WOMEN WITH LOCALISED, LOW-RISK DUCTAL CARCINOMA IN SITU: DOES IT MAKE ECONOMIC SENSE?
Hannah Bromley, *Australia*

P16 TRIPLE NEGATIVE DCIS
Sayuka Nakayama, *Japan*

Local therapy

P17 RADIO-GUIDED OCCULT LESION LOCALISATION USING IODINE-125 SEEDS (ROLLIS) IS A SAFE ALTERNATIVE TO HOOK-WIRE LOCALISATION (HWL)
Brenno Becker, *Australia*

P18 THE USE OF WIRELESS TECHNOLOGY IN BREAST CANCER: HOW TO START YOUR OWN RADIOGUIDED OCCULT LESION LOCALISATION PROGRAMME USING IODINE – 125 SEEDS (ROLLIS)
Brenno Becker, *Australia*

P19 CLINICOPATHOLOGIC PROFILE AND OUTCOMES OF PHYLLODES TUMOR OF THE BREAST: A 10-YEAR REVIEW OF A PHILIPPINE TERTIARY HOSPITAL EXPERIENCE
Shiela Macalindong, *Philippines*

P20 CAN METHYLENE BLUE DYE BE USED AS AN ALTERNATIVE TO PATENT BLUE DYE TO FIND THE SENTINEL LYMPH NODE IN BREAST CANCER SURGERY?
Omid Rouhbakhshfar, *Iran*

P21 MUCINOUS BREAST CARCINOMA. A SINGLE INSTITUTION EXPERIENCE
Nikolaos Salemis, *Greece*

P22 OPTIMAL TREATMENT MODALITY OF PSEUDOANGIOMATOUS STROMAL HYPERPLASIA OF THE BREAST
Kwanghyun Yoon, *South Korea*

Locoregional therapy

P23 LITERATURE REVIEW AND THREE CASE REPORTS OF BREAST FIBROMATOSIS: A MASQUERADE OF BREAST CANCER
Amy Cao, *Australia*

P24 A NOVEL PREDICTIVE TOOL FOR HEAVY AXILLARY NODAL INVOLVEMENT IN SENTINEL NODE POSITIVE BREAST CANCER
Nipu Jayatilleke, *Australia*

P25 MAGNETIC TRACER USE FOR SENTINEL NODE BIOPSY: INTRODUCTION TO AN AUSTRALASIAN PILOT STUDY
Ahrin Anna Morrow, *New Zealand*

P26 IMPACT OF THE AMERICAN COLLEGE OF SURGEONS ONCOLOGY GROUP Z0011 TRIAL ON THE MANAGEMENT OF POSITIVE AXILLARY NODES IN THE AUSTRALIAN SETTING
Nicholas K. Ngui, *Australia*

P27 OUTCOMES OF RIB RESECTION FOR BREAST TUMORS EXTENDING TO THE CHEST WALL
Kristine Paguirigan, *Philippines*

P28 DISCUSSION ON INDICATIONS OF INTERNAL MAMMARY SENTINEL LYMPH NODE BIOPSY IN BREAST CANCER IN THE ERA OF PRECISION MEDICINE
Peng-Fei Qiu, *China*

P29 A PROSPECTIVE COMPARATIVE DOUBLE ARM STUDY OF SLNB WITH ICG BASED TECHNIQUE VERSUS COMBINATION DUAL DYE TECHNIQUE FOR EARLY BREAST CANCER: FIRST INDIAN STUDY
S.P. Somashekhar, *India*

P30 THE 'TWINKLE' ARTEFACT: A NOVEL METHOD OF CLIP IDENTIFICATION TO FACILITATE TARGETED AXILLARY SURGERY FOLLOWING NEOADJUVANT CHEMOTHERAPY IN BREAST CANCER PATIENTS
Mona Tan, *Singapore*

P31 INDOCYANINE GREEN FLUORESCENCE VERSUS BLUE DYE OR RADIOISOTOPE FOR DETECTION RATE OF SENTINEL LYMPH NODE BIOPSY AND NODES REMOVED IN BREAST CANCER: A SYSTEMATIC REVIEW AND META-ANALYSIS
Sarun Thongvitokomarn, *Thailand*

P32 BREAST CANCER ANATOMIC STAGING WITH RISK SCORE IS SIMPLE TO USE AND EFFECTIVE
Ru Xin Wong, *Singapore*

Oncoplastic surgery

P33 PERFORATOR FLAPS FOR BREAST CONSERVING SURGERY: RESULTS FROM AN EARLY SERIES
Nita Bartlett, *Australia*

P34 IMAGING RESULTS FOLLOWING PARTIAL BREAST RECONSTRUCTION WITH CHEST WALL PERFORATOR FLAPS: A QUALITATIVE ANALYSIS WHEN COMPARED TO STANDARD BREAST CONSERVING SURGERY
Jesse Hu, *Singapore*

P35 PREOPERATIVE 3D PRINTING TO AID PLANNING IN COMPLEX BREAST PROCEDURES
Railya Mousina, *Australia*

P36 DOES ONCOPLASTIC SURGERY HAVE A ROLE IN OPTIMISING BREAST CONSERVATION TREATMENT IN AN ASIAN CONTEXT?
Mona Tan, *Singapore*

P37 EFFICACY AND SAFETY OF TRANEXAMIC ACID IN ONCOPLASTIC BREAST SURGERY: A SYSTEMATIC LITERATURE REVIEW
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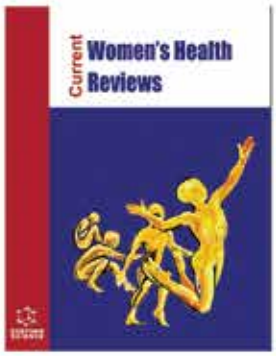

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ABSTRACTS

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INVITED SPEAKERS' ABSTRACTS

THAT NEOADJUVANT RT(NART) PRIOR TO TM/RECONSTRUCTION IS A BETTER APPROACH THAN POST-MASTECTOMY RT

Caroline Baker, *Australia*

The role of adjuvant post-mastectomy radiotherapy in locally advanced breast cancer has been clearly established, conferring both improved local control and long-term survival. However traditionally the adverse impact of this radiotherapy on any immediate reconstruction often led to compromise, with either an expander-based approach fraught with suboptimal outcomes or even delayed reconstruction used. To be a "better" approach, neoadjuvant radiotherapy needs to achieve at least equivalent disease ablation, long-term survival, cosmetic satisfaction, timeliness and psychological wellbeing to that provided by adjuvant radiotherapy. These aspects will be considered individually. In addition, the potential of improved health economic figures, shorter timelines to completion of therapy, absence of delay between therapy modalities and long-term contralateral risk reduction will be explored. Individualized, patient-centred and holistic care is the new mantra for 21st Century breast cancer management and NART can be a lynchpin of this in those with locally advanced breast cancer.

RADICAL REFORM OF A NATIONAL BREAST CANCER SCREENING PROGRAM?

Alexandra Barratt, *Australia*

In October 2016 the French Minister of Health released the report of an independent inquiry into organised mammography screening in France. The inquiry concluded by presenting two options for the future: 1) end the national breast screening program, or 2) end the current program and put in place a radically reformed program. What led to this extreme and unanticipated result? One year earlier, in response to sustained pressure, the Minister had ordered a civil and scientific inquiry, overseen by an independent committee. As well as evidence reviews, two in-depth consultations were held: a civil consultation with 27 women from different regions and diverse socio-economic groups, and a parallel consultation with 19 independent health professionals. The citizens collectively recommended against keeping the program as currently implemented, while the health professionals' consultation recommended keeping it, but making profound reforms. The members of the steering committee found an unexpectedly intense and long standing scientific controversy about mammography screening, centred on doubts about screening effectiveness and concern over harms from overdiagnosis and overtreatment. The French inquiry is strikingly different from other recommendation panels in its processes and conclusions. It is the third, independent inquiry to express major concern about the inadequacy of information about breast cancer screening, and the second to propose an end to organised mammographic screening. In this debate I will outline why the French inquiry's conclusions and recommendations apply just as much to Australia as to France.

DRUG TREATMENT FOR CNS METASTASIS

Arlene Chan, *Australia*

Metastatic breast cancer patients with central nervous system metastases are a population of patients with a clinically unmet need. As control of extra-cranial disease in metastatic breast cancer patients has improved over the past 2 to 3 decades as a result of availability of targeted agents and a greater number of cytotoxic and endocrine agents, the incidence of CNS disease has increased. This is particularly the case in patients with HER2-amplified and triple negative tumours where the incidence ranges from 15% to 44% and 25% to 46%, respectively. Traditionally, the blood-brain-barrier (BBB) has been considered a significant impediment to the penetration of systemically effective drugs into the brain, thus limiting the role for drug treatment in these patients. Further, drug efflux mechanisms involving P-glycoprotien also exist. The understanding of molecular subtypes of breast cancer has provided the basis to explore specific genes which conceptually may be involved in explaining the differences in metastatic spread to the CNS seen in particular breast cancer subtypes. To date, studies of anti-HER2 agents (including T-DM1, pertuzumab, lapatinib, neratinib) have shown potential impact on CNS disease, although results have largely come from retrospective evaluation of randomised clinical trials. Chemotherapy is generally not considered effective for CNS disease. However, in a post-hoc analysis of those patients with brain metastases recruited into the BEACON trial, patients randomised to etirinotecan pegol were found to have a significantly improved survival. This agent is currently being evaluated in a phase III trial of patients with all molecular subtypes of metastatic breast cancer with brain metastases, with overall survival being the primary endpoint. In addition to an overview of this data, other emerging therapies for brain metastases will be discussed including VEGF inhibitor, drug-antibody conjugates, mTOR inhibitors and PARP inhibitors.

THAT A BONE TARGETED AGENT SHOULD BE ROUTINE FOR POST-MENOPAUSAL HR+VE PATIENTS – YES

Arlene Chan, *Australia*

Data from randomised clinical trials and meta-analyses will be presented to support the clear efficacy of the use of bone-targeted agents in postmenopausal hormone receptor positive breast cancer in both reducing clinically significant decline in bone density, as well as improving survival.

THAT REGIONAL NODAL RADIATION IS APPROPRIATE FOR MOST PATIENTS WITH NODAL DISEASE - NO

Louis Chow
Organisation for Oncology and Translational Research

The purpose of the nodal radiation for patients with nodal disease is supposedly to reduce loco-regional recurrence and improve survival. Radiation is given to eliminate possible microscopic disease. Such hypothesis was tested in different clinical trials.

Meta- analysis on these trials by the EBCTCG has shown that radiation reduces loco-regional recurrence, overall recurrence and breast cancer mortality. However, the adjuvant systemic therapies use in these trials were not often used currently. Moreover, the effect of radiation on nodal region was not clear, as the interpretation was based on radiation to the chest wall, axilla, supra-clavicular and the internal mammary regions. While radiation of the chest wall may eradicate tumour micro-emboli in the lymphatics, nodal radiation after axillary surgery may be an over-treatment as the disease should have been removed by surgery and any possible residual deposits are minimal and would have been taken care of by adjuvant systemic therapy, which includes anthracycline and taxane, Herceptin and other anti-HER2 therapies, aromatase inhibitors and ovarian function suppression. These treatments are more superior than the CMF and tamoxifen used previously. They are more likely to eliminate microscopic disease.
In the ACOSOG Z011 trial, patients with positive nodal disease (<3 involved nodes), no advantage was shown for patients with more axillary intervention, as the likelihood of residual axillary disease was small. While it was believed that breast irradiation may have covered partly the lower axilla, it was more likely that any residual disease was eliminated by the systemic therapies. Additional local therapy is not necessary. Nodal radiation may also produce unacceptable side effects. Patients are far more prone to suffer lymhoedema especially when the treatment is given after axillary dissection. Such radiation may also impair movement of the shoulder and affect the patient's activities of daily living.
In conclusion, nodal radiation especially after axillary dissection is unlikely to give additional benefits. It only produced higher incidence of unnecessary harmful effects.

BREAST CANCER IN INDIGENOUS AUSTRALIA

Jennifer Chynoweth[1], **Jacinta Elston**[2],
Donna Moroney[1], Helen Zorbas[1]
[1]Cancer Australia, Sydney, NSW Australia, [2]Monash University, Melbourne, Vic, Australia

Background: Breast cancer is the most commonly diagnosed cancer in Aboriginal and Torres Strait Islander women. While Aboriginal and Torres Strait Islander women are 10% less likely to be diagnosed with breast cancer, they are 20% more likely to die from breast cancer than non-Indigenous women[1]. Aboriginal and Torres Strait Islander people are also 10% more likely to be diagnosed with all cancers and 40% more likely to die from cancer than non-Indigenous Australians[1]. Significantly, the gap is widening. Between 1998 and 2015, the cancer death rate for non-Indigenous Australians fell by 16%, while during the same period of time, it increased by 26% for Indigenous Australians[1]. Central to addressing the widening cancer mortality gap is the recognition that the development and survival of cancer is closely associated with the social and behavioural determinants of health as well as the performance of health systems[2]. **Policy Response:** Working closely with its Leadership Group on Aboriginal and Torres Strait Islander Control, Cancer Australia collaborates with Aboriginal and Torres Strait Islander people across Australia to develop solutions to improve cancer outcomes for Indigenous Australians. In 2015, Cancer Australia developed the *National Aboriginal and Torres Strait Islander Cancer Framework,* the first national strategy to guide future directions in cancer control for Aboriginal and Torres Strait Islander peoples. The evidence identified key points for intervention including improving knowledge, increasing participation in screening and early detection, and ensuring optimal treatment and support. It also identified the need for systems and services to be responsive to the needs of Indigenous people and to work with Indigenous people to design and deliver culturally appropriate approaches to increase their positive engagement with health systems[2]. In 2018, Cancer Australia, in partnership with the Victorian Department of Health and Human Services and Cancer Council Victoria, developed the *Optimal Care Pathway for Aboriginal and Torres Strait Islander people with cancer* to guide the delivery of cancer care that is culturally safe and responsive to the needs of Indigenous Australians. Australian Health Ministers are strongly committed to partnering with communities to implement this pathway. Culturally appropriate resources have also been developed to increase knowledge and awareness about cancer among Aboriginal and Torres Strait Islander peoples. This includes resources for Aboriginal and Torres Strait Islander Health Workers and Health Practitioners to build capacity to provide information and support to people in their community

[1]Australian Institute of Health and Welfare 2018, Cancer in Aboriginal and Torres Strait Islander people of Australia,
https://www.aihw.gov.au/reports/cancer/cancer-in-indigenous-australians/contents/table-of-contents
accessed 17 August 2018
[2]Zorbas H. & Elston J. (2016) European Journal of Cancer Care 25, 222-224 Sharing the challenge of cancer control for Indigenous Australians: a national agenda

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ER, PR AND HER2 TESTING CONTROVERSIES AND THE CLASSIFICATION OF BREAST CANCER

David Clouston, *Australia*

The molecular classification of breast cancer described by Perou and colleagues[1,2] changed the way we approach the diagnosis and treatment of breast cancer. A limited panel of immunoperoxidase stains for receptor status provides essential information on the intrinsic biology of the tumour and is now part of the routine pathology reporting for all breast cancers. Technical issues. Quality assurance is essential to ensure reliability in the reporting of receptors. In one cohort in Newfoundland and Labrador (NL) in Canada, 39.1% of patients with "negative" receptors between 1997 and 2005 were re-classified as positive with retesting in a specialised laboratory[3]. It is well recognised that review of material in a central laboratory will not uncommonly lead to a clinically significant change in receptor status. The Australian Quality Assurance program has shown a steady improvement in laboratory performance but even in 2017, 15%, 7% and 12% of laboratories had borderline or unsatisfactory results for ER, PR and HER2 staining respectively ER / PR status. There has been a slight shift in ER and PR positivity. In 2017 across Australia, positive staining for ER was present in 82% of tumours

(RR 75% to 80%) and for PR in 70% (RR 55% to 65%). This is most likely to be due to improvement in laboratory testing rather than a change in the nature of the disease. For ER, 1% is still regarded as the cut-off for a positive result. While ER positive / PR negative tumours are associated with a worse prognosis, ER negative / PR positive tumours are most likely a reflection of false negative testing. HER2 status. ASCO / CAP have recently released updated guidelines for HER2 testing addressing some difficult areas in interpretation of equivocal results[4]. Using dual probes for HER2 and CEP17 and correlating with the IHC results, guidelines have been provided to deal with several difficult areas in interpretation, removing the "equivocal" category when ISH testing is available. Clonal heterogeneity. It is necessary to remain cognisant of heterogeneity in receptor status, which may be intratumoral with multiple clones in a given tumour, or temporal heterogeneity with differences between the primary tumour and recurrent tumour. Generally, there is excellent correlation between the core biopsy and the excision specimen for ER and PR, but this is less so for HER2.

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1. **Nature**. **2000,** 406(6797):747-52
2. PNAS 2001, 98(19) 10869-10874
3. Health Manage Forum 2010, 23(3):114-8
4. J Clin Oncol 2018, 36(20): 2105-2122

PRESCRIBING EXERCISE AND PUTTING IT INTO PRACTICE

Prue Cormie, *Australia*

People with breast cancer may experience serious chronic health and psychological sequelae including accelerated functional decline, fatigue, musculoskeletal symptoms, psychological distress, a higher risk of developing comorbid conditions and reduced quality of life. This presentation will summarise the evidence of the efficacy of exercise in counteracting the detrimental side effects of breast cancer and its treatment. The evidence emerging from epidemiological studies suggesting exercise confers benefit to cancer outcomes will be presented. Practical strategies to incorporate exercise into clinical practice will be discussed.

HOW TO BEST MANAGE ENDOCRINE THERAPY SYMPTOMS: PHARMA OR SWEAT? – SWEAT

Prue Cormie, *Australia*

The 'sweat' side of this debate will focus on the role of exercise as medicine for the management of endocrine therapy symptoms. The evidence for the impact of exercise on endocrine therapy sequelae will be presented. Specifically, the efficacy of exercise to ameliorate fatigue, arthralgia, bone loss, weight gain, cardiotoxicity, psychological distress and cognitive impairment will be discussed. These benefits will be weighed against the potential risk of harm resulting from exercise delivered in this setting. The potential for exercise to be an approach that provides patients with control and an active role in managing the potential side effects of endocrine therapy will be addressed.

BREAST CANCER PREVENTION IN 2025

Jack Cuzick

Wolfson Institute of Preventive Medicine, Queen Mary University of London, UK

Hopefully breast cancer prevention will become a much more routine activity by 2025. The two key elements of a prevention strategy are identifying high-risk individuals who will benefit from targeted invention using therapeutic agents, and developing agents which are effective and well tolerated. A key element of any prevention strategy is the routine identification of high-risk women. This is probably most easily done at a screening visit, and consideration should be given to the renaming of 'Breast cancer screening' programmes as 'Breast cancer prevention' programmes, where a risk assessment is made at the initial visit, and updated as needed when important new risk information becomes available. Such a program will require staff who understand breast cancer risk factors and are able to accurately discuss potential benefits and side-effects. Currently the main preventive measures, aside from screening and lifestyle advice to avoid obesity and being physically active, are the use of tamoxifen, mostly for premenopausal women and an aromatase inhibitor for postmenopausal women, both of which have menopausal symptoms as a common side-effect, as well as rarer side-effects such as endometrial cancer and thromboses for tamoxifen and reduced bone density and arthralgia for the aromatase inhibitors. Raloxifene can also be used in postmenopausal women, and potentially premenopausal women, although it has not been much investigated in this group. No agents have been identified which show convincing evidence for the prevention of oestrogen receptor negative breast cancer, although there is some epidemiologic evidence for an effect of both metformin and the bisphosphonates. Another important aspect of future programs is to provide indicators of the effectiveness of the intervention. Changes in breast density after 12 to 18 months have been shown to predict response to tamoxifen for prevention and treatment, and also the aromatase inhibitors in the treatment setting. This is very important for cardiovascular disease prevention where the monitoring of impact of statins on HDL cholesterol is an important component of identifying effectiveness and maintaining compliance. The existence of short-term treatment related symptoms has been shown to predict the effectiveness of both tamoxifen and aromatase inhibitors in the adjuvant treatment setting, but its use for prevention maybe more challenging. Looking further forward a longer term goal will be to identify specific agents that are likely to be most effective for different individuals. This is a large challenge and is most likely to be guided by genetic factors, but is still in its infancy and its direction is highly speculative. However even with our current agents with assess the ability to prevent up to 1/3 of all breast cancers and the biggest challenge remains to implement programmes to achieve this.

MAMMOGRAPHIC BREAST DENSITY FOR RISK ASSESSMENT

Jack Cuzick

Wolfson Institute of Preventive Medicine, Queen Mary University of London, UK

Mammographically assessed breast density is the strongest known risk factor for breast cancer on a population basis. It can be measured in a number of

ways. The initial approach of Wolfe reported in 1976 identified four different groups based on density features ranging from low risk primarily fatty replacement (N1) to high risk predominantly dense fibroglandular tissue (DY). This was followed by visual assessments of the percent of the breast area of the mammogram covered with dense tissue, which was then made into a semi-automatic assessment using CUMULUS to give a more repeatable measurement. However, this still required manual assessment of the threshold for dense tissue and was very time consuming to perform. The BiRads system uses to a four category visual assessment. It is widely used, but still subjective and the third category - heterogeneously dense is large and is also heterogeneous for the subsequent risk of breast cancer. Their most recent classification focusses areas where density could mask identification of a tumour, and less on risk assessment. More recently automated volumetric measurements have been developed based on the degree of opacity in the each pixel of the mammogram to assess the depth of dense tissue in that pixel, thus arriving at a measure of the volume of breast tissue which is dense. All these methods can be used either as an absolute measurement or a percent volumetric density. Volumetric measures may be more informative, as the volume of dense tissue is likely to be the more critical factor for increased risk, but this has yet to be shown in large studies. Another benefit of volumetric and other computer based measures is that are objective and reproducible, and are automatically produced without radiologist intervention. In this talk I review several large cohort and case control studies demonstrating not only the univariate strength of mammographic density, but also its near independence and added value to both questionnaire based risk factors and single nucleotide polymorphism (SNP) panels. These studies look at high risk women in the IBIS prevention trial, a high risk clinical in Manchester, a large Swedish cohort (KARMA) and two large US studies in Washington state and Virginia. The value of changes in breast density after endocrine therapy as markers of treatment effectiveness is also briefly reviewed.

WILL NGS BECOME A STANDARD PART OF MANAGEMENT OF BREAST CANCER?

Sarah-Jane Dawson
Peter MacCallum Cancer Centre, Australia

The advent of next generation sequencing (NGS) has provided important insights into the genomic landscape of breast cancer and improved our understanding of genomic evolution during progression of the disease. NGS of tumour tissue has helped characterise important subtypes of the disease and allowed characterisation of specific genomic changes associated with treatment response and resistance, bringing us a step closer to precision medicine approaches. Recent technological advances in the analysis of circulating tumor DNA using NGS approaches are also providing new opportunities for treatment tailoring based on real-time monitoring of genomic changes from a simple blood test. Here I will summarize the most important recent research in the application of NGS to breast cancer, focusing on the promises and challenges in applying these tools for clinical applications.

RADIAL SCARS, PAPILLOMAS AND OTHER BENIGN PROLIFERATIVE LESIONS, SIGNIFICANCE AND MANAGEMENT

Gelareh Farshid
South Australian Pathology, University of Adelaide and BreastScreen SA, Australia

Since the turn of this century, NCBs have become the first line diagnostic modality for the histologic evaluation of breast lesions found on imaging. Their simplicity and close correlation with the final histology have reduced substantially the reliance on surgical biopsies. However, for several specific subsets of breast lesions, such as radial scars, core biopsies may not be fully representative of the entire process, such that immediate surgical excision discovers unsuspected concurrent invasive cancer or DCIS in up to 40% of the cases. Atypical ductal hyperplasia, lobular carcinoma in situ, atypical lobular hyperplasia, papillary lesions, radial scars, cellular fibroepithelial lesions and flat epithelial atypia are among the diagnoses which when made on a needle core biopsy (NCB) have been associated with significant upgrade rates, leading to the standard recommendation for diagnostic surgical biopsy. In population based screening for breast cancer, radial scars and papillary lesions are among the most common benign indications for surgical biopsy and contribute to the benign open biopsy rates. The detection of radial scars is increasing with the growing use of digital breast tomosynthesis. The upgrade rates vary among these lesions, ranging from <10% for radial scars and fibroepithelial lesions to >40% for ADH. Although well intentioned and justified, the fact remains that for most women such surgery finds no malignancy. Attempts at finding subsets of women whose likelihood of an upgrade is sufficiently low as to forego surgical biopsy have had variable success and are ongoing.

UPDATE ON SOFT/TEXT TRIALS

Prudence Francis, *Australia*

Updated results from the randomized Suppression of Ovarian Function Trial (SOFT) and Tamoxifen and Exemestane Trial (TEXT) adjuvant endocrine therapy trials conducted in premenopausal women with oestrogen receptor (ER) and/or progesterone receptor (PR) positive (> 10% cells) breast cancer now detail 8-year outcomes [1]. SOFT now shows a significant improvement in disease-free survival (DFS) with the addition of ovarian function suppression (OFS) to tamoxifen (T), as compared with tamoxifen alone (P=0.009). The absolute improvement in DFS at 8 years is larger in women who remained premenopausal after receiving adjuvant chemotherapy than in those who did not receive chemotherapy (chemotherapy administration decided by doctor and patient). and in very young women under age 35. The use of an aromatase inhibitor exemestane (E) plus OFS resulted in further reduction in recurrence. There is a small but significant improvement in overall survival in SOFT from the addition of OFS to tamoxifen, as compared with tamoxifen alone (P=0.01), with absolute improvements in overall survival evident in women who received prior chemotherapy and were assigned OFS with either tamoxifen or exemestane. The majority of patients enrolled in SOFT and TEXT had HER2-negative tumours, and in the combined analysis of the trials, these patients had a consistent benefit from OFS+E as compared with OFS+T, with a significant improvement in both DFS and in rates of distant

recurrence (of the order of 5-7% absolute difference in TEXT and SOFT respectively). Currently there is no difference in overall survival among the groups of patients assigned OFS according to the oral hormone therapy assigned (exemestane versus tamoxifen). Results in those with HER2 positive tumours are complicated by the fact that randomization commenced prior to the routine use of adjuvant trastuzumab, and so not all such patients received adjuvant HER2-targeted therapy. In SOFT, there was some evidence of heterogeneity of effect, with the addition of OFS to tamoxifen appearing to provide a greater benefit in those with HER2 positive tumours than in those with HER2 negative tumours. OFS with either tamoxifen or exemestane resulted in increased toxicity. There were many patients enrolled in SOFT who did not receive adjuvant chemotherapy as decided by the doctor and patient. Thus far this cohort shows some reduction in loco-regional and contralateral invasive breast cancer events with intensification of endocrine therapy, but shows excellent 8-year rates of freedom from distant recurrence and overall survival among those assigned adjuvant tamoxifen alone for 5 years.

[1]Francis PA, Pagani O, Fleming GF, et al. New Engl J Med 2018; 379:122-137.

THAT GENE CARRIERS DIAGNOSED WITH CANCER SHOULD BE STRONGLY ADVISED TO UNDERGO BILATERAL MASTECTOMY
James French, *Australia*

The affirmative: Women with either a BRCA 1/2 gene mutation are at a high lifetime risk of developing breast cancer. They are also at high risk of developing a contralateral cancer once a diagnosis of cancer has been made. Published 10-year absolute risk estimates vary from 16%-40%[1]. By 25 years this risk rises to 62.9% for women with a BRCA 1 mutation first diagnosed before age 40[2]. This risk can vary depending on the age at diagnosis and the treatment options used. Whilst breast-conserving surgery utilising the principles of clear margins followed by whole breast radiotherapy offers similar levels of local control and survival to that of mastectomy for the ipsilateral breast, the contralateral breast remains at high risk of developing cancer. A number of different approaches that can be employed to manage these patients including: chemoprevention using Tamoxifen, screening, breast self-examination, clinical breast examination, and contralateral risk-reducing mastectomy (CRRM). None of the "watch and wait" strategies are as effective as CRRM. Only imperfect data exists as to the effectiveness of Tamoxifen in BRCA gene carriers, and any effect is restricted to BRCA2 carriers[2]. Screening, there is a lack of data showing efficacy of mammographic screening in high-risk women[3], rather studies show higher rates of node-positive disease and interval cancers[3]. This is due to the fact that mammography sensitivity is lower in BRCA carriers than in non carriers[4]. MRI alone only detects 77% of cancers in BRCA carriers[5]. Only level 5 evidence exists underpinning guidelines that recommend "breast awareness" and clinical breast examination[5]. The most effective strategy in managing contralateral cancer is CRRM, which reduces the risk of subsequent breast cancer by 91% independent of the effect of risk-reducing oophorectomy[6].

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MOTIVATIONAL INTERVIEWING: HOW TO GET THE BEST LIFESTYLE OUTCOMES FROM YOUR PATIENTS
Sarah Hardcastle, *Australia*

Health behaviour change is important for cancer survivors in order to prevent cardiovascular disease and cancer recurrence. Motivational interviewing (MI) has been shown to be a promising approach for promoting lifestyle change. Motivational interviewing is primarily a counseling approach and a way of interacting with a patient in health contexts (Miller & Rollnick, 2013) to enhance patient motivation for behaviour change. Central to its approach is the 'spirit' of MI, which is a collective term that encompasses the relational components of MI focusing on the actions of the practitioner in delivering intervention content to patients. The 'spirit' of MI comprises four key components: collaboration, evocation, autonomy and compassion. Collaboration refers to relations between the practitioner and client grounded in the perspectives and experiences of the client. Evocation refers to drawing out the client's ideas about change. The practitioner draws out the client's own motivations and skills for change rather than tell them what to do or the reasons why they should do it. Promoting autonomy in the client refers to the practitioner ensuring that the decision to change rests with the client. The practice of compassion refers to the practitioner's acceptance of one's path and choices. The practitioner is committed to seek an understanding of the other's experiences, values and motives without engagement of explicit or implicit judgment. An important relational component of MI is its client-centered focus on drawing out clients' ideas about change. Central to this is the evocation of 'change talk'. The evocation of change talk is a key component of MI and is defined as "any self-expressed language that is an argument for change" (Miller & Rollnick, 2013, p. 159). One of the primary roles of MI practitioners is to elicit and evoke change talk and to reduce 'sustain talk': "the person's own arguments for not changing, for sustaining the status quo" (Miller & Rollnick, 2013, p. 7). MI demands that practitioners interact with patients and elicit their opinions concerning why they want the change, why a change might be good and how they can succeed. Patients often feel ambivalent about making a lifestyle change and resolving such ambivalence is central to MI. In effective MI, the practitioner communicates in a way that minimizes resistance, elicits change-talk, and fosters patient commitment to change, thereby

increasing the chances that he or she will actually achieve the change.

BELOW THE BREAST – MANAGING GU SYMPTOMS
Martha Hickey
Professor of Obstetrics and Gynaecology, University of Melbourne, Head of Menopause Unit, The Women's Hospital, Melbourne, Australia

The majority of genito-urinary symptoms in breast cancer patients arise following chemotherapy-induced early menopause, cessation of hormone therapy at diagnosis of breast cancer or prolonged use of endocrine therapy for estrogen-sensitive disease. Common genito-urinary symptoms include vaginal dryness and discomfort during sexual activity, urinary urgency, vulval irritation and discomfort and changes in sexual interest and/or response. Dermatological conditions (such as lichen sclerosus) may present with similar symptoms and should be excluded since management approaches differ from breast-cancer related symptoms. Discriminating what symptoms are due to breast cancer treatments and what is due to menopause is often difficult and may be clinically unhelpful. This presentation will provide an evidence-based approach to the diagnosis and management of common genito-urinary symptoms in breast cancer survivors.

A RADIATION ONCOLOGIST'S VIEW OF BREAST CANCER IN 2025
Reshma Jagsi, *USA*

This presentation envisions 2025 as the era of individualized radiotherapy. It will juxtapose an overview of current evidence to advances that are expected in areas including hypofractionated whole breast radiotherapy, partial breast irradiation, selective omission of radiotherapy after lumpectomy, and post-mastectomy radiotherapy and regional nodal irradiation.

INTEGRATING RT AND BREAST RECONSTRUCTION
Reshma Jagsi, *USA*

This session will discuss existing evidence regarding the optimal approach to integration of post-mastectomy radiotherapy and breast reconstruction. This is important because understanding the impact of radiotherapy on reconstruction outcomes is highly relevant for women considering whether to choose to pursue post-mastectomy radiotherapy. Conversely, for patients who are committed to post-mastectomy radiotherapy, understanding outcomes with different approaches to breast reconstruction is valuable to guide decision-making. After consideration of trends in use of radiotherapy and in use of breast reconstruction, the lecture will turn to evidence from historical series and their meta-analyses, evaluating various approaches to reconstruction type and timing. It will reflect on the limitations of existing data and conclude with recent results from large U.S. multicenter prospective cohort study that evaluated complications and patient-reported outcomes in this setting.

POST-MASTECTOMY RT IN NODE NEGATIVE AND N1 PATIENTS
Reshma Jagsi, *USA*

This session will begin with a historical overview of landmark historical randomized trials and their meta-analysis, followed by a discussion of more recent evidence that seeks to generalize appropriately to the modern era, given advances in radiology, surgery, pathology, and systemic therapy. It will explain the evolution of practice guidelines and the rationale for individualizing on the basis of known risk factors in order to ensure high quality, shared decisions about adjuvant post-mastectomy radiotherapy in patients with N0 and N1 breast cancer.

THAT REGIONAL NODAL RADIATION IS APPROPRIATE FOR MOST PATIENTS WITH NODAL DISEASE – YES
Reshma Jagsi, *USA*

This presentation will discuss evidence from several recent randomized trials (ACOSOG Z0011, IBSCG 23-01, NCIC MA-20, and EORTC 22922) in order to make the case for the role of regional nodal irradiation in most patients with nodal disease.

THE US EXPERIENCE
Reshma Jagsi, *USA*

This session will provide an overview of the challenges faced in the United States. It will begin with a brief discussion of the challenges of undertreatment and non-compliance with standard therapy. Then it will delve into a challenge that is perhaps even more pervasive in American practice: patients who demand overtreatment. Focusing on the evidence collected about alarming increases in the rates of contralateral prophylactic mastectomy among patients without genetic predisposition for cancer, the lecture will highlight communication challenges in this context.

MOLECULAR PATHOLOGY OF CNS METASTASES
Sunil R. Lakhani
The University of Queensland and Pathology Queensland, Brisbane, Australia

Brain metastases is an increasing problem in breast cancer management, in particular with high grade triple negative and Her2 positive disease. Current treatment strategies for brain metastases are non-specific with relatively low efficacy, and the prognosis remains poor. The brain acts as a sanctuary site for small, subclinical proliferations which are protected from systemic therapy by the specialised microvasculature. The sub-efficacious drug concentrations as a result of patchy vascular permeability and abnormal perfusion dynamics, selection pressure and the interactions with the microenvironment dictate whether the cells grow and colonise the brain. Our knowledge of the biology underlying development of brain metastases from breast cancer has improved over the last decade due to large clinical-epidemiological studies, animal models of metastasis and the use of high-resolution gene expression profiling technologies. Despite this, there are

still major gaps in our knowledge and mechanistic insights are urgently needed to inform the development of new therapeutic options.

SHADES OF GREY: THE SPECTRUM OF LESIONS FROM ATYPIA TO DCIS AND LOBULAR NEOPLASIA
Sunil R. Lakhani
The University of Queensland and Pathology Queensland, Brisbane, Australia

Mammographic screening programs were introduced to improve outcomes for women with breast cancer by detecting small, early stage invasive tumours. An important side-effect of mammographic screening is that it also identifies early benign and atypical proliferative, borderline and pre-invasive malignant lesions with increasing frequency. The difficult histological classification of these lesions and their uncertain risk of progression to invasive disease in individual patients presents considerable challenges in management. The talk will present a review of the current morphological and molecular classification of the common pre-invasive lesions of the breast and its impact on clinical management.

THAT BREASTSCREEN AUSTRALIA REQUIRES URGENT AND RADICAL REFORM
Bruce Mann, *Australia*

No
Public health programs that are ineffective, dangerous or poorly regulated require urgent and radical reform. BreastScreen Australia's population based screening program is none of those. Population based mammographic screening is one of a small number of interventions with level 1 evidence to demonstrate a reduction in breast cancer mortality. In addition to breast cancer mortality reductions, screened populations require significantly less intense treatment after cancer is diagnosed compared with breast cancers in populations not regularly screening. BreastScreen Australia is a highly regulated system offering mammography to all women 50-75 and has been credited with reducing breast cancer mortality by ~19% in the target range for screening according to the BSA evaluation from 2019. Quality controls limit the rate of recalls, and counselling services limit the psychological impact of the screening and assessment processes. BreastScreen Australia is not perfect - opportunities exist to further improve its impact on breast cancer morbidity by increasing the participation rate, and potentially the scope of the program. It has also not changed significantly from when it was first introduced in the 1990's, whereas knowledge around breast cancer risk assessment and screening technology have advanced. "Urgent and radical" reform would be needed should a program be harming the population it sets out to serve. This is not the case in BreastScreen Australia. Reforms with a strong evidence-base, and implemented in a way the does not undo the current benefits, should be considered. Any reforms should aim to target screening to those at highest risk with optimal screening technology, while potentially reducing the impact of screening on those at low risk of the disease.

THAT DECISIONS REGARDING NAST SHOULD BE BASED ON TN STAGE RATHER THAN BREAST CANCER SUBTYPE
Bruce Mann, *Australia*

Yes
Traditionally treatment of breast cancer involved primary surgery, with adjuvant therapies depending on results of the final pathology, patient comorbidities and patient wishes. With such treatments, survival rates have improved, such that in many countries 5-year survival of 90% has been reported. Neoadjuvant systemic therapy was first introduced for locally advanced cancer – T3/4ab – and Inflammatory cancer – T4d – where it was shown to produce better outcomes for cancers with such advanced T-stage. Similarly, with advanced N-stage disease, systemic therapy prior to surgery facilitates surgical clearance. Thus historically, decisions around NAST were made entirely around the T and N stage. Advances in knowledge of breast cancer subtypes, and recognition that response to NAST vary according to subtype mean that decisions around NAST have become more complex, but they are still fundamentally based on T and N stage at presentation. Clinical trials in the 1990s were initiated to test the hypothesis that neoadjuvant chemotherapy would allow earlier treatment of micrometastatic systemic disease and thereby lead to improved overall survival. These trials were uniformly unsuccessful in achieving this goal but did allow successful mastectomy in a substantial number of cases where the T-stage at presentation would have necessitated total mastectomy as primary surgical therapy. This remains the proven benefit of neoadjuvant systemic therapy in patients with operable breast cancer. Recent series have suggested that NAST may allow a proportion of patients with nodal involvement at presentation to avoid axillary dissection and its attendant morbidity. While not proven beyond doubt, NAST based on N stage at presentation may reduce the morbidity of breast cancer therapy. There is no doubt that the response to NAST varies according to breast cancer subtype. Rates of pCR are substantially higher in some subtypes than others, and the likelihood that surgical de-escalation will be possible similarly varies according to subtype. These differences are not absolute, however and therefore decisions regarding NAST should be based on TN stage rather than breast cancer subtype

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THE POWER OF PET-CT IN STAGING AND RESTAGING OF BREAST CANCER – ARE AUSTRALIAN PATIENTS BEING DISADVANTAGED BY MSAC?
Kate Moodie
Radiologist & Nuclear Medicine Specialist, Peter MacCallum Cancer Centre, Parkville, Melbourne, Australia

In Australia, there remains no Medicare rebate for PET-CT in breast cancer. This is despite a large body of evidence supporting the utility of 18-F FDG PET-CT in both staging and restaging settings. NCCN guidelines for 18-F FDG PET-CT remain:
- Recommended for: staging of inflammatory breast cancer;
- Optional for: stage IIIA or IIIB, post lumpectomy or mastectomy and surgical axillary staging with >4 axillary nodes, recurrent or stage IV disease staging and restaging;

- Most helpful where standard staging studies are equivocal or suspicious, especially in setting of locally advanced or metastatic disease.
For discussion:
- The cost of not applying this data to protocols in Australia,
- The impact of 18-F FDG PET-CT in radiation treatment primary staging of the locally advanced primary,
- The role of 18-F FDG PET-CT in the neoadjuvant setting,
- The role of new PET tracers in the staging and restaging of breast cancer.
References: please refer to summary slides for distribution following presentation.

WHEN IS A LUMP A LUMP?
Jenny O'Sullivan, *Australia*

An approach to assessing and managing patients who present with a new breast symptom: The presenting symptoms of breast cancer can include asymmetry, skin or nipple changes, unilateral breast pain, a lump, thickening or ridge. Yet these symptoms can also be caused by benign breast changes such as fibroadenoma, cysts, fibrocystic change and other hormonal breast changes, pregnancy and lactation, duct ectasia, scarring from previous surgery. The challenge facing clinicians is how best to assess and investigate these breast symptoms – to diagnose breast cancer if it is present, but also to minimize investigations and invasive procedures that might not be necessary. Using evidence-based guidelines, thorough history taking, breast cancer risk assessment, familiarity with breast anatomy and physiology, clinical breast examination technique and skills, and appropriate breast imaging are the tools that will help clinicians determine the optimal management of breast symptoms. Utilising these tools well allows clinicians to answer the questions:
- Does this require needle biopsy?
- Do I refer this patient to a surgeon?
- Can I safely monitor this symptom?

THAT TOPICAL OESTROGENS ARE AN ACCEPTABLE TREATMENT IN PTS WITH HR+VE EARLY BREAST CANCER – NO
Catherine Oakman
Western Health, Barwon Health, Australia

Vaginal dryness, discomfort, pain and bleeding, dyspareunia and dysuria are commonly reported symptoms in postmenopausal women and in women receiving adjuvant endocrine therapy for breast cancer, particularly the aromatase inhibitors. These symptoms can significantly impair quality of life. They are attributable to atrophic vaginitis (vaginal atrophy) which is caused by thinning, dryness and inflammation of the vaginal wall due to low oestrogen. Atrophic vaginitis can be difficult to manage in any woman but particularly difficult in women with a history of HR+ breast cancer due to restrictions in the use of systemic and topical hormones. Use of non-hormonal therapies may relieve symptoms in some women however many women require topical vaginal hormone therapies to alleviate their symptoms. Topical hormone therapies have been demonstrated to be an effective treatment, however, their use specifically in women with a history of HR+ early breast cancer has not been robustly studied. The level of systemic absorption, safety and impact on long term recurrence of these treatments are a concern for individuals with HR + BC and their clinicians. Use of topical hormonal treatment has been demonstrated to significantly raise systemic oestradiol levels. This is a reversal of the oestradiol suppression achieved by inhibition of peripheral tissue aromatase by the aromatase inhibitors. There is no standardized assay to measure low concentrations of oestradiol in post-menopausal women being treated with aromatase inhibitors. This adds to the complexity of evaluating the potential risk of breast cancer recurrence with topical oestrogen treatment after HR + breast cancer. Studies have investigated a range of topical hormone treatments but there is no evidence based recommendation on which topical agent to use, which dose, how often, or duration of therapy. Studies of treatments for atrophic vaginitis are ongoing using non-hormonal therapies and a range of hormonal therapies oestrogen, DHEA, and testosterone. Definitive results are required about the safety of topical oestrogens in women with a history of HR+ breast cancer before they can be recommended

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LOCAL THERAPY FOR CNS METASTASES: THE ROLES OF SURGERY, SRS AND WBRT IN 2018
Claire Phillips, *Australia*

Brain metastases have become a very common clinical problem in breast cancer and increasingly threaten life for patients with controlled extracranial disease. Clinical evidence specific to breast cancer brain metastases and its phenotypes remains sparse. Despite efforts to find active systemic agents, radiotherapy and surgery remain the mainstays of treatment. The relative roles of whole brain radiotherapy (WBRT) and stereotactic radiosurgery (SRS) continue to evolve with a general trend towards delay of WBRT wherever possible. All three modalities are complimentary tools that are used alone or in combination in order to maximise quality of life and in an attempt to protect patients from neurologic deficit and death. The choice of treatment modality/ ies is individualised, taking into account performance status, phenotype, lesion number, location, size and systemic therapy options for systemic disease. Close collaboration between clinicians promotes coordinated decision-making.

ONCO-ANAESTHESIA: IS ANAESTHETIC TECHNIQUE A RISK FACTOR FOR OUTCOME?
Bernhard Riedel
Director, Department of Anaesthesia, Perioperative and Pain Medicine, Peter MacCallum Cancer Centre, Melbourne, Australia

Surgery is the primary treatment for most solid tumours, but residual disease with scattered micro-metastases and tumour cells are usually unavoidable, given that these cancer cells are often circulating in the blood stream at diagnosis. Hence, despite surgical treatment, cancer recurrence may occur in patients - usually as metastases in organs distant from the primary tumour. Several perioperative (surgical and anaesthetic) factors may increase progression of minimal residual disease. Surgery: is accompanied by stress, inflammation and suppressed cell-mediated immunity; reduces concentrations of tumour-related anti-angiogenic factors (e.g. angiostatin); increases concentrations of

pro-angiogenic factors such as VEGF and growth factors to promote wound healing—these factors then promote local and distant growth of malignant tissue. Anaesthetic factors are also increasingly recognised as important. Inhalational (volatile) anaesthetic agents (e.g. sevoflurane, desflurane) impair numerous immune functions, including neutrophils, macrophages, dendritic cells, T-cell, and natural killer cells, have anti-apoptotic properties and upregulate hypoxia inducible factor-1 alpha (HIF-1α) and PI3K-Akt pathway signalling. In contrast, propofol used for Total IntraVenous Anaesthesia (TIVA) may be protective through immune function preservation, anti-inflammatory properties and inhibition of mTOR, p53, p38 MAPK and MMP signaling. Amide local anaesthetics (e.g. lidocaine) used for regional anaesthetic blocks (e.g. epidural anaesthesia and analgesia) or as an intravenous infusion for analgesia during general anaesthesia may also have protective anti-inflammatory properties. This lecture will explore these perioperative factors in the setting of breast cancer surgery.

NEW PARADIGMS IN BREAST IMAGING – THE 7-8 MINUTES THAT MAKE A DIFFERENCE

Allison Rose

Director Northwestern BreastScreen, Head of Breast Imaging, The Royal Melbourne Hospital & The Women's Hospital Breast Service, Australia

Modern breast imaging should provide tailored precision screening, and efficient, accurate staging to enable appropriate and informed choices for treatment. Inherent in these goals is recognition of lesions which may be “over-diagnosed” allowing less aggressive treatment plans to be made. Contrast based tests (MRI and Contrast Enhanced Digital or Spectral Mammography - CEDM/CESM) currently offer higher sensitivity and specificity for cancer detection with a bias towards detection of more biologically relevant disease than conventional methods (FFDM 2D/ 3Dtomosynthesis and US). Other emerging contrast-based modalities MBI (molecular Breast imaging) and CEUS (Contrast Enhanced Ultrasound) will not be discussed in this presentation. CEDM is accessible, well tolerated, and relatively inexpensive, with a high negative predictive value even in populations with low disease prevalence. The sensitivity for cancer detection approaches that of MRI and the specificity has been found to be slightly better. CEDM/CESM requires IV injection of 1.5mls/kg of standard iodinated contrast media. Combined acquisition of 2D/3D/CEDM images in 8 minutes provides an opportunity for standard and supplemental surveillance ‘up front’, in the population at moderately increased risk, performing better than WBUS (Whole Breast Ultrasound) as supplemental screening. The radiation dose falls well within the allowable 3mGy limit. It is more time efficient for radiologists, radiographers, and women. It will reduce the need for bilateral breast ultrasound as a supplemental screening test and promote more targeted use of ultrasound. Drawbacks include the presence of background parenchymal enhancement and lack of kinetic information. CEDM provides an easily recognisable road map for surgeons and an overview of the breast landscape in comparison with WBUS. Abbreviated Breast MRI (ABBMRI) is being implemented as a means of overcoming the problems of access, expense and capacity of MRI services worldwide. Diagnostic accuracy has been found to be equal to that of the full protocol. Studies range from 3 to 7 minutes table time. Ultrafast sequences, alone, or interleaved in the early phase, add kinetic information which helps to overcome the masking effect of background parenchymal enhancement, and add data about angiogenetic characteristics of lesions. This may reduce benign biopsies, improve specificity and perhaps provide information about tumour grade. The application of AI to the analysis of these data sets will establish important biomarkers in pre-operative staging. Finally, gadolinium deposition, albeit that there are no known associated clinical syndromes, is driving research into non- contrast MR sequences, including diffusion imaging, spectroscopy, T2 mapping, & 13C Hyperpolarized MRI.

BREAST CANCER AND SKELETAL HEALTH; DRUG THERAPY AND THE MYTHOLOGY OF VITAMIN D

Ego Seeman

Depts. Endocrinology and Medicine, Austin Health, University of Melbourne, Melbourne, Australia

Women treated for breast cancer have improved survival but oestrogen ablation causes remodeling imbalance and increased bone turnover. Many remodeling events, each depositing a smaller volume of bone than they remove, produce accelerated cortical porosity and thinning and trabecular thinning and perforation. Increase in cortical porosity reduces its strength to the 7th power, thinning and loss of trabeculae reduce its strength to the 3rd power predisposing to fractures. Premenopausal women mean age 43 years with breast cancer treated with oestrogen ablative therapy have microstructural decay equivalent to that seen in postmenopausal women 20 years older (Ramchand Bone 2017;103:131-5). As microstructural deterioration is not reversed when antiresorptives are administered, it is rationale to start therapy at the time of oestrogen ablation and continue it for the duration of treatment, particularly as stopping treatment result in rapid bone loss, especially with drugs like denosumab. Fracture risk is reduced in postmenopausal women treated for breast cancer. No prospective controlled studies have been done in premenopausal women with breast cancer.

Vitamin D deficiency or lack of sufficiency is associated with many illnesses and total mortality, including breast cancer. Supplementation is reported to be beneficial in some, but not all studies. Associations are suggested by finding 1alpha hydroxylase and the vitamin D receptor in breast tissue, antiproliferative activity of 1,25 D in preclinical cancer models and breast cancer in VDR null mice. Over 600 randomised trials in cancer research and over 1500 studies of bone health have been funded by the NIH. The definition of ‘deficiency’ (serum 25 [OH]D < 30 nM) and ‘insufficiency’ (25[OH]D < 70 nM) is based on studies of bone health. The data from many of these studies challenge the veracity of these thresholds (Shah JClin Endocrinol Metab 2017; 102: 2321-8). The challenge is in the interpretation of the work. By far, most studies are observational cohort or case-control studies from which causation can never be inferred. In prospective controlled trials, the design and execution have flaws, almost without exception – inclusion of subjects without serum 25 [OH]D deficiency, drop outs with loss of the inception cohort introducing confounders, healthy user bias and lack compliance; features that make recommendations opinion based not evidence based.

IMAGING ASSESSMENT OF RESPONSE TO NEOADJUVANT CHEMOTHERAPY

Clair Shadbolt, *Australia*

Neoadjuvant chemotherapy (NAC) followed by surgery is currently the primary therapeutic option available to obtain a potential cure for women diagnosed with locally advanced breast cancer. Assessment of tumour response to NAC has traditionally been via clinical examination and conventional breast imaging modalities including mammography and ultrasound (US) which measure decrease in size / volume of the tumour and look for visible evidence of tumour necrosis. It is well established that metabolic changes will occur within tumours as they respond to NAC long before the visible anatomic alterations to the tumour size and morphology detected on conventional imaging. It has therefore been paramount to find, develop and refine functional imaging modalities that can be used to evaluate early metabolic treatment effects within tumours induced by NAC agents and therefore allow patients to be stratified into an individualised treatment plan based on their own cancer's particular biological profile. I will discuss the current imaging modalities available to assess tumour response to NAC, including the accuracy of functional imaging techniques that aim to detect and measure early metabolic response of breast cancers due to NAC and therefore possibly predict pathologic response and long-term outcomes.

BREAST CANCER CONTROL IN TIMOR-LESTE

Alito Soares
Hospital Nacional Guido Valadares (HNGV), Timor Leste

Introduction: The Democratic of Timor-Leste is a lower-middle income country currently entering a period of rapid economic and social development, assisted by political stability and a progressive population. Total population is 1.2 million, with three-quarters living in rural areas and one-fifth in the capital. The progress includes development health system in managing the burden of non-communicable diseases such as cancer. There is no systematic cancer reporting in the country, however manual records indicate breast cancer involves about 10% of the workload for the general surgical department. The majority of breast cancer patients present with advanced stages (stage III and IV). It is estimated that at least 50% of breast cancer patients treated at HNGV are palliative, with over 80% mortality overall. **Objectives:** Timor-Leste National Breast Cancer Control (TLNBCC) project was established in 2017 at HNGV. The objective is "Improving Breast Cancer Outcomes in Timor-Leste" through cancer control involving prevention, early detection, diagnosis and treatment. **Materials and methods:** TLNBCC has four elements: 1) addressing community education around early detection and awareness, 2) health professional education (particular in regional clinics and health posts) around the signs and symptoms of breast cancer and prompt referral for proper management, 3) improving diagnostic and treatment facilities at HNGV, and 4) developing a palliative care service. **Results:** HNGV single tertiary care provided breast clinic consultation since 2015; total 249 women are with breast cancer and around 82 mastectomies by local and international surgeon (Royal Australasian College of Surgeons, Cuban and Chinese). Thus it is likely many cases are simply not presenting to the tertiary hospital this is due to patients not resenting with their cancer due to fear, lack of health knowledge, lack of transportation and due to seeking traditional treatments. Some advanced cases presenting to regional or rural health services may not be referred due to lack of available treatment facilities. **Discussion:** There are very limited cancer services in country, with no histopathology, radiotherapy and chemotherapy. Immediate action to improving diagnostic and treatment facilities at a national level will make a significant impact to improve breast disease. Early referral, increasing community awareness, acceptance treatment will increase surgically curable disease. **Conclusion:** Community awareness, health professional education and prompt referral, along with developing the diagnostic and treatment facilities at a national level, are the foundations for improving breast cancer outcomes in Timor-Leste.

MANAGING CHALLENGING ~~PATIENTS~~ CLINICIAN-PATIENT ENCOUNTERS

Lesley Stafford
Centre for Women's Mental Health, Royal Women's Hospital, Australia

The focus of this presentation is to provide clinicians with ideas for managing encounters with patients who are often labelled as 'difficult', 'frustrating', or 'challenging'. The value of reframing the issue in such a way as to 'separate the person from the problem' will be highlighted and a rethinking of how clinicians conceptualize success in their relationships with patients will be reviewed. It is proposed that negotiating a solution towards a shared problem is more constructive than trying to convince or debate. Drawing on the empirical research, the most common reasons for clinicians perceiving an encounter with a patient as difficult will be discussed. Specific attention will be paid to the management of women who choose alternative therapy to the exclusion of conventional cancer treatment in the management of their disease and strategies thought to increase the likelihood of women accepting conventional treatment will be presented. Common pitfalls to avoid in handling conflict of any type with patients, and useful communication tools including a structured approach to managing disagreement, will be reviewed.

DEBATE: THAT TWO-STAGE IMPLANT BASED CONSTRUCTION IS RARELY INDICATED – NO

Dean Trotter, *Australia*

Background: Implant breast reconstruction has been performed since 1962. One-stage implant reconstruction, also known as "direct to implant" (DTI), was the original method of implant breast reconstruction however did not become routine practice due to high complication rates and unsatisfactory results. Since the invention of the tissue expander, two-stage implant reconstruction remains the most common method of breast reconstruction due to consistent results and high patient satisfaction. Over the last decade new technologies and devices, such as fluorescence imaging systems and acellular dermal matrices (ADM), have led to a resurgence in one-stage implant breast reconstructions. The question now arises, is a two-stage implant reconstruction rarely indicated? **Method:** A

literature review and clinical experience are the basis for forming the negative argument in this debate. **Results and Discussion:** Implant-based reconstruction constitutes 82% of all breast reconstructions in the USA (2017), with 70% of all reconstructions two-stage, whilst 12% are one-stage. Current trends in breast reconstruction are driven by studies with a low level of evidence. Virtually all recent published data needs to be considered in this light. Despite most studies indicating an increased risk of complications when using ADM, they are now used in approximately 70% of reconstructions performed in the USA. ADM is used in both one and two stage reconstructions due to perceived benefits of increased aesthetic satisfaction, expedited completion of reconstruction and improved patient comfort. Unfortunately, selection bias in most studies prevents true analysis of risks of one-stage reconstruction. At present there is only one randomised study comparing one and two-stage implant reconstruction. In this study 46% of patients developed surgical complications and there was an unacceptably high reconstruction failure rate of 27%. 30-day post-operative complication rates were significantly different with rates of 39% versus 14% for the one and two-stage groups respectively. Most studies have observed significantly higher rates of complications with one-stage implant reconstruction. Importantly, a recent meta-analysis showed a reconstructive failure rate of 14.4% for one-stage vs 8.7% for two-stage reconstruction. Studies show that up to 51% of one-stage reconstructions ultimately require reoperations, most of these within 2 years, generally for implant-related complications or aesthetic dissatisfactions. **Conclusion:** Implant breast reconstruction remains the most common method of breast reconstruction. Two-stage reconstruction is the procedure of choice in most patients. One–stage reconstruction is a reasonable option in selected patients.

THAT 10 YEARS OF AET IS OVERTREATMENT - YES
Janice Tsang
Specialist in Medical Oncology, Hon. Clinical Assistant Professor, Li Ka Shing Faculty of Medicine, The University of Hong Kong; Founding Convenor, Hong Kong Breast Oncology Group (HKBOG)

Hormone receptor-positive breast cancers represent the vast majority of early breast cancer around the world. Adjuvant endocrine therapy (AET) is known to be highly effective and appropriate for nearly all women with hormone positive breast cancer, making such treatment one of the most widely prescribed therapies for this clinical subtype of patients in both the developed and the developing countries. There has been emerging data on the duration of AET evidenced by a number of studies with longest reported follow-up showing breast cancer survival benefit with AED beyond 5 years and even with 10-year duration. The use of 10-year duration of AET has shown to be associated with lower risks of breast cancer recurrence and contralateral breast cancer. Yet, are all women with hormone receptor-positive breast cancer obliged to take a total of at least 10 years of AET in the era of personalized medicine and precision medicine? Will all women with hormone receptor-positive breast cancer deriving the same level and absolute amount of benefit from 10 years of AET, meaning we should treat this group of women as a homogenous population? Are there any cons for this treatment approach and is there any possibility that this is an over-treatment? This presentation will review solid data and show the potential overtreatment of 10 years of AET for all women with hormone receptor-positive early breast cancer and hope to bring new insights to the audience.

THE CASE OF USING PROSIGNA (PAM50)
Janice Tsang
Specialist in Medical Oncology, Hon. Clinical Assistant Professor, Li Ka Shing Faculty of Medicine, The University of Hong Kong; Founding Convenor, Hong Kong Breast Oncology Group (HKBOG)

Breast cancer is a heterogenous and complex disease that encompasses different distinct biological features and clinical outcomes. Hormone receptor-positive breast cancers represent the vast majority of early breast cancer and our clinical practice. Even within this particular clinical subtype, there are different intrinsic subtypes governing the prognostic features and the overall clinical outcome. Treatment decision used to be based largely on clinical and histopathological criteria such as age, tumour size, histological grade, lymph node metastasis, lympho-vascular invasion, and the estrogen receptor (ER), progesterone receptor (PgR) and the human epidermal growth factor receptor 2 (HER2) status. Currently, there are multiple available molecular genomic assays looking at the risk of recurrence and the absolute benefits from chemotherapy for hormone receptor-positive breast cancer. Prosigna is a standardized test based on the PAM50 gene signature which provides information on intrinsic subtypes and risk of recurrence (ROR) score predicting 10-year recurrence probability. Prosigna results do influence treatment decisions and reinforced its clinical utility in real-world settings, while the “clinical intrinsic subtype” with the intrinsic subtype classification based on immunohistochemical (IHC) staining does not show to be an adequate surrogate for the genomic intrinsic subtype as determined by the PAM 50. This presentation will present real-world patient scenario with the application and utility of Prosigna and its added value discussed.

“I CAN’T UNDERSTAND IT – WHY WON’T SHE HAVE THE TREATMENT?”
Jane Turner, *Australia*

Early detection and improved treatments mean that women diagnosed with breast cancer in Australia have amongst the highest survival rates in the world. However, despite access to evidence-based treatment some women have difficulty making treatment decisions, show variable adherence to previously-agreed treatment regimens or openly reject treatment recommendations. These behaviours may not be anticipated and can test even the most experienced clinician who finds it difficult to understand why the individual has responded this way. This presentation provides an overview of the complex determinants of personality and adult adjustment, drawing on emerging evidence about the neurobiological correlates of exposure to early life stress. Concepts of loss and grief will also be considered in terms of the ways in which these may shape cognitive and personality styles into adulthood. Illustrative case

vignettes will highlight ways in which past experiences profoundly affect the woman confronted with a diagnosis of breast cancer.

THAT DOSE-DENSE CHEMOTHERAPY SHOULD BE THE STANDARD FOR ALL SUBTYPES OF EARLY BREAST CANCER

Linda Vahdat, *USA*

Dose dense chemotherapy is grounded in mathematical modeling put forth by Norton and Simon in 1997 that suggested that interval between treatment cycles was critical for success in reducing risk of breast tumor relapse. It is based on the observation that in experimental models, a given dose always kills a certain fraction, rather than a certain number, of exponentially growing cancer cells. Twenty years later, dose dense chemotherapy is considered a standard strategy in the administration of chemotherapy in the adjuvant setting. Dose-density can be achieved multiple ways, (1) through the use of sequential therapy with non-cross resistant therapies to cause cell kill in tumors composed of heterogeneous cells or (2) shortening of the inter-treatment interval to minimize the re-growth of tumor cells, thus allowing for more effective cell killing. Several trials have tested this concept with the majority demonstrating improved efficacy with a dose-density when compared with a non- dose dense schedule. One of the first trials to support dose dense chemotherapy as a treatment strategy was CALGB 9741 which showed that when dose size and cycle numbers were kept constant, shortening the inter-treatment interval between each chemotherapy dose, with granulocyte-colony stimulating factor support, significantly improved both disease-free and overall survival. A recent meta-analysis1 pooled data from 16 trials in >21,00 women enrolled in dose dense trials demonstrated that a reduction in recurrence of 15% and an improvement in survival across ER positive and negative tumors. In summary, dose dense chemotherapy represents a strategy to optimize how we deliver drugs and is the foundation on which we further layer strategies to prevent metastases.

[1]Gray et al. Increasing the dose density of adjuvant chemotherapy by shortening intervals between courses or by sequential drug administration significantly reduces both disease recurrence and breas cancer ortality: An EBCTCG met-analysis of 21,000 women in 16 randomized trials. San Antonio Breast Cancer Symposium 2017. Abstract GS1-01

BIOLOGICAL MECHANISMS OF BREAST CANCER-ASSOCIATED COGNITIVE IMPAIRMENT

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70% of cancer patients report cognitive symptoms and 40% have measurable cognitive impairment such as learning, concentration, and memory deficits. Cognitive impairment impedes patient medical decision making and adherence to long-term cancer treatments. Cognitive impairment drastically reduces quality of life and disrupts survivors' ability to return to work – the cost of which is estimated at $300,000-500,000 per person. To address this significant problem, behavioural strategies have been trialed to treat cognitive impairment in cancer patients. However, these strategies do not target the biological mechanisms of cognitive impairment caused by cancer and its treatment, which may explain why recent attempts have failed. No pharmacological strategies to target the biological mechanisms of cognitive impairment in cancer patients currently exist. Mouse models are desperately needed to identify tractable targets for intervention. While cognitive impairment associated with cancer has long been attributed to the effect of chemotherapy, increasing numbers of studies show patients can present with cognitive impairment prior to chemotherapy. My laboratory is able to experimentally replicate this phenomenon. Using multiple mouse models of triple negative metastatic breast cancer we demonstrated that a peripheral solid tumour alone is sufficient to induce episodic memory impairment by inducing inflammation. Using bioluminescence imaging we are able to track primary tumour growth and metastasis and examine the impact of cancer progression on cognition. Our studies indicate that before a tumour is palpable and before symptoms of sickness emerge, a breast tumour is capable of hijacking the brain to impair its function. We show that inflammatory mediators secreted by tumour cells are responsible for cognitive impairment. Remarkably, low dose aspirin completely blocks tumour-induced memory impairment, suggesting that anti-inflammatories may be repurposed to combat cancer-associated cognitive impairment. My laboratory is invested in developing a mouse model of cancer survivorship to investigate treatment strategies that can reverse cognitive impairment in cancer survivors. We have developed a mouse model of breast cancer surgery (lumpectomy vs mastectomy) to examine post-operative cognitive decline, and have experimentally replicated the phenomenon of chemobrain in response to paclitaxel treatment in mice. We are using non-targeted metabolomics in the brain to identify potential mechanisms. Our mouse survivorship model will combine all 3 of these key cancer treatment events: the cancer, tumour resection surgery and chemotherapy to create "survivor" mice, and examine in controlled laboratory settings the long-term impact of the "cancer journey" on the brain.

HOW TO GET RADIOTHERAPY TO RESOURCE-POOR NATIONS

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The global incidence of cancer is rising rapidly, particularly in low and middle-income countries (LMICs). Radiotherapy is a core component in the treatment of malignancies, including breast cancer. Despite this, there is a significant shortfall of services in LMICs, with 65% of low-income countries having no radiotherapy services available. Recently, an evidence-based case for investment in radiotherapy services in LMICs has been developed. The Global Task Force for Radiotherapy in Cancer Control (GTFRCC)'s Lancet Oncology Commission paper demonstrated that although initial outlays are required to start up a

radiotherapy service, economic net gains can be achieved in LMICs over a 20-year period. It has been estimated that >5500 megavoltage machines would be required to meet the gap in radiotherapy services in LMICs. The challenges pertaining to radiotherapy in LMICs are not just limited to the supply of radiotherapy machines, but also concern the safe and effective running of new and established radiotherapy departments. The cessation of radiotherapy services in Papua New Guinea serves as one example of the many challenges facing LMIC radiotherapy departments. There is a severe shortage of trained radiotherapy and oncology staff in LMICs, with the GTFRCC report estimating that over 30 000 radiation oncologists, 22 000 medical physicists and 78 000 radiation therapists will need to be trained in LMICs by 2035 in order to meet the projected radiotherapy demand. Regional organisations such as The Royal Australian and New Zealand College of Radiologists (RANZCR) Asia Pacific Radiation Oncology Special Interest Group (APROSIG) aim to support LMIC radiotherapy departments in this endeavour, mainly through in-country education and training. As well as regional/international support, the key factors on a local level imperative to success will be discussed, with examples such as Cambodia and Botswana used to illustrate these. With regards to technology use in these countries, the approach has been stratified to the needs and expertise on a local level. Collaboration between these local, regional and international initiatives, as well as the International Atomic Energy Agency (IAEA) and other organisations is crucial in bringing safe and effective radiotherapy to resource-poor nations.

THE CASE FOR RARELY USING AN ASSAY
Belinda Yeo, *Australia*

Adjuvant treatment decisions in hormone receptor positive, HER2 negative early breast cancer can be challenging for both the patient and the clinician. Patients with low risk disease are usually offered endocrine therapy alone, whilst patients with high risk disease tend to be offered chemotherapy and endocrine therapy. Clinicopathological information provides an enormous amount of prognostic information to help with this decision-making. Whilst molecular assays have taught us more about the biological drivers of breast cancer recurrence, their role in adjuvant decision-making around the world is by no means ubiquitous. Here, we discuss the role of our traditional clinicopathological factors and their retained significance in clinical decision making for women with hormone receptor positive, HER2 negative breast cancer.

ORAL ABSTRACTS

OR01

CANASSIST-BREAST: UNIQUE IMMUNOHISTOCHEMISTRY BASED TEST FOR RISK OF RECURRENCE PREDICTION FOR EARLY STAGE BREAST CANCER PATIENTS: A COST-EFFECTIVE, ACCURATE AND BROAD BASED SOLUTION FOR ASIA

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Problem statement: Current molecular risk stratification tests have helped clinicians to optimize chemotherapy for hormone receptor positive, HER2 negative early stage breast cancer patients leading to huge savings in treatment costs and improved quality of life. However, current tests are not impactful in the Asian subcontinent due to the extreme cost-sensitivity of the market. Aim of this study was to develop and validate a cost-effective and accurate test based on insightful biomarkers involved in tumor recurrence using robust statistical methodology to stratify patients based on risk of recurrence. **Methods:** A retrospective cohort of 300 patients, was used to develop 'CanAssist-Breast'(CAB)- an immunohistochemistry based test comprising 5 biomarkers plus three clinical parameters (Tumor size, node status and grade) using machine learning based algorithm. Retrospective clinical validation on 850+ cases was performed and Kaplan Meier curve analysis, multivariate analysis was performed to assess robustness of the algorithm. **Results:** CanAssist-Breast classifies patients into 'low or high' risk of recurrence based on recurrence score on a scale of 1-100 with a cut off at 15.5. Clinical validation of CAB showed distant metastasis-free survival (DMFS) was significantly different between low- (DMFS: 95%) and high-risk (DMFS 80%) groups in the validation cohort treated with hormone therapy alone (n=195) and in the entire validation cohort of 857 patients as well. In multivariate analysis, CAB risk score was the most significant independent predictor of distant recurrence with a hazard ratio of 4.25 (P=0.009). Patients stratified as high-risk by CAB have 19% chemotherapy benefit. We also show that CAB can further identify discrete low- and high-risk sub-groups within IHC4 intermediate risk group and also in a node and age independent manner. **Conclusions:** To our knowledge, CAB is the first SVM based prognostic risk of recurrence prediction classifier using a combination of unique biomarkers and clinicopathological parameters. We believe that CAB enables accurate treatment planning in early stage HR+/HER2- breast cancer patients in low-resource settings.

OR02

SPY FLUORESCENCE ANGIOGRAPHY: AN ADJUNCT TO IDENTIFYING CASES SUITABLE FOR STAGED BREAST RECONSTRUCTION

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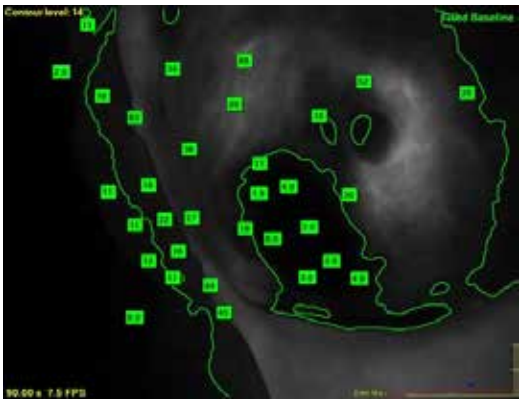
Problem statement: Flap and nipple necrosis remain a serious complication of immediate implant based breast reconstruction with a rate of 10% quoted in the literature. ICG (Indocyanine green) and SPY technology were used to objectively identify poor tissue perfusion and proceed with a staged approach to immediate breast reconstruction. **Methods:** A retrospective audit of patients with objective evidence of poor tissue perfusion (score14) using SPY technology intraoperatively following NSM (Nipple Sparing Mastectomy). A sizer was placed in the prepectoral space, the SPY camera positioned over the nipple and ICG injected intravenously. Fluorescence Angiography provides visualization of macro and microvascular blood flow and assessment of tissue perfusion in real-time. Reconstruction was deferred for a week or two in these patients. A drain was placed in the prepectoral space and the wound closed. SPY analysis was repeated after a week's interval and we proceeded to reconstruction with tissue perfusion scores showing improvement to 14.



Results: Out of 109 patients, SPY predicted significantly poor tissue perfusion (No tissue necrosis occurred in the 12 patients following staged reconstruction). Patient satisfaction with outcomes has been excellent. **Conclusion:** Whilst SPY technology provides objective evidence of tissue perfusion in all patients undergoing NSM, this study highlights the importance of identifying patients with poor perfusion intraoperatively and pre-emptively avoiding the catastrophic consequences of flap/nipple necrosis in immediate breast reconstruction. High risk patients who have had previous surgery/radiation, smokers and those with larger ptotic breasts would benefit from intraoperative assessment of perfusion. There is a role for the staged approach to immediate implant based reconstruction if tissue perfusion is deemed to be questionable after NSM. The cost of SPY technology, whilst prohibitive to most healthcare providers in Australasia, must be weighed against the personal and financial cost to the patient with a failed breast reconstruction.

OR03

LIPOSUCTION FOR ADVANCED BREAST CANCER-RELATED LYMPHOEDEMA - OUTCOMES OF A MULTIDISCIPLINARY TEAM APPROACH

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Problem Statement: Lymphoedema is a potentially debilitating condition often resulting in physical, functional and psychological impairments. This research describes and evaluates liposuction surgery and a multidisciplinary rehabilitation approach for patients with advanced breast cancer-related lymphoedema (BCRL) of the arm at the Macquarie University Hospital. **Methods:** A prospective analysis was undertaken on patients with unilateral, non-pitting secondary advanced (International Society of Lymphology (ISL) stage II or III) lymphoedema, with a calculated limb volume difference greater than 20% and for whom conservative therapies were no longer effective. Following surgery, patients were required to wear compression garments continuously and were monitored at 6 weeks, 3, 6, 9, 12, 18 and 24 months with bioimpedance spectroscopy (L-Dex), volume differences calculated using circumference measures and functional assessments. Between May 2012 and April 2018, 89 patients with both upper and lower limb lymphoedema (80 women and 9 men) underwent liposuction surgery. Thirty-one patients who had liposuction surgery for breast cancer related lymphoedema (BCRL) between May 2012 and Dec 2017 are the subject of this study. **Results** The mean length of time with lymphoedema prior to surgery was 7.5 years (range, 1-29 years). The median follow-up time since liposuction was 18 months (range, 3-54 months). Mean pre-surgical limb volume difference was 1,168ml (41.8%) and reduced to 24.5ml (1.5%) by 6-months post-surgery, a mean percentage volume reduction of 100%. By 12 months, mean limb volume difference was 6.5mls (100% reduction) and by 24 months, mean limb volume difference was -1.5 ml (100% reduction). Patients reported improved symptoms and quality of life. Bioimpedance spectroscopy showed reduced extracellular fluid between arms from a mean L-Dex pre-surgery of 45.8 to 35.6 at 6 months, 30.0 at 12 months and 26.8 at 24 months. There were no post-operative infections, skin necrosis, wound breakdown or embolic complications. **Conclusions:** Liposuction, undertaken within a multidisciplinary team environment, is a safe and effective option to improve the symptoms and quality of life for patients with advanced BCRL.

OR04

ACTIVE MONITORING IS AN ACCEPTABLE CHOICE FOR WOMEN WITH LOW RISK DUCTAL CARCINOMA IN SITU (DCIS): AN ASSESSMENT OF QUALITY OF LIFE

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Problem statement: Breast cancer screening is effective in reducing breast cancer mortality, but there is increasing concern that it may also lead to overdiagnosis; the detection and treatment of a cancer that would never have presented symptomatically during the woman's lifetime. Conservative management of low risk breast cancer may reduce the harm of overdiagnosis resulting from mammographic screening programmes, yet little is known about how such strategies might impact upon quality of life. The aim of this study was to quantify women's preferences for managing low risk breast cancers identified by breast cancer screening, including the acceptability of active monitoring as an alternative treatment choice. **Methods:** Utilities (cardinal measures of quality of life) were obtained from women with and without a history of breast cancer in the Melbourne metropolitan area for seven health states reflecting low risk ductal carcinoma in situ (DCIS) using rating scales, standard gambles and the Euro-Qol 5D questionnaire. Baseline demographics and a history of prior screening participation or breast cancer diagnosis were examined as predictors of screening and treatment preferences. **Results:** Most women (75%) indicated that they would consider active monitoring an acceptable choice for managing low risk DCIS, with a mean utility of 0.902 (SD 0.084) versus 0.749 (SD 0.216) for immediate invasive treatment. The impact of active monitoring on quality of life was comparable to breast conserving surgery, although women in both patient and general population groups rated active monitoring more favourably as the risk of disease progression decreased from 40% to 10%. Utilities were lowest for DCIS treated with mastectomy or invasive adjuvant treatment. There was heterogeneity between patient preferences suggesting that individual risk aversity does affect individual acceptability of active monitoring as an alternative option. **Conclusion**: Overdiagnosis remains a challenge for breast cancer screening programs. This study suggests that active monitoring of low risk ductal carcinoma in situ is an acceptable option for reducing the impact of overdiagnosis and overtreatment in terms of quality of life.

OR05

RIBOCICLIB WITH ENDOCRINE THERAPY FOR PREMENOPAUSAL WOMEN WITH HORMONE RECEPTOR-POSITIVE (HR+), HER2-NEGATIVE (HER2–) ADVANCED BREAST CANCER (ABC): ADDITIONAL RESULTS FROM THE MONALEESA-7 TRIAL

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Problem statement: MONALEESA-7 (NCT02278120) is a Phase III trial of ribociclib + tamoxifen/non-steroidal aromatase inhibitor (NSAI) in pre-/perimenopausal patients with HR+, HER2– ABC. Here, we report additional data, including objective tumor response and health-related quality of life (HRQoL) outcomes in patients from MONALEESA-7. **Methods**: Patients (no prior endocrine therapy; ≤1 line of chemotherapy for ABC) received ribociclib (600 mg/day, 3-weeks-on/1-week-off) or placebo with tamoxifen (20 mg/day)/NSAI (letrozole [2.5 mg/day]/anastrozole [1 mg/day]), and goserelin (3.6 mg every 28 days). Endpoints, primary: progression-free survival (PFS); secondary: included HRQoL (European Organisation for Research and Treatment of Cancer core quality-of-life questionnaire [EORTC QLQ-C30]) and duration of response (DoR). **Results**: The study met its primary objective: PFS was significantly longer in the ribociclib (n=335) vs placebo arm (n=337; hazard ratio: 0.553; 95% confidence interval [CI]: 0.441–0.694; p=9.83×10–8). Among patients with measurable disease at baseline (ribociclib vs placebo), 137/269 (51%; 95% CI: 45.0–56.9) vs 100/275 (36%; 95% CI: 30.7–42.0) patients had a complete or partial response (95% CI: 6.3–22.8; p=3.17×10–4). The probability of a response by 6 months (ribociclib vs placebo) was 35% (95% CI: 30.1–40.6) vs 25% (95% CI: 20.2–29.6); a decrease in best percentage change from baseline in any tumor size was reported for 83% vs 71% of patients. The median DoR was 21.3 months (95% CI: 18.3–not reached [NR]) for the ribociclib arm and 17.5 months (95% CI: 12.0–NR) for the placebo arm. At Week 8, a decrease in any tumor size was observed in 58% (193/335) vs 48% (163/337) of patients in the ribociclib vs placebo arms. The mean pain reduction from baseline was 20% in the ribociclib arm and 14% in the placebo arm at Week 8; median percentage change from baseline in EORTC QLQ-C30 pain symptom score was –33% and –17%, respectively. Conclusion: In pre-/perimenopausal women with HR+, HER2– ABC, ribociclib + tamoxifen/NSAI and goserelin significantly prolonged PFS and was associated with a higher objective tumor response rate vs placebo + tamoxifen/NSAI and goserelin. An early and durable tumor response, and a reduction in pain at Week 8, were also observed in the ribociclib arm.
Disclosure: Novartis-funded study.

OR06

INTRAOPERATIVE ASSESSMENT(IOA) OF THE SENTINEL NODE(SN) IN BREAST CANCER BY ONE STEP NUCLEIC ACID ASSAY(OSNA): WARWICK EXPERIENCE OF OVER 1100 PATIENTS

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Introduction: The intraoperative assessment of the sentinel node in women with breast cancer enables an immediate axillary node clearance to be done as part of the same operative procedure if the SN is positive. This has significant benefits for the Patient, Surgeon and Health Care Provider. OSNA is an automated molecular assay using a Polymerase Chain Reaction(PCR), which detects the presence of cytokeratin 19 in the SN. **Methods:** All patients with operable breast cancer who were node negative on clinical and radiological assessment of the axilla, and who had their axilla staged by a SN biopsy at Warwick Hospital, over a 7 year period were included in this study. Data was collected from a prospective database. The axillary node positivity rate with macrometastatic and micrometastatic disease as detected by OSNA was collected and compared with a group of 411 patients who had the IOA by Touch Imprint Cytology(TIC) and final histology by conventional Haematoxylin & Eosin(H&E) assessment, prior to the introduction of OSNA. **Results** 1148 patients had their SN assessed intraoperatively using OSNA in this 7 year study period. The SN was positive in 376 patients (32.8%). Of those who had a positive node, 183 (15.9%) had macro-metastatic disease and 193(16.8%) had micro-metastatic disease. When compared to 411 patients in the pre-OSNA period, that were assessed by TIC and H&E, the node positivity rate increased from 23.8% to 32.8%(p0.05) with the introduction of OSNA. Whilst there was a minimal increase in the rate of macrometastatic disease – 20.4% versus 15.9 %(p0.038), there was a highly significant increase in the patients who had micrometastases detected on OSNA - 3.4% versus 16.8 %(p0.05). **Conclusion:** Our results demonstrate that OSNA is a more sensitive test for picking up metastatic disease, especially micrometastatic disease. Results from ASCOG-Z11 and IBCSG23-01 have been reassuring that axillary treatment is not always needed for positive SN's. IOA of the SN with OSNA upstages the axillary nodal status, but the ability to proceed to an axillary node clearance at the same operation as the sentinel node biopsy, has significant advantages for the Patient, Surgeon and Health Care Providers.

OR07

CURATIVE INTENT STEREOTACTIC ABLATIVE BODY RADIOTHERAPY (SABR) IN OLIGOMETASTATIC BREAST CANCER – FINAL RESULTS OF A PHASE I CLINICAL TRIAL

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Problem Statement: It is postulated that aggressive local therapies in patients with oligometastatic breast cancer may result in prolonged disease free intervals. We hypothesise that stereotactic ablative body radiotherapy (SABR) is safe and effective in this context. This single arm feasibility aimed to assess feasibility, safety and efficacy of 20Gy single fraction SABR delivered in patients with 1-3 bone metastases from breast cancer. **Methods:** Oligometastatic breast cancer patients with 1-3 bone metastases received SABR at a dose of 20Gy in 1 fraction to each metastasis. The primary endpoint was feasibility of the treatment. The secondary endpoints were acute toxicity using CTCAE V4.0, and effectiveness of treatment measured by local progression free survival (LPFS), MDA classification of bone response and Sodium 18 Flouride PET scan response at 12 months post SABR. **Results** Fifteen patients were recruited to the study between September 2014 and October 2016. Eleven (73%) patients had 1 metastasis and 4 (27%) patients had 2 metastases. There were 11 (73%) ER+/HER2- (Luminal), 3 (20%) HER2+ patients and 1 (7%) triple negative breast cancer (TNBC) patient. Median follow-up time was 24 months. The treatment was feasible in 12 (80%) of patients with 3 (20%) patients having treatment delayed by more than 3 days. Ten (67%) patients experienced grade 1 treatment related toxicity, 4 (27%) experienced grade 2 toxicity and no patients experienced grade 3 or 4 treatment related toxicity. There were no local failures in any of the treated metastases and none of the patients died. In the 9 (60%) patients that were disease free and achieved a complete metabolic response on PET scan at 12 months, all 9 (100%) remained disease free at study closure. Ten (67%) patients remained disease free at study closure with no change to systemic treatment during the study period. **Conclusion:** SABR is a feasible, safe and effective treatment in oligometastatic breast cancer and should be considered as a treatment option in selected patients. Randomised trials are required to assess the impact of SABR when compared to the standard of care.

OR08

PATIENT REPORTED EXPERIENCES FROM THE PERSEPHONE EARLY BREAST CANCER TRIAL

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Problem statement: PERSEPHONE is a Phase 3 randomised non-inferiority trial comparing 6 months of trastuzumab to the standard 12 months in patients with HER2 positive early breast cancer. Trial patients also consented to a quality of life sub-study. Information was collected about the patient experiences. Collecting 'quasi-qualitative' data via open-ended questions adds depth and complements quantitative quality of life data. It allows patients to report experiences that may otherwise remain unknown. **Methods:** Alongside the toxicities reported on the trial case report forms (CRF) and patient booklets being collected, including quality of life (QoL) and Health Care Resource Usage, patients were invited to record any other comments they had about the study and their treatment. Experiences were recorded prior to commencement of trastuzumab, then 3-monthly for a year, then every 6 months up to year 2. Within a mixed methods framework, both the trial researcher and patient representatives explored the information collected using a thematic content analysis. ***Results:*** Between October 2007 and July 2015, 4088 patients were randomised. In total, 5542 experiences were recorded from 2456 patients across the 6 time-points. Patients offered information on all aspects of the study, including their views on the treatment, their care, the QoL questionnaire and the research itself. Most often mentioned was the impact the treatment had on participants personally - physically, psychologically or socially. Most frequently cited were aches and pains and fatigue; for many, these did appear to be particularly distressing and intractable. In parallel, the CRFs reported 20% of patients reporting a grade 3/4 toxicity during treatment (23% 12 month, 18% 6 month, p=0.004), with significantly higher rates of cough, pain, fatigue, chills and palpitations reported by the patients having 12 months trastuzumab (p0.05). **Conclusion:** Patients' experiences during and beyond trastuzumab highlighted the long-term cumulative effects of their treatment and confirm that patients do suffer from burdensome toxicity, which does affect their QoL.

OR09

HEALTH SYSTEM BARRIERS TO THE PROVISION OF BREAST RECONSTRUCTION OPTIONS IN AUSTRALIA: IMPROVING INFORMED CHOICE THROUGH APPROPRIATE REFERRAL

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Problem statement: Evidence-based guidelines around the world strongly recommend that all women undergoing mastectomy should have a pre-operative discussion about breast reconstruction (BR). Yet Australia's BR rate is lower than that of comparable countries and many women report they have not been offered BR. This study aims to document women's experiences of BR discussion and explore potential health system barriers to BR. **Methods:** Semi-structured interviews were conducted with 26 women previously treated for breast cancer, 31 surgeons and 37 other health professionals [n=94] between May 2015-May 2017. Responses from interviewees were grouped into topic-based categories for analysis. **Results:** Interview

responses identified referral-based barriers to BR discussion at three different levels: from a public or private screening centre to a General Practitioner (GP); from a GP to an appropriate surgeon; and from one surgeon (without BR skills) to another (with BR skills). **Conclusions:** In the current system of referral and care, a considerable proportion of women having mastectomy are not provided with an opportunity to discuss BR. National optimal referral pathways should be adopted at state and territory level, with endorsement sought from the national representative bodies of consumers, GPs, breast surgeons and reconstructive surgeons, to overcome health system barriers to BR discussion. Additional parallel measures would facilitate BR discussion through the education of clinicians and patients about the positive outcomes of having choice around BR options at the time of mastectomy.

OR10

IMPLICATIONS OF THE ST GEORGE RANDOMIZED BREAST BOOST TRIAL FOR REDUCED VOLUME OR DOSE BREAST RADIOTHERAPY STRATEGIES

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Problem Statement: This study tested if local control can be improved by adding a boost dose to whole breast radiotherapy without compromising cosmetic outcome by modestly reducing whole breast dose. **Methods and Materials:** 688 women with T_{is}-2 N0-3 M0 breast cancer after lumpectomy were randomised to either adjuvant tangential radiotherapy 50 Gy in 25 fractions (NB) or 45 Gy in 25 fractions plus a 16 Gy in 8 fraction boost (B). Minimum follow-up of 10 years (median 14) was achieved in 2017. **Results:** Patient ages ranged from 24 to 85 (mean 59) years, 75% were post-menopausal. The mean margin was 3.7 mm. Mean tumour size was 18 mm, extensive intra-duct component was present in 10%, lympho-vascular space invasion in 14%, 76% were ER positive. 24% had positive lymph nodes. Chemotherapy was used in 20%, endocrine therapy in 39%. Mean boost volume was 153 cc. The 15 year in-breast local failure rates are NB 6.2% (3.9-9.4) versus B 14.4% (10.9-19.1), p=0.0004. Partial breast irradiation (PBI) guidelines criteria (ABS, ASBS, NSABP/RTOG, GEC-ESTRO) and IMPORT LOW trial eligibility criteria were applied as a secondary analysis. 39%, 27%, 81%, 35% and 37% respectively of patients fitted these PBI criteria. Only for the least restrictive group (NSABP/RTOG) did criteria compliant patients have statistically significantly increased local failure (7% v 5% p=0.01) with overall 10 year local recurrence rates of 4% - 7%. For PBI criteria non-compliant patients local recurrence rates were all significantly higher in the reduced whole breast dose groups (13% v 7% p=0.0005, 13% v 6% p=0.0001, 22% v 8% p=0.007, 13% v 6% p=0.0003, 13% v 6% p=0.0008 respectively. In no subgroup did a boost with reduced whole breast dose offer a local control advantage over a whole breast dose of 50 Gy in 25 fractions (BED Gy4 of 75). **Conclusion:** Reduced whole breast dose is associated with significantly inferior local control despite the use of a boost unless applied only in patients fitting conservative PBI eligibility criteria. For patients who merit a boost, whole breast dose should not be reduced.

OR11

IDENTIFICATION OF BREAST CANCER SURVIVORS' SIDE EFFECTS AND SUPPORTIVE CARE NEEDS

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Problem statement: With growing numbers of breast cancer patients surviving many years after treatment; identification and management of side-effects and supportive care needs arising from treatment are essential for treatment adherence and quality of life. We sought to describe the extent of these side-effects and care needs and investigate whether medical and nursing staff differ in the documentation and follow-up of these issues. **Methods:** We conducted a retrospective audit of 160 women with early breast cancer who received treatment from 2016-2017 at a single breast service in Melbourne. Information was retrieved from medical and nursing survivorship planning consultations. Data extracted included all symptoms/issues recorded and referrals/services offered. Symptoms were categorised into six domains: hormonal therapy/menopause, lifestyle, bone health, psychosocial/mental health, sexuality and fertility. Data were coded independently by two investigators. Chi-square analyses were used to analyse the differences. **Results:** Mean±SD age at diagnosis was 60±11 years. The majority of patients were postmenopausal (76%), had breast-conserving surgery (83%), and received radiotherapy (72%) and endocrine therapy (93%). A substantial incidence of issues/symptoms was recorded: 74% menopause/hormonal therapy-related, 62% lifestyle-related, 56% psychosocial-related, 37% sexuality-related, 21% bone health-related and 8% fertility-related. Nurses were more likely to record symptoms than doctors: 74% vs 49% (menopause/hormonal, p.05, ϕ=0.2); 56% vs 10% (psychosocial); 62% vs 16% (lifestyle); 37% vs 5% (sexuality, p=.001, ϕ=0.3); 21% vs 9% (bone health; p.001, ϕ.6), and 8% vs 4% (fertility), respectively. Nurses were significantly more likely than doctors to refer patients for follow-up for hormonal (9% vs 5%, p=.002 ϕ=.3) and sexuality (9% vs 3%, p **Conclusion:** Side effects and other issues are common after treatment for early breast cancer. Identifying and addressing unmet needs provides the opportunity to substantially improve patient quality of life. Overall, nurses are significantly more likely to identify issues and make referrals for patients in this survivorship phase. The findings highlight the value of a multidisciplinary approach that extends beyond the treatment phase to enhance the long-term management of women with early breast cancer.

OR12

PHASE 2 KEYNOTE-086 TRIAL: RELATIONSHIP BETWEEN RESPONSE TO PEMBROLIZUMAB AND TUMOR INFILTRATING LYMPHOCYTE (TIL) LEVELS IN METASTATIC TRIPLE-NEGATIVE BREAST CANCER (mTNBC)

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Problem statement: Several studies demonstrate TILs are a consistent indicator of better clinical outcomes in TNBC. We assessed the correlation between TIL levels and response to pembrolizumab monotherapy in previously treated mTNBC of any PD-L1 expression (cohort A) or previously untreated PD-L1–positive mTNBC (cohort B) (KEYNOTE-086; NCT02447003). **Methods:** Stromal TILs were quantified using light microscopy of H&E-stained slides from tumor biopsies by one pathologist who was blinded to the clinical data. PD-L1 expression was assessed using the PD-L1 IHC 22C3 pharmDx (Agilent Technologies) and reported as combined positive score (CPS). Response was assessed every 9 weeks for 12 months, then every 12 weeks by RECIST v1.1 central review. Relationship between TIL levels and ORR was assessed using logistic regression adjusted for cohort (A vs B) and biopsy site (lymph node vs non–lymph node). *P* values are 1-sided. Correlation between TIL and PD-L1 was assessed by Spearman`s rank correlation coefficient. **Results:** Evaluable tumor samples were available from 228 of the first 254 patients enrolled: 153 from cohort A, 75 from cohort B; 168 samples newly obtained, 60 archival. Median [IQR] TIL level was higher in cohort B vs cohort A (15% [5-45%] vs 5% [1-10%]), in lymph node vs non–lymph node samples (10% [5-50%] vs 5% [1-15%]), and in archival vs newly obtained samples (15% [5-40%] vs 5% [1-15%]). ORR in patients with TIL level ≥ vs. median: 6% vs 4% cohort A; 30% vs 16% cohort B. Median [IQR] TIL level was higher in responders vs nonresponders (10% [4.5-22.5%] vs 5% [1-10%] cohort A; 45% [7.5-70%] vs 15% [5-30%] cohort B). In the combined cohorts, higher TIL level was associated with significantly improved ORR (*P*=0.03). PD-L1 CPS was significantly correlated with TIL levels (ρ=0.498, *P*0.001). **Conclusions:** TIL levels can identify patients with mTNBC who have a greater likelihood of achieving response to pembrolizumab monotherapy, particularly in the first-line setting.

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OR13

PHYSICAL FUNCTION FOLLOWING BREAST RECONSTRUCTIVE SURGERY: ARE MUSCULOSKELETAL SIDE-EFFECTS A PROBLEM?

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Problem statement: Despite the link between physical activity and cancer survival rates and the increasing number of women having breast reconstructive surgery, limited research has investigated the effect of the musculoskeletal issues experienced by women as a consequence of breast reconstructive surgery on their physical function. This study aimed to investigate the incidence and severity of musculoskeletal issues following breast reconstructive surgery and their effect on physical function. **Methods:** Two hundred and twenty-nine women who had a breast reconstruction completed an anonymous on-line survey where they ranked the incidence and severity of seven itemised musculoskeletal side-effects of their surgery and their perceived impact on physical function over three time periods (6, 12 and 24 months after surgery). The closer the score to ''10,'' the greater the combined incidence and severity of each side effect. The frequencies were tabulated and converted to a percentage of respondents for each musculoskeletal issue. The mean incidence/severity scores for each issue over the three time periods were compared using a one-way ANOVA. **Results:** The musculoskeletal issues reported by the participants were perceived to negatively affect their

physical function over the three time periods (Figure 1). Although the mean incidence/severity scores for each issue (except lymphoedema; *P*0.05) decreased over time, the percentage of respondents reporting moderate-high scores (³ 5/10) 6 months post-surgery were substantial (scars 44%, bra discomfort 60%, pain/dysfunction in the shoulder 47%, torso 38%, lower back 37% and donor site 30%, lymphoedema 21% and sleep discomfort 55%). **Conclusion:** Physical function and activity levels were perceived to be negatively affected by approximately 50% of women 6 months post-breast reconstructive surgery. In fact, musculoskeletal side-effects were reported to have a moderate-high severity and frequency in approximately a third of these women. Women require assistance to manage the musculoskeletal side-effects of breast reconstructive surgery to regain their physical function.

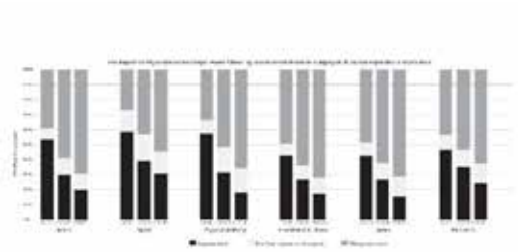

Figure 1: Number of respondents in Agreement, Disagreement and Neither Agreement or Disagreement that their musculoskeletal issues negatively impacted their physical function over the three time periods (6, 12 and 24 months after surgery).
Disclosure of Interest: Nil

OR14

THE UK-ANZ NEST (NEOADJUVANT SYSTEMIC THERAPY IN BREAST CANCER) MULTICENTER COLLABORATIVE STUDY

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Problem statement: Neoadjuvant systemic therapy (NST) has several potential advantages in the treatment of breast cancer. However, there is currently considerable variation in NST use. The NeST study is a national, prospective, multi -centre cohort study that is investigating current patterns of care with respect to NST in the UK. We propose a similar Australian-based initiative, engaging BreastSurgANZ trainees to collaborate on a large, national project, linking in with the UK breast research collaborative. **Methods:** In the UK, there has been tremendous success in delivering large trainee-led mutli-centre prospective cohort studies. We propose that the breast surgery clinical trials network and BreastSurgANZ training body encourage participation by all trainees in breast cancer centres, initially via the BreastSurgANZ trainee network. The study will consist of two phases; phase 1 – a national practice questionnaire (NPQ) to survey current practice and phase 2 – a multi-centre prospective cohort study of breast cancer patients, undergoing NST. Over a defined 6-12 month period, all women undergoing NST as their MDT recommended primary breast cancer treatment will be included. Patient demographics, radiological, oncological, surgical and pathological data will be collected, including complications and the need for further intervention. Data will be collated to establish current practice in Australia, regarding NST utility and variability of access and provision of these therapies. **Results:** Participating units will have access to their own data and collective results will be presented at relevant conferences and published in appropriate peer-reviewed journals, as well as being made accessible to relevant patient groups. Research ethics approval should not be required for this study, as has been the case in the UK, however it is anticipated that individual units would gain local audit department approval. The information obtained will provide valuable insights to help patients make informed decisions about their treatment. **Conclusion:** These data should help establish best practice in Australia with regards to NST, and the results will inform future service delivery as well as identifying further research questions.

OR15

NEOADJUVANT CHEMOTHERAPY RATES FOR BREAST CANCER IN AUSTRALIA – "ARE WE THERE YET?"

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Problem Statement: Neoadjuvant chemotherapy (NAC) is indicated in locally advanced breast cancer and being increasingly utilised in high-risk, early-stage breast cancer to improve surgical outcomes. This study examines the trends in NAC utilisation for early and locally advanced breast cancer in Australia. **Methods:** A retrospective analysis of prospectively collected data from the BreastSurgANZ Quality Audit database identified women registered with early breast cancer who received neoadjuvant chemotherapy from 2011 to 2016. Trend analysis for NAC utilisation was performed using the Cox Stuart Test. **Results:** 55757 cases of breast cancer were identified from 2011 to 2016, of which 2469 (4.43%) cases underwent NAC. There were no significant trends for cancer diagnosis in this period (p = 0.5). The proportion of patients receiving NAC increased from 3.08% in 2011 to 6.65% in 2016, however this trend was not statistically significant (p=0.125). **Conclusion:** Compared to other population-based studies in the administration of NAC for breast cancer, NAC is still underutilised in Australia. **Acknowledgements:** The Authors acknowledge the data reported here has been supplied by Breast Surgeons of Australia and New Zealand from the BreastSurgANZ Quality Audit. The interpretation and reporting of these data are the responsibility of the authors and should not be seen as an official interpretation by the BreastSurgANZ Quality Audit, or Breast Surgeons of Australia and New Zealand.
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OR16

VALIDATION OF iPREVENT, AN ONLINE BREAST CANCER RISK ASSESSMENT AND RISK MANAGEMENT DECISION SUPPORT TOOL

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Problem Statement: iPrevent (https://www.petermac.org/iprevent) is a new evidence-based, online breast cancer (BC) risk assessment and risk management decision support tool. It estimates personal BC risk using the IBIS and BOADICEA risk prediction models and provides highly-tailored risk management information. It has previously been shown to have high usability and acceptability for both women and clinicians but has not yet been prospectively validated with an independent cohort with long-term follow-up. Using prospective data, we validated the 10-year BC risk estimates provided by iPrevent. **Methods**: Subjects were 16,574 women in the international Prospective Family Study Cohort (ProF-SC), aged 18-70 years and without BC or bilateral mastectomy at recruitment. After 10 years follow-up, 655 women (4%) were diagnosed with invasive BC. iPrevent-assigned cumulative 10-year invasive BC risks were calculated using self-reported risk factors at cohort entry. To assess calibration, the mean iPrevent-assigned risk was compared with the mean 10-year observed invasive BC incidence, using a chi-squared goodness-of-fit statistic for the whole cohort, and by quartiles of risk. To evaluate discriminatory accuracy, the overall area under the receiver operating characteristic curve (AUC) for the development of invasive BC within 10 years was computed. Data were censored at date of invasive or in situ BC diagnosis, bilateral mastectomy, death, loss to follow-up, or at 10 years follow-up. **Results**: For the whole cohort, iPrevent assigned risk was well-calibrated – 690 expected BCs (E) 655 observed (O) (E/O=1.05, 95% CI: 0.98-1.14), although for women in the highest risk quartile, i.e. 6% 10-year risk, E/O=1.19, 95% CI: 1.07-1.32. The AUC was 0.70, 95% CI: 0.68-0.72. **Conclusion**: iPrevent is well calibrated overall and has good discriminatory accuracy for predicting 10-year BC risk, thus justifying its clinical use. Given iPrevent also provides highly personalised risk management information with a user-friendly interface, women and clinicians may find this a useful tool.

OR17

CRYOABLATION OF BREAST CANCER IN METASTATIC PATIENTS. PRELIMINARY EXPERIENCE

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Problem statement: metastatic breast cancer is considered an incurable disease, and the main treatment goal is palliation, with the aim of maintaining or improving the quality of life and possibly improving survival. **Objectives**: to evaluate the safety and efficacy of breast cryoablation (CRA) as local therapy for patient with metastatic breast cancer. **Methods**: thirty-nine breast lesions, mean size 2,1 (range 1 - 6,7 cm) in twenty-nine consecutive patients, mean age 51 (36-81) with core-needle biopsy-proven breast carcinoma and metastases were included in this study. Twenty-three patients had one lesion, 4 patients two lesions, 1 patient three lesions and 1 patient five lesions. Under local anesthesia and mild conscious sedation, the tumour and surrounding breast tissue were ablated with percutaneous CT-guided CRA. Cryoablation consisted of 2 cycles each of 10 minutes of freezing followed by a 4-min active and 4-min passive thawing phase for each one. Twenty-four patients underwent one CRA session, four patients 2 CRA sessions and one patient underwent 3 CRA sessions. **Results**: all CRA sessions were successfully completed and all breast tumours were ablated. Morbidity consisted in transient and mild ecchymotic changes and post-procedural oedema seen in ten cases. The therapeutic outcomes were evaluated by contrast-enhanced TC or MRI at 2-, 6-, 12-, and 18-month intervals. The absence of tumour enhancement TC or MR image was considered as indicating complete tumour necrosis. During the mean follow-up of 15 months (6- 28 months) 26 patients had shown complete response to the treatment. Only 3 patients out 29 (10%) showed relapse close to the treated lesion. These patients were treated with a second CRA procedure. **Conclusions**: CRA of metastatic breast cancer is a safe and effective method which allows local control of the disease. This method can effectively be used with good local control of the disease in patients who present with metastases at the beginning of the disease.

OR18

RADIOACTIVE IODINE SEED LOCALIZATION IN AXILLA WITH SENTINEL NODE BIOPSY (RISAS): A DUTCH PROSPECTIVE MULTICENTER TRIAL ON AXILLARY STAGING AFTER NEOADJUVANT CHEMOTHERAPY IN NODE POSITIVE BREAST CANCER

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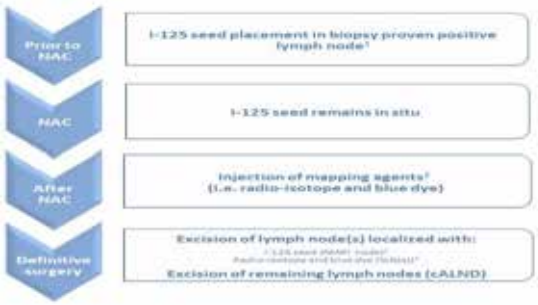
Introduction: As a result of neoadjuvant systemic therapy (NST), at least one out of every 3 patients with initial node positive (cN+) breast cancer converts to axillary pathologic complete response (ax-pCR). In case of ax-pCR, axillary lymph node dissection (ALND), which is the current standard treatment, can be regarded as overtreatment. This urges the need for a less invasive axillary staging method after NST, such as sentinel lymph node biopsy (SLNB) or MARI (Marking Axillary lymph nodes with Radioactive Iodine seeds). Both MARI and SLNB cannot yet, as independent procedures, safely replace the traditional ALND though. By combining them, the accuracy of detecting residual axillary disease may be improved. We therefore developed the RISAS trial to validate the combination of MARI and SLNB (i.e. RISAS procedure) for axillary staging after NST in cN+ breast cancer with the potential to safely replace ALND. **Methods:** In this currently recruiting prospective single arm multicenter validation study, a total of 225 cN+ patients will be needed to test noninferiority of RISAS compared to ALND. The RISAS procedure consists of performing MARI and SLNB, directly followed by completion ALND (Figure 1). All RISAS nodes are compared to ALND specimen lymph nodes. Identification rate, sensitivity, false negative rate and negative predictive value will be determined for RISAS as well as possible concordance between the MARI node and SLNB. **Results:** Up to now, 50 patients are included of whom 14 patients completed NST and underwent the RISAS procedure followed by completion ALND. The projected accrual is expected to be achieved by May 2019. A median of 1.8 lymph nodes were removed with the RISAS procedure (range 1-3). **Conclusion:** We predict that RISAS has the potential to accurately and safely identify ax-pCR after NST in initially cN+ patients. Consequently, it could replace ALND for axillary staging, thereby preventing unnecessary ALND in case of ax-pCR.



OR19

PROSPECTIVE THREE-ARM TRIPLE-BLINDED COMPARATIVE STUDY FOR BREAST CANCER SCREENING IN LOW RESOURCE SETTING COUNTRIES WITH A NONINVASIVE AND LOW-COST TECHNIQUE USING A HANDHELD POINT-OF-CARE MEDICAL DEVICE(IBREASTEXAM)

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PROBLEM STATEMENT: To determine the clinical efficacy of iBreast Exam (iBE) device, a handheld non invasive medical device that could assist allied healthcare workers to perform standardized Clinical Breast Examination in low-resource settings. **METHODS**: 989 healthy women & 20 women attending tertiary Indian hospital with breast-related symptoms were recruited as part of screening program. Each woman was examined by three independent methods, each blinded to the other two: iBE, Clinical Breast Examination (CBE) by an expert clinician and Breast Imaging (mammography or breast ultrasound). Main outcomes measured were sensitivity (SN), specificity (SP), positive predictive value (PPV), negative predictive value (NPV) for iBE and CBE with Breast Imaging tests used as reference standard. RESULTS: Out of 916 enrolled participants, 93 were confirmed by imaging to have at least one breast lesion. Clinical Breast Examination in comparison with imaging detected breast lesions with SN = 65 %, SP = 94 %, PPV = 52 %, NPV = 96 %, and iBreastExam reported SN = 84 %, SP = 94 %, PPV = 60 % and NPV = 98 %. In women below age 40 (314 participants), iBE detected breast lesions with SN = 85 %, SP = 93 %. All malignant lesions were identified by iBE, while one non-palpable malignant lesion was missed by clinician CBE. **CONCLUSION**: The iBE device performed with significantly better sensitivity, by 19 %, than CBE to detect breast lesions while reporting high specificity (94%) and NPV (98%). In younger women population under the age of 40 years, where the prevalence of dense breast is high, iBE demonstrated high-performance characteristics. iBE detected all malignant lesions, while the clinician's CBE missed to detect a non-palpable malignant lesion. iBreastExam can be a promising tool to provide clinically effective and standardized breast examinations in low-resource settings to detect breast lesions at early stages & also be an effective screening tool for younger women with dense breasts.

FRI-P01

ANTI-HORMONAL THERAPY ALONE IN N1 STAGE BREAST CANCER PATIENTS WITH HORMONE RECEPTOR POSITIVE AND HER-2 NEGATIVE

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Problem statement: Hormone receptor positive and HER-2 negative breast cancer prognosis is better than another type. The guidelines recommend chemotherapy in N1 breast cancer patients. However, it has the possibility as over-treatment. **Methods:** This was a retrospective study, if 18,549 patients who were surgically treated for invasive breast cancer at a single center in South Korea, between January 1993 and December 2012. N1 stage breast cancer patients with hormone receptor positive and HER2-nevative breast cancer patients were collected and propensity scoring matching was performed as with anti-hormonal therapy alone group(N=83) and chemotherapy followed anti-hormonal therapy group(N=85). **Results:** In survival analysis 5 years recurrence free survival of endocrine therapy only group and chemotherapy with endocrine therapy group were 96.1% and 94.0%, 10 years recurrence free survival(RFS) were 89.6% and 94.0%, 5 years distant metastasis-free survival(DMFS) of two groups were 97.4% and 94.0%, 10 years were 93.2% and 94.0% respectively. 10 years breast cancer specific survival(BCSS) of two groups were 98.7% and 98.8 %, 10years overall survival(OS) of two groups were 98.7% and 98.8%, respectively. There were no significant differences in RFS (P=.871), DMFS(P=.491), BCSS(p=.569) and OS (P=.731) between two groups. **Conclusion:** Several patients with clinicopathologic features such as hormone receptor positive and HER2 negative are able to avoid chemotherapy even with lymph node metastasis. To confirm this requires more patients and a longer follow-up.

FRI-P02

MALE BREAST CANCER IN AUSTRALIA: COMPLIANCE WITH TREATMENT KEY PERFORMANCE INDICATORS – 99,768 BREAST CANCERS OVER A 10 YEAR PERIOD

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Problem Statement: Tumour characteristics in male early breast cancer (EBC) differ from females. Although treatment guidelines are the same for males and females, studies suggest males are undertreated. We assessed this in Australian men using BreastSurgANZ KPIs. **Methods:** BreastSurgANZ membership requires data be entered into the Breast Quality Audit. We compared tumour features and treatment recommendations in males and females using chi-square test, (significance alpha 0.05). Patients diagnosed 1/10/2006 to 30/09/2016 were included, corresponding with trastuzumab and contemporary chemotherapy availability. **Results:** There were 99,768 EBC episodes, comprising 585 (0.6%) males (544 invasive; 41 DCIS) and 99,183 (99.4%) females (85,596 invasive; 13,525 DCIS; 62 unk).

Table 1 Clinico-pathological features

	Female	**Male**
Mean age (range)	61y (15-102)	68y (25-94)
Bilateral synchronous	3.7%	1%
Histology		
• Ductal	76%	85%
• Lobular	12%	2%
• Other	12%	13%
DCIS	14%	7%
Triple negative	11%	2%
Hormone receptor positive	82%	94%
HER2 positive	13%	7%
Node positive	35%	44%

Table 2 Compliance with KPIs

KPI	**Quality threshold**	**Female % Referred /Total**	**Male % Referred/ Total**	**P value**
Invasive BCS cases referred for radiotherapy	85%	89% 44,107/49,488	51% 23/45	<0.001
Oestrogen positive invasive cases referred for hormonal treatment	85%	86% 60,419/70,456	87% 448/514	0.364
Invasive cases undergoing axillary surgery	90%	95% 80,969/85,596	94% 513/544	0.763
In-situ cases undergoing breast surgery without axillary clearance	90%	74% 5915/7984	57% 3/7	0.385
Post-Mastectomy radiotherapy if tumour >49mm or >3 lymph nodes positive	85%	84% 7,841/9,348	89% 64/72	0.249

Referred for chemotherapy if (a) age <55 & grade >1 & size >20mm or ≤20mm with positive nodes; or (b) age ≤70 & >5mm & HER2 positive OR triple negative.	90%	91% 13,018/14,375	91% 29/32	1.000

Conclusions: Male EBC accounted for only 0.6% of cases over the 10yr period. Invasive lobular cancer, triple negative and HER2+ disease was infrequently seen in men. A higher likelihood of node positive disease, and a higher than expected incidence of DCIS was seen. Apart from BCS referred for radiotherapy, there was no difference in treatment recommendations for males and females indicating that males are not undertreated compared with females.

FRI-P03

SYSTEMIC ADJUVANT TREATMENT RECOMMENDATIONS AND COMPLIANCE IN AUSTRALIAN PATIENTS WITH EARLY BREAST CANCER

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Problem statement: Compliance with systemic adjuvant treatment recommendations in Australia has not been previously reported. Knowledge of current treatment uptake would allow an understanding of the level of compliance with national guidelines and also allow an assessment of the potential role of OncotypeDX in Australia. **Methods**: BreastSurgANZ database was used to review systemic treatment recommendations and compliance in early breast cancer (EBC) patients. We assessed treatment recommendations for patients with the same characteristics as the eligible and recruited population in TAILORx study. **Results:** Between 1/2002 to 12/2016, 99,800 females (102,660 EBC episodes), mean age 60.5yrs (range 18-102) were reviewed.

Table 1 Recommendations by pathological subtype

	Number	Chemotherapy (%) (yes/no/unknown)	Endocrine (%) (yes/no/unknown)	Trastuzumab (%) (yes/no/unknown)
HR+	84,003	41 / 48 / 11	83 / 9 / 8	6 / 9 / 8
Triple negative	10,182	77 / 15 / 8	NA	NA
HER2+	12,571	81 / 13 / 6	52 / 37 / 11	68 / 22 /10

Table 2. Treatment compliance

	Patient refusal	Referred not given
Chemotherapy	1,532 (2.9%)	4,558 (8.5%)
Endocrine	1,306 (1.8%)	1,965 (2.7%)
Trastuzumab	34 (0.4%)	342 (3.8%)

Table 3. Recommendation for patients (1) Meeting TAILORx eligibility criteria, (2) Matching recruited patient population

	Eligible [1]	Recruited [2]
Number	29,335	23,750
Chemotherapy	8,350 (28.5%)	5,760 (24.3%)
Endocrine	25,781 (87.8%)	20,950 (88.2%)

[1]TAILORx Eligibility: 18-75y; ER+ or PR+; 10-50mm (or 5-10mm and LVI/G2-3); LN-; HER2-, [2]TAILORx Recruited: 92% ER+ AND PR+; 94% 30mm Of recruited population, 18,630 were aged 50y, where only 14% were recommended for chemotherapy. **Conclusions:** In this large Australian dataset of EBC pts, chemotherapy was appropriately recommended for the majority of TN and HER2+ and endocrine therapy in HR+ patients. Chemotherapy, endocrine and trastuzumab therapy non-compliance occurred in 3%, but treatment was not given despite referral occurred in up to 8.5%. Exploratory review of patients who matched the TAILORx recruited population showed that only 24% are being recommended for chemotherapy, in contrast to the USA experience. Only 14% of the patients would derive the greatest benefit from OncotypeDX testing (i.e. aged 50yrs), rather than the reported 70% in the trial conclusions.

FRI-P04

PERCUTANEOUS PEDICLE SCREW FIXATION FOLLOWED BY CEMENTOPLASTY: A MINIMALLY INVASIVE TECHNIQUE FOR SPINAL METASTASIS IN BREAST CANCER PATIENT

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Problem statement: the rising life expectancy of breast cancer patients has led to a greater need for treatment of spinal metastases. Fracture or impending fracture of vertebral metastases can be treated with percutaneous minimally invasive approach. The goals of therapy are pain control and functional preservation. We retrospectively evaluated the feasibility and effectiveness of CT-guided percutaneous screw fixation plus cementoplasty (PSFPC) in breast cancer patients with painful vertebral metastases with fractures or to prevent pathological fracture. **Methods:** sixteen women, median age 54 years, with 20 vertebral metastases from breast carcinoma underwent CT–guided PSFPC. The procedure was performed in a single vertebra in 12 patients and in two vertebrae in 4 patients. The vertebral

approach was unilateral with a single screw in nine patients and bilateral with two screws in the remaining 7. Eight patients underwent microwave tumor ablation (MWA) before the osteosynthesis. We analyzed the feasibility and complications of the procedure, the decrease in pain using a visual analogue scale (VAS) and the functional outcome assessed according to the evolution of their walking ability. **Results:** pain relief was observed just one week from the treatment in all patients. VAS score decreased from 7.2 (range, 4- 8.5) to 1.2 (range, 0-4). There were no complications related to infections or incorrect positioning of the screws or leakage of cement. All patients were able to walk within 6 hours after the procedure and have improved their walking capacity at six months. No new vertebral fracture occurred during a median follow-up of 9 months. **Conclusions**: our results suggest that PSFPC is a safe and effective procedure which allows us to stabilize the vertebral fracture and prevent pathological fractures with significant pain relief and good recovery of walking ability.

FRI-P05

PREVALENCE OF OESTROGEN RECEPTOR POSITIVE BREAST CANCER IN OBESITY PATIENTS: A RETROSPECTIVE STUDY

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Problem statement: To establish relationship between obesity and hormone receptor status in local Malaysian women with breast cancer. **Methods:** 274 patients recruited from 2 hospitals and divided in to normal body mass index (BMI) and obese BMI 23 kg/m2.Hormone receptors were quantify in terms of percentage. **Result:** Study showed no statistically significant relationship between obesity and estrogen receptor expression (p0.05). In terms of recurrence,patient in obese Class 2 has low recurrence of 42.3% (p0.05). **Conclusion:** We concluded that small data collection may affect the insignificant result. Nevertheless the campaign and awareness regarding the breast cancer and obesity should be continue in order to reduce the related diseases.

FRI-P06

LVI IS IT MORE WORSE PREDICT OUTCOME THAN WE BELIEVE WE KNOW ABOUT IT, SYSTEMIC REVIEW OF SINGLE INSTITUTE IN SAUDI ARABIA

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Introduction: For long time we believe that LVI is a prediction of worse outcome for Breast Cancer (BC) patients with limited information about it. Here we tried to scoop on the relation between +ve LVI & prediction of developing either Lymphedema or having +ve Extra-capsular extension (ECE). **Methods:** We run a systemic retrospective review for 240 patients with (BC) at Prince Sultan Military medical city (PSMMC) treated between June 2014-till mid July 2018. Who diagnosed with locally breast cancer who underwent surgery (either Lumpectomy or mastectomy +/- systemic chemotherapy and Adjuvant Hypofractionated radiotherapy (HFRT) 42.4Gy/16 fx +/- a boost of 10Gy/4fx. We compare between (BC) patients with +ve LVI Vs -ve LVI in regard of developing Lymphedema or having +ECE. **Results:** Attached a table with patients characteristics (Table1). Range of their age was (22-73 yrs with average 48.33 yrs. With rang of follow up was 32-1514 days with average of 475.75 days. However, in regard to developing a lymphedema we found that for patients with +ve LVI Vs -ve LVI it was 50% Vs 29% correspondingly with *P* value = 0.01. While for having +ve ECE it was for patients with +ve LVI Vs -ve LVI was 34.52% VS 10.83% with *P* value =0.0415. **Conclusion:** our retrospective review strongly shoed that +LVI is a predictor of developing Lymphedma for patients with (BC) as well having +ECE. However, it's retrospective review for that we highly recommend more prospective trials scooping this matter &further evaluating using HFRT with patients with +LVI.

		+LVI	-LVI	Unknown
No of patients		92	123	26
Tis		0	6	
T1		21	44	
T2		53	54	
T3		11	15	
T4		7	5	
Nx		0	2	
N0		18	59	
N1		42	45	
N2		18	7	
N3		14	12	

FRI-P07

METHYLATION STATUS OF MGMT AND MEG3 GENE'S PROMOTERS IN TRIPLE-NEGATIVE BREAST CANCER

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Problem Statement: Triple-negative breast cancer (TNBC) is the most severe subtype of breast cancer, due to unfavorable clinical course and poor prognosis. There is a need to conduct molecular studies that could point to new prognostic factors and help determine appropriate treatment. There are more and more studies showing that not only gene mutations affect breast cancer progression, but also epigenetic changes, such as methylation of suppressors genes. Recent studies showed that *MEG3* (maternally expressed 3) gene encoding long non-coding RNA has an impact on the development of various types of cancers. The aim of this study is to indicated the influence of *MGMT* (O6-methylguanine DNA methyltransferase) and *MEG3* genes promoters methylation on the development of TNBC. **Methods:** In this study 36 TNBC FFPE tissues were included. The methylation status of genes promoters were analysed by methylation-specific PCR. We evaluated the correlations between the methylation status of both analysed genes. **Results:** We found that 69% of patients diagnosed with TNBC show methylation of the *MGMT* gene promoter, while 58% of the patients showed methylation of the *MEG3* gene promoter. There is also positive correlation between *MGMT* and *MEG3* methylation status. In one patient diagnosed with glandular and squamous breast cancer, it was noticed that the *MGMT* and *MEG3* gene promoter status changed from methylated to unmethylated after chemotherapy. **Conclusions**: Methylation of the *MGMT* and *MEG3* is frequent epigenetic aberration in TNBC and may contribute to TNBC development. However, the results should be confirmed in a larger number of patients. **Funding Source**: This study was supported by the University of Rzeszow.

FRI-P08

FEATURE OF THE BREAST LESION CAN BE DECEPTIVE- MIMICKERS OF BREAST MALIGNANCY

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Problem statement: Our aim is to, through pictorial essay of ultrasound imaging, describe challenging appearance of benign breast disorders mimicking carcinoma. It is of utmost importance for radiologists to be aware of these benign entities and their overlapping imaging features with malignant, in order to assist clinicians and breast surgeons to accept benign diagnosis being concordant. **Methods and Results:** This was a retrospective surveillance of biopsy proven benign cases, which were graded BIRADS 4b and above, in our hospital over the last 3 years. Reaching a decision of concordance with benign histopathological diagnosis often was difficult. Several of the cases underwent repeated evaluation by vacuum assisted core biopsy and a few by surgical excision biopsy. Mimickers of malignancy we found, include fibroadenoma, sclerosing adenosis, focal stromal fibrosis, fatty necrosis, lymphocytic mastitis, abscess and granulomatous mastitis. Through the pictorial essay, we describe the cases with their clinical, histopathological and imaging findings; furthermore, we discuss the correlation and provide deeper understanding of these phenomena. **Conclusion:** It is a difficult task evaluation and characterization of described benign entities closely mimicking breast malignancy, by all modalities, particularly by their sonographic features. Image guided core biopsy, vacuum assisted biopsy and seldom used FNAC (fine needle aspiration cytology) play pivotal role in obtaining histological diagnosis. Experience, knowledge and awareness of overlapping benign and malignant features may help to avoid surgical intervention associated with apprehension, pain and anxiety for the patient.

FRI-P09

SHEAR WAVE ULTRASOUND AND HIGH MAMMOGRAPHIC BREAST DENSITY (HMBD); A PILOT STUDY OF BREAST STIFFNESS REDUCTION IN PRE-MENOPAUSAL WOMEN WITH HMBD

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Problem statement: Breast stiffness or elasticity is directly related to mammographic breast density (MBD) and risk of developing breast cancer. The consequence of high tissue stiffness is perturbations in mechano-transduction and compromises in tissue homeostasis. Sustained disruptions can result in changes to the complex interplay between cellular and extra-cellular micro-environments and result in disease initiation and or promotion. For example, inflammatory change manifesting as breast pain is common in women with HMBD and can occur as a result of endogenous or exogenous hormonal effect on breast tissue. We previously have demonstrated that testosterone (T) given to women receiving an adjuvant aromatase inhibitor (Ai) for breast cancer can significantly reverse AI induced inflammatory arthralgia. This is now the basis of a recently completed NCI funded phase III trial at the Mayo Clinic MN (clinicaltrials.gov NCT01573442). A surprise finding of the former trial was a reduction in breast pain and this is now the basis of a larger study using a combination of testosterone and an AI (anastrozole) to reduce HMBD. Thus, we undertook a pilot trial of shear wave ultrasound evaluation of breast elasticity in pre-menopausal women with HMBD receiving a subcutaneous pellet containing T and Ai. **Methods:** Ten pre-menopausal women with HMBD (15.5% MBD as measured by Volpara (i.e. BIRADS D)) received a combination of T (testosterone) 80mg and an AI (anastrozole) 2mg combined in a subcutaneous pellet (inserted in the lower abdominal or gluteal subcutaneous fat). **Primary endpoints: Shear Wave breast elasticity (kPa):** measured in both breasts (at baseline and 6 weeks after pellet insertion) with a Supersonic Aixplorer ®ultrasound probe. **Breast pain** as measured on a 100mm visual analogue scale where 0mm is no pain and 100mm is worst pain, in the 6 weeks prior to the pellet insertion and 6 weeks after the pellet was inserted. **Results: Shear Wave breast elasticity (kPa):** median reduction in breast elasticity 53% (43-89%) **Breast pain:** median reduction in the breast pain 67% (0-100%) **Conclusions:** Shear Wave elastrography with Supersonic Aixplorer® ultrasound is a simple and non-invasive way of calculating breast tissue response to a hormonal therapeutic intervention for HMBD.

FRI-P10

LITERATURE REVIEW AND CASE REPORT OF GRANULAR CELL TUMOUR IN BREAST

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Problem statement: Granular cell tumours (GCTs) are rare soft tissue tumours more commonly in premenopausal females. GCTs predominantly occur in the head and neck areas but can be anywhere in the body and rarely found in the breast. Although majority is benign, clinically and radiologically they can mimic neoplastic breast lesions. **Methods:** We report a case of GCT in the breast and a literature review. An electronic search of 4 databases was conducted-Medline, Cochrane Library, PubMed, Embase. There were no language or publication restrictions. **Results:** A 33-year-old female presents with a five month history of a painful left breast lump. Mammogram and ultrasound confirmed a 16mm lesion at 5 o'clock, 13cm from the nipple. Core biopsy and subsequent wide local excision confirmed a benign granular cell tumour, which was strongly positive to S-100. She had an uneventful recovery and shows no evidence of recurrence at 6 months follow up. Unlike our case, GCT commonly presents as a painless unilateral breast lump more frequently in the upper inner quadrant, along the distribution of the supraclavicular nerve cutaneous territory. Whilst the majority of reported cases are benign, there have been several cases of malignant GCT or the presence multiple concurrent tumours including ductal breast carcinoma. On histopathology, GCTs show strong staining for S-100 protein. Definitive diagnosis and management is wide local excision with clear surgical margins. Unless malignant features are evident on biopsy, sentinel lymph biopsy is not necessary. Several cases have reported local recurrence on follow up. Neoadjuvant or adjuvant therapy is generally not necessary in benign GCTs. **Conclusion:** GCTs are rare breast tumours, majority of which are benign. Clinical and radiological similarities with more common invasive breast malignancy can make diagnosis challenging. Concurrent malignancy needs to be excluded.

FRI-P11

THE IMPACT OF PRE-OPERATIVE MRI IN THE MANAGEMENT OF INVASIVE LOBULAR CARCINOMA OF THE BREAST

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Problem statement: Invasive lobular carcinoma (ILC) of the breast can be challenging to diagnose, and difficult to accurately assess extent of disease. The incidence of ILC is increasing. It makes up approximately 10-15% of breast cancers and is the most commonly diagnosed special subtype of invasive breast cancer. ILC can be mammographically occult in 10-30% of cases, and lesions can therefore be missed on screening. ILC is often diagnosed when larger or at a more advanced stage. It is also more likely to be multifocal, multicentric, or bilateral, than invasive ductal carcinoma. Standard breast imaging can underestimate the extent of disease, which has implications for management planning. MRI and ultrasound are more sensitive than mammography for detecting ILC. Accurate assessment of extent of disease provides more certainty in surgical decision-making. This study investigates the impact of pre-operative MRI in the management of ILC of the breast. **Methods:** A retrospective review was performed, of all cases of invasive lobular carcinoma of the breast diagnosed over an eight-year period (between 2009 and 2016) at a major tertiary referral hospital in Christchurch, New Zealand. The role of pre-operative contrast enhanced MRI was evaluated. MRI findings, and further investigation of any additional suspicious lesions identified on MRI were correlated to determine accuracy. Alteration to management based on these results was reviewed. **Results:** Outcomes of pre-operative MRI scans in ILC were analysed, including correlation with second look ultrasound and biopsies of additional lesions identified in both the ipsilateral and contralateral breast. The number of patients requiring more extensive surgery based on their pre-operative MRI scan and further investigation results was determined, and final pathology results reviewed. **Conclusion: C**onclusions regarding the impact of pre-operative breast MRI in the management of ILC will be made from the above review.

FRI-P12

KEEP CALM, IT`S JUST `MOOBS`

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Problem statement: Gynaecomastia is the enlargement of the male breast with secondary branching of the subareolar ducts and proliferation of the surrounding stroma. Three mammographic patterns of gynaecomastia have been well described: the nodular, fibrous or dendritic and diffuse glandular patterns. Incidental gynaecomastia on CT could be a potential source of unnecessary further breast imaging when radiologists are unfamiliar with its appearances. We aimed to ascertain in our cohort the number of patients who went on to have breast imaging because of incidental CT findings and to determine if the gynaecomastia pattern had an influence on whether they were recalled for further imaging. **Methods:** This project was registered and approved through the hospital research government process as a clinical audit. We obtained the details of male patients who have had an ultrasound of the breast(s) within a year of having had a CT chest between 01/01/2007 and 03/04/2018 from the institutional Picture Archiving System. 55 patients with an imaging diagnosis of gynaecomastia were identified. We looked at the breast imaging requests and the preceding CT reports to determine if the breast imaging had been suggested by the CT reports. If mammograms were available, these were used to group the patients into one of the three described mammographic patterns. Otherwise, their CT images were used. **Results:** We found 9 (16%) out of the 55 patients had further workup with breast imaging eg ultrasound +/-mammogram as a direct result of CT. 5 of these patients had a dendritic pattern, 4 were nodular whilst 1 was diffuse. **Conclusion:** Most of our patients who had breast imaging were either symptomatic or clinically had gynaecomastia. 16% of patients in our study had further breast imaging performed as a result of incidental findings on CT where the report had suggested it. Most of the patients recalled had either a dendritic or nodular pattern suggesting no particular type of gynaecomastia was more likely to lead to additional imaging when found incidentally on CT.

FRI-P13

THE BRILLIANCE OF CONTRAST ENHANCED SPECTRAL MAMMOGRAPHY (CESM)

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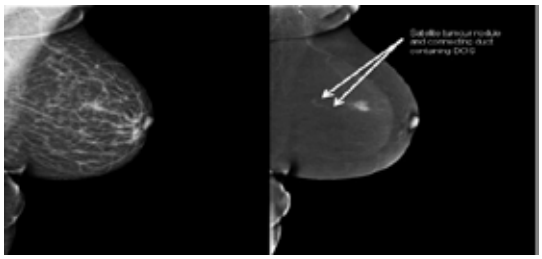
Problem statement: Breast MRI is considered the gold standard in delineating breast cancer extent. Use of this modality is restricted by availability and cost. Contrast Enhanced Spectral Mammography (CESM) may offer higher sensitivity and greater diagnostic accuracy than conventional mammography in diagnosing breast cancer. Breast cancers have a higher avidity to take up contrast than normal tissue. This has enabled us to demonstrate tumour extent comparable to that offered by contrast enhanced breast MRI. **Methods:** From January 2017 until May 2018 we performed 27 studies. Following review of initial mammogram and ultrasound images CESM was requested if it was thought this may add spatial information of clinical usefulness to the referring surgeon. All CESM examinations were performed on a GE Healthcare Senographe Essential mammogram unit with GE Senobright software modifications, which allows for dual-energy CESM acquisition. Ultravist 370 (iopromide, Ultravist 370; Bayer Healthcare, Berlin, Germany) was administered at a dose of 1.5mL/kg body-weight through a 20G cannula in the antecubital fossa contralateral to the breast under review. The contrast medium was instilled by hand-injection and was followed by a bolus chaser of 30mL of saline. Images were acquired following a 2-minute delay, with all images being acquired within 10 minutes following the start of the contrast injection. Subtraction images (SI) were produced by cancelling out the background breast tissue. **Results:** CESM was able to demonstrate both invasive cancer and DCIS, and was of particular usefulness in dense breasts. We were able to identify satellite tumour nodules that had not been appreciated on conventional imaging. Review of that initial imaging or second-look ultrasound was sometimes able to identify these tumour foci that had not readily been appreciated before (Figure 1). On occasion CESM was able to demonstrate that cancers contained within denser breast parenchymal areas were actually quite discrete, allowing for smaller, rather than wider, tumour resections. This afforded greater confidence in planning definitive surgery. **Conclusion:** CESM offers a quick, affordable and readily available alternate to MRI to obtain high resolution, anatomically precise image characterisation of breast cancers and can be readily integrated into a conventional mammographic imaging service.



FRI-P14

COMPARISON OF USEFULNESS OF ULTRASOUND AND MRI FOR DIAGNOSIS OF SILICON BREAST IMPLANT RUPTURE

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Problem statement: Evaluation of silicone breast implant (SBI) inserted for breast reconstruction after mastectomy can be performed using MRI to diagnose the presence or absence of SBI rupture and intracapsular rupture or extracapsular rupture. Although evaluation of rupture is also possible by ultrasound (US), MRI is reported to be the most accurate modality. Meanwhile, MRI has problems such as high cost and long time for examination and then, the usefulness of US evaluation has also been reported. We compared MRI and US on the accuracy of SBI rupture evaluation. **Methods:** Of the 829 SBIs which underwent US screening for rupture evaluation after the insertion of SBI more than 3 years, abnormal findings were found in US and MRI was performed for 43 SBIs.14 of 43 SBIs were removed and we compared image findings and surgical findings of them. Evaluation items of US are separation of capsule and shell, abnormality of silicon gel (SG) internal echo and fluid collection in SG. MRI imaging was performed using fat suppression T2WI and silicon selective image. We evaluated rupture findings based on BI - RADS 2013. **Results:** Removal surgery for 14 SBIs revealed 10 intracapsular rupture, 2 pinhole rupture and 2 non rupture (1 case accompanied by gel bleeding). There were no cases of extracapsular rupture. MRI findings showed 7 subcapsular lines and 4 linguine signs suggesting intracapsular rupture. MRI was able to evaluate rupture in 10 cases except gel bleeding in 1 case (PPV: 91%). Among 11 cases suspected rupture by MRI, US findings showed 10 separation of capsule and shell, 10 echo level elevation of SG. MRI could detect 2 pinhole rupture cases which showed fluid collection inside SBIs, but US detected only 1case. **Conclusion:** MRI showed intracapsular rupture and gel bleeding of SBI more accurately than US. MRI could diagnose rupture to the same extent as US, but detectability of MRI was high for fluid collection in SBIs.

FRI-P15

FEATURES OF IMAGE FINDINGS OF DIGITAL BREAST TOMOSYNTHESIS (DBT) UNDETECTED BREAST CANCER

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Problem statement: A combination of 2D mammography (MMG) and Digital Breast Tomosynthesis (DBT) is reported to markedly increase the rate of detection of breast cancer in comparison to that of 2DMMG alone. However, in clinical cases, we encounter cases that DBT can't depict. It is important to know about its limit to effectively use DBT. We investigated the characteristics of breast cancer difficult to detect by DBT. **Methods:** 604 patients who underwent 2DMMG, DBT and MRI from January 2014 to January 2018 and who were diagnosed with breast cancer based on surgical pathology specimens were retrospectively assessed. The total number of DBTs enrolled was 604 cases, of which 10 cases (1.6%) were not able to detect lesions. We evaluated these DBT negative 10 cases retrospectively. Items for assessment were: age, breast density, presence of invasion, size, shape, location, nuclear grade, subtype, Ki-67. **Results:** All 10 patients were women ranging from 29 to 63 years of age (mean 45.2years). Of the 10 cases, 5 (50%) were non invasive cancer and 5 (50%) were invasive cancer. Of all 5 non invasive cancer, 2D MMG showed heterogeneously dense breast. 5 non invasive cancer included 1 apocrine type, 1 cribriform type, 1 comedo type, 1 solid-papillary type, and 1 LCIS. Size were 9-15mm (mean11.4mm). ALL 5 cases were small circumscribed mass, located (3 central, 2 peripheral), NG1(4), NG2(0), NG3(1), Ki67 3.8-44%. In cases of 5 invasive cancer, 2D MMG showed 3 heterogeneously dense, 2 extremely dense breast. 5 invasive cancer included 3 scirrhous type, 1 solid tubular type, 1 apocrine type. Size were 4-16mm (mean11.8mm). ALL 5 cases were rounded-oval mass, located (3 central,2 peripheral), NG1(2), NG2(1), NG3(2), Ki67 (8.8-72.4% mean), subtype (2 luminal A, 1 luminal B, 1 HER2, 1 TNBC), Ki67 8.8-16%. **Conclusion:** Common findings of 5 invasive cancers undetected by DBT are all dense breast, all rounded-oval mass and located peripherally of the breast. We should pay attention, when these findings overlap, even if there is an invasive cancer, it may not be detected by DBT. The key to depicting the tumor is the presence of fat tissue surrounding the tumor.

FRI-P16

APPROACHING BREAST IMPLANT ASSOCIATED COMPLICATION WITH ULTRASOUND AND CHECKLIST

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Problem Statement: As the number of breast augmentation and reconstruction using breast implants increased gradually during the recent decade, various breast implant related complications and clinical conditions are reported including rarely reported Anaplastic Large-Cell Lymphoma (ALCL) cases. Authors purpose was to study our check list for breast implant evaluation with ultrasound, as it can be important information in diagnosis and treatment for breast implant associated complications. **Method:** Ultrasonographic evaluation was done on total of 540 women with breast implants who visited for a breast check-up during March 2, 2016 to February 28, 2017. Women were evaluated with ultrasound plus the Breast implant related Checklist which was first introduced by the Korea Breast Implant Society (KoBIS). **Result**: Women ranged from 20 to 55 years old (median 38) and 513(95%) had breast augmentation for cosmetic purpose than reconstruction. Median follow-up duration from surgery was 14 months (range 1 months to 204moths). Breast implant inserted for cosmetic purpose were placed in submammary/subfascial (318, 61.9%) or subpectoral level (195, 37.1%). Implant types were saline (42, 7.8%) or silicone (498, 92.2%), implant shape was round (362, 67%) or anatomical (178, 32.9%). One-hundred seventy-two (31.8%) were found with single or multiple breast implant associated complications. Breast implant associated complication in ultrasonographic finding included peri-implant fluid collection (107, 19.8%), capsular thickening (49, 9.1%), folding (55, 10.1%), focal or diffuse detachment (83, 15.3%), rupture sign (76, 14%), hematoma 21(3.8%), malrotation (59, 10.9%), and upside down of implant (31, 5.7%). Late seroma was found in 43(7.9%) patients who had surgery 1 year ago or more, but none of the patients were diagnosed with ALCL with the peri-implant fluid so far. **Conclusion:** Breast augmentation and reconstructions using breast implant are increasing but a useful sonographic evaluation guideline is not suggested for breast implants. Therefore, we suggest a breast implant associated complication check list that can be used for breast ultrasonography for women with breast implants. More studies are in need including the checklist which could help step towards thorough evaluation and diagnosis method for less miss of breast implant complication.

FRI-P17

SQUAMOUS CELL METAPLASIA OF LACTIFEROUS DUCTS IN MALE PATIENTS

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Problem Statement: Squamous cell Metaplasia of lactiferous ducts (SMOLD) is a well-documented pathological process when occurring in women, predominantly middle aged smokers. The disease occurs when keratinising squamous epithelium extends deeply into lactiferous ducts causing obstruction, rupture of ductal material elicits a local inflammatory response, this inflammatory tissue is vulnerable to infection and abscess formation. Typical presentation is with pain, erythema and a subareolar mass. There is however little information in the literature with regards to SMOLD in the male population. We document the presentation and imaging features of SMOLD male patients in our institution. **Methods:** We reviewed the presentation, imaging findings and pathology of male patients presenting to our tertiary level breast department with SMOLD. **Results:** We identified two male patients presenting with SMOLD, one of whom demonstrated bilateral disease. We outline the symptoms, imaging

features and pathological appearances of SMOLD in the male patient. **Conclusion:** The presentation, imaging and pathologic features of SMOLD are similar to the female presentation in males, these patients both had a background of gynaecomastia. Though SMOLD in males is a relatively uncommon occurrence, clinical staff working in the breast field should be aware of this potential presentation and its imaging and diagnostic work-up.

FRI-P18

WHICH IS THE BETTER METHOD TO DETECT ABNORMALITIES BY VISUAL ESTIMATE OR VOLPARA FOR WOMEN WITH DENSE BREAST?

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Problem statement: Approximately 80% of Japanese women have the dense breast tissue. Problems of the dense breast were pointed out to overlook the abnormal findings in the mammographic image (MMG). Women with dense breasts are recommended to receive the additional examination. Therefore, the precise measurement of breast density is a very important. Breast density was categorized to four types by BI-RADS: a. fatty, b. scattered, c. heterogeneous density, d. extremely density. The dense breast was defined as integrated c and d. And Non-dense breast was integrated a. with b. Conventional visual estimate of the breast density was reported that it lacks to look objectively. Recently Volpara software such as 3D automatic density analysis device what was marketed around the world has measured the breast density with accurate and reproducibility. We have been studying the breast density measurement retrospectively. **Methods:** The 243 primary breast cancer cases in 2017 and the 833 screening mammography cases have conducted to measure the breast density by visually or Volpara. The identification rates of the abnormal findings were considered by using BI-RADS and the Japanese radiological society mammography guidelines. Absolute dense volume was 0-4.7%;a, 4.8-7.9%;b, 8.0-15.0%;c, ≧15.1; d in volpara. **Results:** In the screening mammography case, the correlation rate of the breast density was very low (cohen's kappa coefficient κ= 0.237) between visual estimate and Volpara. The ratio of dense breast in the breast cancer case was 73.5% by visual estimate and was 88% by Volpara. It has turned out the tendency that the breast density category by visual estimate was judged lower in comparison with Volpara. The overlooking rate of the abnormalities in the dense breast on MMG did not recognize significant difference (p=N.S.) between 53/214(24.8%) by visual estimate and 49/174(27.4%) using Vplpara. In case of Non-dense breast, the overlooking rate was not also significant difference (p=N.S.) between 6/64(9.7%) by visually and 2/29(6.9%) by Volpara. (Conclusion) Consequently. This study suggested that the judgment of breast density by visually might have not mistaken the disadvantage of screening mammography in spite of low rate correlation with visually and Volpara.

FRI-P19

FALSE NEGATIVE ON COMPUTER-AIDED DETECTION APPLICATION IN PREOPERATIVE AUTOMATED BREAST ULTRASOUND OF BREAST CANCER PATIENTS

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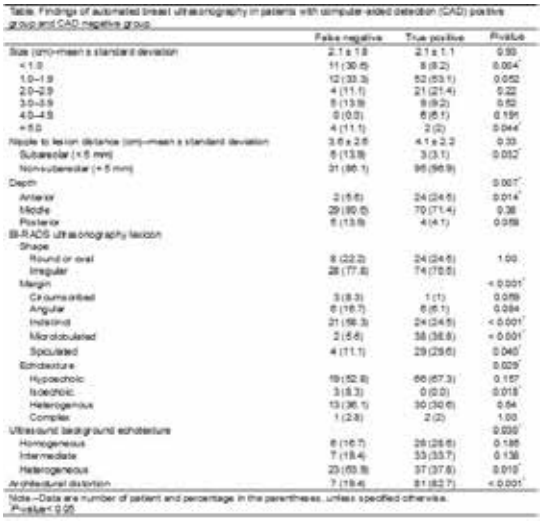
Problem statement: Computer-aided detection (CAD) applied to automated breast ultrasound (ABUS) can assist radiologists detecting breast cancer. It is crucial to understand the imaging features of CAD application-missed breast cancers for the accurate diagnosis of breast cancer in ABUS. **Purpose**: To analyze the characteristics of ultrasonographic, mammographic, and MRI findings of breast cancers that CAD application missed in ABUS. **Materials and Methods:** Total 124 consecutive breast cancer patients (age in mean ± standard deviation, 52.4 ± 10.7 years) who underwent preoperative ABUS were included in our study. Imaging features of mammography, ABUS, and breast MRI as well as pathology results were assessed. Univariable analyses were performed to identify factors associated with missed breast cancer. Multivariable regression analysis was performed using variables which showed statistical significance in univariable analyses. **Results:** The CAD application missed breast cancers in 21% (36/124) of our included patients. Missed breast cancers had higher frequency of ductal carcinoma in situ in pathology and following imaging features in ultrasound: size 1 cm, distance to nipple 5 mm, indistinct margin, and heterogeneous background tissue composition. None of the variables assessed in mammography or MRI was associated with missed breast cancer. In the multivariable regression analysis, ductal carcinoma in situ in pathology, size 1 cm, indistinct margin, and heterogeneous background tissue composition were associated with missed breast cancer.



Conclusion: Breast cancers missed by ABUS CAD application tend to have size 1 cm, indistinct margin, and heterogeneous background tissue composition in ABUS.

FRI-P20

IMPACT OF PRE-OPERATIVE BREAST MRI ON BREAST CANCER TREATMENT PLANNING

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Aim: The use of breast MRI for pre-operative treatment planning remains controversial. MRI can lead to further intervention, with subsequent changes of the surgical planning. These extra processes may cause a delay in the treatment of breast cancer. This study evaluated the impact of breast MRI on surgical planning and treatment of breast cancers in a district general hospital. **Methods:** This retrospective audit was carried out in the Peterborough Breast Unit, Peterborough City Hospital, UK. All patients diagnosed between January 2016 and December 2017 were included. Data were collected from the cancer and radiology registries. **Result:** There were 798 new breast cancers diagnosed in this 24 month study period. Of these, 119 (14.9%) patients required pre-operative MRI. Mean age of patients was 55 (33-79) years. Indications for performing MRI were: dense breast tissue/difficulty in identifying primary malignancy in mammogram (32.7%), to assess the exact size (30.2%), lobular carcinoma contemplating breast conserving surgery (24.0%), and multi-centric cancers (8.4%). One third (119) of the patients who had MRI were recalled for further investigations, with 10% of these patients requiring MRI guided biopsies. Additional malignancies were found in 40.0% of the recalls. Pre-operative MRI changed the treatment plan in 37.0% (45) of these cases; due to either finding a new cancer or realizing a much larger cancer than primary imaging. 9.2% of patients required contralateral surgeries. Median time from initial presentation to treatment was 44.5 days. **Conclusion:** Pre-operative MRI is a useful adjunct in diagnosing new breast cancer. Without MRI, further malignancies would have been missed in this selected group of patients. There will be a change of treatment plan in up to 37.0% of patients when pre-operative MRI was deemed necessary. There will also be a delay in diagnosis and starting treatment when pre-operative MRI was performed. Clear indications and local guidelines to determine the need of pre-operative breast MRI should be established.

FRI-P21

THE BREAST CANCER RELATED-RISKS IN WOMEN WITH DENSE BREAST TISSUE IS CLARIFIED BY USING VOLPARA™

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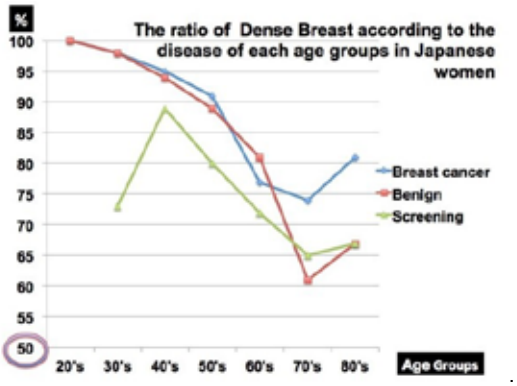
Problem Statement: Mammography (MMG) is thought to have two major risks in women with dense breast tissue. One risk is that women with dense breast tissue are at a higher risk of breast cancer compared to other women with non-dense breast tissue. In addition, abnormal findings are more likely to be over looked on mammograms (false-negative) in women with dense breast tissue. We have conducted to ensure the breast density of the previously statement by using VolparaTM volumetric density analysis. **Methods:** The breast density of 2002 cases (breast cancer 521cases, screening 969 cases, benign disease 512 cases) were measured by Volpara software in Showa University Hospital. The feature of Volpara is known as a Fully automated computer algorithm and images are processed in a high-throughput manner, producing an objective measurement of breast density each time. Output images were classified to the four category: a(fatty), b(scattered), c(heterogeneously dense), d(extremely dense) defined by BI-RADS. We have retrospectively studied breast density with these cases respectively by Volpara. **Results:** The ratio with polygonal line graph (Figure) of dense breast cancer cases showed the high significant differences (p=0.0374) compared to the screening cases of the breast cancer. The density of benign disease has also revealed the high ratio of dense breast than we thought. Moreover, the clinico-pathological characteristics of the breast cancer cases that we couldn't identify the abnormal findings masked cause of highly breast density were found some features. The over-looking rates of abnormalities due to high breast density were approximately 23%, and most of those were ≦T1, ≦20% of Ki67, ER(+). (Conclusion) the results were interesting because not only the breast cancer cases but also the benign disease were significant high rates of dense breast than screening cases. We have estimated that Dense Breast is also a high risk of benign disease as well as breast cancer. Furthermore, the overlooking factors masked due to dense breast were of tumor size, positive of Estrogen receptor and low index rate of Ki67. We'd like to show the availability of Volpara software and to present the future perspectives



FRI-P22

DIAGNOSTIC VALIDITY OF SURGEON-PERFORMED BREAST ULTRASOUND FOR FEMALES WITH PALPABLE BREAST MASSES

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Problem Statement: What is the Diagnostic Validity of a Surgeon-Performed Breast Ultrasound in distinguishing benign from malignant breast masses in a large but low resource institution? **Methodology:** This is a retrospective cross sectional study of breast ultrasound results performed by surgical oncology subspecialty residents among female patients with palpable breast mass without prior histopathological diagnosis in the University of the Philippines-Philippine General Hospital (UP-PGH) Breast Care Center. Records of patients who were seen at the UP-PGH Breast Care Center with a palpable breast mass of 2cm or less without overt signs of malignancy and who upon consult have no prior biopsy were reviewed and subsequently histopathology

reports were noted and later on compared to the clinical impression made by the surgical oncology residents in the breast ultrasound report. **Results:** Breast ultrasound records of eighty (80) patients were reviewed and compared to the histopathology reports. All patients were female (mean age=47.6), who presented with a palpable breast mass without any signs of skin changes or lymph nodes on the time of first consult. 37 (46.2%) breast masses were correctly classified to be benign by ultrasound and histopathology while 32 (40%) breast masses were correctly classified as malignant in ultrasonography and histopathology. The overall accuracy of a surgeon-performed breast ultrasound is 86.25%, sensitivity of 91.43%, specificity of 82.22%, PPV of 80% and NPV of 92.5%. Indistinct borders, heterogeneous and deeper than wide AP ratio are sonographic features associated with malignancy. **Conclusion:** This study showed that the sonographic features most predictive of malignancy are indistinct margins, possessing a posterior enhancement with unilateral shadowing, heterogeneous appearance and a deeper than wide AP ratio. Moreover, a surgeon-performed ultrasound for palpable breast mass is reliable with a relatively good accuracy rate. Breast ultrasound performed by the surgeon can be utilized and be of help in the management of patients with palpable breast masses, especially in high volume centers wherein expediting diagnostic and laboratory results is a challenge.

FRI-P23

THE DIFFERENTIAL DIAGNOSIS OF THE BREAST FINDINGS USING AUTOMATED BREAST VOLUME SCANNER (ABVS) AND ADVANCED ELASTOGRAPHY

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Problem statement: The moment of detection of early breast ultrasound finding, its initial interpretation and classification are very important for further assessment. It is important to detect elements of ultrasound image that help in differentiating the nature of such findings and avoiding their misinterpretations. **Methods:** In our group practice, ABVS and advanced elastography, shear wave elastography (SWE) using Virtual Touch Imaging Quantification (VTIQ), are performed by two physicians at one location, for different indications and also on asymptomatic women on their request, using Acuson S2000 HELX ABVS. With over seven years of experience and over 2500 ABVS investigations, including women between 15 -82 years old, we selected a few representative cases with multiple benign changes, malignant looking benign changes and typical malignant changes, according the ultrasonographic features of ABVS to the ACR BI-RADS US classification system, analyzed in parallel. **Results:** There were various findings, from large tumors to small malignant tumors (4mm diameter), including two cases of mucinous cancers, with completely benign appearance in conventional handheld ultrasonography at the moment of detection, but with retractile image on coronal view during ABVS, linked with elastography changes, confirmed by biopsy. Shear wave elastography provides a quantitative approach; velocity results of over 2m/s are considered as suspicious, but the difference between lesion velocity and adjacent healthy tissue is the most important. False negatives may occur in soft breast cancers (mucinous carcinoma or inflammatory carcinoma) and false positives may be seen in old fibroadenomas in dense breast or scars. Benign lesions associated with microcalcifications are softer than malignant lesions with microcalcifications. **Conclusion:** Misinterpretations are risk always present in breast ultrasound, but ABVS and advanced elastography are the most effective methods for early detecting breast lesions, without irradiation, painless, at any age, during any physiological statement. Size of pure ductal carcinoma in situ on ABVS showed a higher correlation coefficient with histopatology than the other methods. The advanced elastography is a useful complementary tool for undetermined breast lesions as BI-RADS 4a or BI-RADS 3. **Disclosure of Interest:** Mihaela Vancu has been an invited speaker in symposiums organised by Siemens.

FRI-P24

INFLUENCE OF PRE-OPERATIVE BREAST CANCER LOCALIZATION TECHNIQUES ON RATES OF SENTINEL LYMPH NODE VISUALIZATION WITH PREOPERATIVE LYMPHOSCINTIGRAPHY

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Problem statement: Sentinel lymph node (SLN) localization and biopsy are now the “standard of care” for staging the axillary lymph nodes in breast cancer patients. The use of pre-operative image-guided lesion localization for impalpable breast cancer may interfere with lymphatic drainage and cause delay and/or reduced visualization of SLN`s on pre-operative lymphoscintigraphy. The goal of this audit was to compare rates of SLN visualization in patients undergoing preoperative breast cancer localization with either Iodine 125 seeds (Radioguided occult lesion localization using Iodine 125 seeds, ROLLIS) or hookwire (HW) and those with palpable lesions where no localization (NL) was required. **Methods:** We reviewed the records of 482 patients, who underwent pre-operative lymphoscintigraphy with HW, ROLLIS or NL, at three major tertiary hospitals from January 2013 to December 2017. 99mTc antimony trisulfide colloid, with the filtered size of around 20mm, is injected in the intradermal peri-areolar skin of the tumor quadrant. A lymphoscintigram (LSG) image is performed between 10 - 60 minutes or longer post-injection. Similar techniques for lymphscintigraphy were used across various sites. The rate of SLN visualization in the three groups was analyzed using 95% confidence intervals (CI). Time to node visualization was compared using a non-parametric test for differences in time between groups. **Results:** Very high overall rates of SLN visualization on pre-operative lymphoscintigraphy were noted in all three groups. In the NL group, the rate of visualisation was 99% (95% CI: 94.7%, 99.8%) whereas the rate of visualisation in the HW group was 98.6% (95%CI: 95.9%, 99.7%) and in the ROLLIS group, 98.8% (95%CI: 95.8%, 99.9%). For time to node visualization, a significant difference was found between the NL versus HW group ($p = 0.0015$) and NL verses ROLLIS group ($p = 0.00011$); however, there is no significant difference detected between the HW and ROLLIS groups ($p = 0.16$). **Conclusion:** SLN visualization rates on pre-operative lymphoscintigraphy were high in all groups, and use of breast lesion localization techniques had little effect. The study, however, demonstrates increased

rates of delayed imaging before the SLN becomes visualized in the groups using localization techniques compared to no localization lymphoscintigraphy patients.

FRI-P25

PREPECTORAL IMMEDIATE IMPLANT-BASED RECONSTRUCTION USING BRAXON - AN ACELLULAR DERMAL MATRIX – NATIONAL AUDIT FROM THE UNITED KINGDOM

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Problem statement: Implant based reconstruction is the most common method of reconstruction in the United Kingdom (UK) for women having a mastectomy for breast cancer or as a risk reducing procedure. Prepectoral reconstruction with full implant coverage using an acellular dermal matrix (ADM) – BRAXON - is a relatively new technique. Prepectoral reconstruction has the advantages of a better aesthetic outcome, less postoperative pain, quicker return to normal activities and no postoperative problems with animation. We report on the outcomes of prepectoral immediate breast reconstruction (IBR) using Braxon® ADM from a National audit. **Methods:** A retrospective multi-centre audit of all direct-to-implant reconstructions using Braxon® in the United Kingdom was carried out . The demographic details, treatment details, short-term and long-term outcomes were evaluated. Factors affecting complication rates were analysed. **Results:** Data from 406 Braxon reconstructions in 324 patients across 20 centres in the UK were collated. Mean age of the cohort was 50.48 (SD – 11.11, range – 20-82) years with a mean BMI of 26.05 (SD – 4.87, range – 18-42) kg/m2. Demographic and treatment characteristics are given in Table 1. The mean follow-up period was 10.94 months (0.3 to 34.8 months). The overall complication rate was 32% with a readmission rate of 16% and an implant loss rate of 9%. Of the factors evaluated for their effect on complication rates, patient age (p = 0.005), therapeutic mastectomy (p = 0.001), specimen weight (p < 0.005) and axillary nodal clearance (p = 0.006) were significantly associated with higher complication rate on univariate analysis. **Conclusion:** Implant-based prepectoral breast reconstruction with Braxon® has satisfactory short-term and long-term operative outcomes, comparable to the National Mastectomy Audit data from the United Kingdom. Patient-reported outcomes, aesthetic outcomes and post operative pain need to be evaluated. Further studies with larger numbers of patients and longer follow-up have been planned.

Table 1. Patient demographics and treatment details

Characteristic	Number (Percentage)
Number of patients	324
Number of reconstructions	406
Mean Age (years)	50.48
Mean Body Mass Index (kg/m2)	26.05
Smoker / Ex-smoker	30
Indication for surgery	
Therapeutic mastectomy	
Prophylactic mastectomy	241 (74.3)
	83 (25.6)
Neo-adjuvant chemotherapy	55 (16.9)
Previous radiation therapy	17 (5.24)
Adjuvant radiation therapy	55 (16.9)
Adjuvant chemotherapy	55 (16.9)
Type of mastectomy	
Skin-sparing mastectomy	
Nipple-sparing mastectomy	
Skin-reducing mastectomy	143 (44.13)
	143 (44.13)
	37 (11.41)
Management of axilla	
Sentinel node biopsy	
Axillary nodal clearance	
No axillary surgery	207 (63.8)
	54 (16.6)
	63 (19.4)
Mean specimen weight (grams)	433.24
Mean implant volume (cc)	374.5
Complications	105 (32)
Implant loss	36/406 (8.87)

FRI-P26

RIBOCICLIB + FULVESTRANT IN POSTMENOPAUSAL WOMEN WITH HORMONE RECEPTOR-POSITIVE (HR+), HER2-NEGATIVE (HER2–) ADVANCED BREAST CANCER (ABC): RESULTS FROM MONALEESA-3

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Problem statement: First-line ribociclib + letrozole significantly prolonged progression-free survival (PFS) in postmenopausal women with HR+, HER2– ABC. Here we report results from MONALEESA-3 (NCT02422615), a Phase III randomized, double-blind, placebo-controlled study of ribociclib + fulvestrant in patients with HR+, HER2− ABC who received no or up to 1 line of prior endocrine therapy (ET) for ABC. **Methods:** Postmenopausal women with HR+, HER2– ABC (N=726) were randomized 2:1 to ribociclib (600 mg/day; 3-weeks-on/1-week-off) + fulvestrant (500 mg) or placebo + fulvestrant. Primary objective: investigator-assessed PFS. Secondary objectives included overall survival, overall response rate (ORR), clinical benefit rate (CBR), and safety. **Results:** Baseline patient characteristics were balanced between arms. Median duration from randomization to data cut-off: 20.4 months. The primary objective was met: PFS was significantly improved in the ribociclib arm vs the placebo arm (hazard ratio: 0.593; 95% confidence interval [CI]:

0.480–0.732; p=4.10×10–7); median PFS: 20.5 months (95% CI: 18.5–23.5) vs 12.8 months (95% CI: 10.9–16.3). Blinded independent review committee data supported primary efficacy results. Consistent PFS benefit was observed in patients with no (hazard ratio: 0.577; 95% CI: 0.415–0.802) and up to 1 line of prior ET for ABC (hazard ratio: 0.565; 95% CI: 0.428–0.744). In patients with measurable disease at baseline, ORR was 41% vs 29% (ribociclib vs placebo arm; p=0.003); CBR was 69% vs 60% (p=0.015). Common all-grade (G) adverse events (AEs; ≥30% of patients; ribociclib vs placebo arm) were neutropenia (70% vs 2%), nausea (45% vs 28%), and fatigue (31% vs 33%). In the ribociclib vs placebo arms, G3/4 neutropenia occurred in 47%/7% vs 0%/0% of patients, G3/4 increased alanine aminotransferase in 7%/2% vs 1%/0%, and G3/4 increased aspartate aminotransferase in 5%/1% vs 1%/0%. Post-baseline Fridericia's corrected QT interval 480 ms (ribociclib vs placebo arm) occurred in 6% vs 3% of patients. **Conclusion:** Ribociclib + fulvestrant vs placebo + fulvestrant significantly prolonged PFS and demonstrated a manageable safety profile in postmenopausal patients with HR+, HER2– ABC who received no or up to 1 line of prior ET for advanced disease. Ribociclib + fulvestrant is, therefore, an effective treatment option for this patient population. **Disclosure:** Novartis-funded study.

FRI-P27

SINGLE CENTER STUDY IN THE PHILIPPINES ON ERIBULIN MESYLATE IN METASTATIC BREAST CANCER FROM 2013-2016

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Problem statement: There is no standard sequence in giving treatment for metastatic breast cancer. Eribulin mesylate has been approved for heavily pretreated patients in the second line setting. **Method:** Case series from an academic medical center in the Philippines. Included in the study were all metastatic breast cancer patients given eribulin in both out-patient and in-patient services in St. Luke's Medical Center Quezon City from 2013-2016.**Results:** Thirty-four patients were given eribulin from January 2013- December 2017 in our institution for Metastatic Breast Cancer. Median age was 59.1 (37-84). Hormone receptor status were mostly: triple negative 12(35.29%) and ER(+) PR (+) Her2 (-) with 9 (26.47%). Most Â 24(70.59%) had received prior one line of treatment while 6 (17.64%) had received prior two lines of treatment. There were 3 out of 34 patients who had ER(+) PR (+) Her2 (-) subtype, one patient had 2 months response while two patients had 3 months response to Eribulin. Â Hormone receptor subtype ER (+) PR(+) Her2 (+) had 3/34 patients which response to eribulin in 2, 3, 3 months while triple negative subtype, had the most number of patient 12/34 had one patient with 5 and 12 Â months each response, two patients with 0.5, 3 and 4 months each response, four patients with 2 months response, and four patients with 2 months response each with eribulin. Common adverse events to eribulin were neutropenia 17(50%) and fatigue 15(44.11%). Reasons for discontinuation of Eribulin were due either to adverse events 7(25.92%) or disease progression 24 (70.59%). **Conclusion:** Eribulin Mesylate in our institution was used mostly as a second line setting and was used not only in triple negative breast cancer but as well as other breast subtypes as well. Most common metastatic site were lung and liver. Most patients had stable disease. One patient had achieved complete response when eribulin was used as Â second line metastatic setting. Most common cause of discontinuation were due to progressive disease, while only modest had discontinuation due to adverse effects.

FRI-P28

OPTIMA: A PROSPECTIVE RANDOMISED TRIAL TO VALIDATE THE CLINICAL UTILITY AND COST-EFFECTIVENESS OF GENE EXPRESSION TEST-GUIDED CHEMOTHERAPY DECISIONS IN HIGH CLINICAL RISK EARLY BREAST CANCER

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Problem statement: Multi-parameter tumour gene expression assays (MPA's) are widely used to estimate individual patient risk and to guide chemotherapy use in hormone-sensitive, HER2-negative early breast cancer- Evidence for MPA use in node-positive breast cancer is limited- The TAILORx trial supports MPA use for node-negative disease. OPTIMA (Optimal Personalised Treatment of early breast cancer using Multi-parameter Analysis, ISRCTN42400492) aims to validate MPAs as predictors of chemotherapy sensitivity in a largely node-positive population where prospective RCT evidence is lacking. **Methods:** OPTIMA is a partially blinded multi-center RCT with an adaptive two-stage design. The main eligibility criteria are women and men age 40 or older with resected ER-positive, HER2-negative invasive breast cancer and up to 9 involved axillary lymph nodes. Randomisation is to standard management (chemotherapy and endocrine therapy) or to MPA-directed treatment using the Prosigna (PAM50) test. Those with a tumour Prosigna Score 60 receive standard management whilst those with a low score (≤60) are treated with endocrine therapy alone. Endocrine therapy for pre-menopausal women includes ovarian suppression- The co-primary outcomes are: (1) Invasive Disease Free Survival (IDFS) and (2) cost-effectiveness of test-directed treatment. Secondary outcomes include IDFS in patients with low-score tumours and quality of life. Tumour blocks will be banked to allow evaluation of additional MPA technologies. Recruitment of 4500 patients over 5 years will permit demonstration of 3% non-inferiority of test-directed treatment, assuming 5-year IDFS of 85% with standard management, equivalent to a HR of 1.22. Inclusion of patients from the feasibility study will increase the power to test for non-inferiority. **Results:** The OPTIMA main trial opened in January 2017. Overall recruitment (including the feasibility study) will reach 1000 in August 2018. Recruitment in Norway has commenced in July 2018.

Additional collaborations are welcome. **Conclusion:** OPTIMA is one of two large scale prospective trials validating the use of test- guided chemotherapy decisions in node-positive early breast cancer. It is expected to have a global impact on breast cancer treatment. Experience from the preliminary study and close engagement with centres will aid trial success.
Funding: OPTIMA is funded by the UK NIHR HTA Programme (10/34/501).

FRI-P29

TUMOR MICROENVIRONMENT AND ITS PHARMACOLOGICAL MODULATION IN A BREAST CANCER MODEL - PARALLELS TO SKIN WOUND HEALING.

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Problem statement: Breast cancer is the second most frequently diagnosed cancer and the leading cause of death among woman in developed countries. Currently, it is suggested that the inhibition of biological pathways that are associated with the tumor microenvironment may be critical to the treatment of several cancers. In present study, we define key signaling molecules involved in the formation of the tumor microenvironment. Additional attention will also be given to show whether targeted modulation of these regulators promote wound healing. **Methods**: Whole-genome transcriptome profiling was performed in cancer associated fibroblasts isolated from different tumors (including breast cancer) and clinical samples of breast cancer. Furthermore, the effect of cancer associated fibroblasts on the differentiation status of epithelial cells was also realized using in vitro techniques. **Results:** Whole-genome transcriptome profiling of *in vitro* experiments and clinical samples revealed that for example interleukins (IL)-6, IL-8, chemokine CXCL-1, galectin-1, vascular ednothelial growth factor, and selected proteins of the extracellular matrix (e.g. fibronectin) do have similar regulation during wound healing and tumor growth. Furthermore, these molecules also significantly modulate the differentiation status of epithelial cells in vitro and thus are potent modulators of wound healing. **Conclusion:** Previously published and here obtained data demonstrate remarkable similarities between the tumor and wound microenvironments. In particular, components of ECM, growth factors, cytokines/chemokines, and galectins are potent modulators of cancer growth and spreading. Therefore, specific manipulations of cancer stroma can have important therapeutic consequences. Moreover, better understanding of cancer cell-stroma interaction can help to improve wound repair. The present study was supported in part by the Agency for Science and Research (under the contract Nos. APVV-16-0446, APVV-16-0207 and APVV-14-0731).

FRI-P30

EXPLORING IN VITRO ANDROGEN BIOASSAYS AS A CLINICAL TOOLFOR BREAST CANCER

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Problem statement: Menopause is a high-risk factor for estrogen receptor positive (ER+) breast cancer. Postmenopausal women with ER+ breast cancer are placed on aromatase inhibitor treatment (AIT) as adjuvant therapy. Aromatase inhibitors prevent the peripheral conversion of androgens into estrogens, however, this low estrogen environment may raise androgen levels. High concentrations of androgens associate with an increased risk of breast cancer, however little is known about underlying mechanisms. While analytical chemistry techniques measure the concentration of known androgens, net androgenicity of breast cancer patient serum may provide a more informative assessment of breast cancer risk since known and unknown androgens can be measured. Before such studies can be conducted, androgen receptor (AR) bioassays need to be validated as a tool to measure serum bioactivity. The aim of this study was to evaluate a yeast cell- and human embryonic kidney (HEK293) cell AR bioassay for the reliable measurement of serum AR bioactivity. **Methods:** AR bioassays comprise a cell stably co-transfected with an AR expression plasmid and an androgen sensitive reporter plasmid hosted in yeast or HEK293 cell lines. Serum contains proteins such as albumin and steroid hormone binding globulin, which bind 98% of androgens and upon heat denaturation of the proteins, bound androgens are released. **Results:** In the HEK293-AR bioassay, heating testosterone-spiked serum consistently increased AR bioactivity by up to 137%, whereas the yeast-AR bioassay produced inconsistent results. Expected sex differences in AR bioactivity of male and female serum were most pronounced in the HEK293-AR bioassay (average of 73,000 units in male serum versus. **Conclusion:** Taken together, these results show that the HEK293-AR bioassay reliably outperforms the yeast-AR bioassay (current standard) for measuring serum AR bioactivity and assay performance is further improved by heating serum. This study provides a platform for future endeavours to measure serum AR bioactivity in the serum, which could identify individuals at risk of ER+ breast cancer relapse during AIT.

FRI-P31

PATHOLOGIC OUTCOMES OF HER2 POSITIVE NON METASTATIC BREAST CANCER PATIENTS TREATED WITH NEOADJUVANT DUAL ANTI HER2 THERAPY AND TAXANE AT SYDNEY ADVENTIST HOSPITAL (SAH)

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Problem statement: Neoadjuvant pertuzumab, trastuzumab and taxane therapy (triple therapy), in patients with non-metastatic HER2 positive breast cancer, is being utilised more frequently. Gianni et al

(2012) published the first randomised trial demonstrating that patients given pertuzumab, trastuzumab plus docetaxel over 12 weeks (Neosphere) had a significantly improved primary breast pathological complete response (pCR) rate of 46% (invasive disease) compared with those given trastuzumab plus docetaxel (29%). Despite these results, pertuzumab is currently not funded by the Pharmaceutical Benefits Scheme (PBS) in Australia for neoadjuvant treatment of HER2 positive non metastatic breast cancer, with use being partly self funded, on a compassionate access program. We evaluated the clinical and pathological response rates at the time of surgery in patients who received triple therapy at SAH. **Methods:** This is a retrospective case series of all patients treated with the neoadjuvant triple therapy protocol at our institution and who have had definitive surgery. Sixteen female patients were included in the study. Demographic data, size, grade and receptor status prior to neoadjuvant treatment, pCR rates and adverse effects were analysed. **Results:** The median age was 51.5 (range: 35-78) with a median pre neoadjuvant radiological size of 28mm (range: 11-81mm). 75% had grade 3 disease, whilst 25% had grade 2. 63% of patients achieved pCR in the breast for invasive disease, and 40% achieved pCR in the breast for both invasive and in-situ disease. 44% of patients had biopsy proven N1 disease pre-treatment, of which 86% of the N1 group demonstrated pCR in the axilla. 60% of the pCR group had ER% 10% compared to 33% in the non-pCR group. 70% of the pCR group had PR% 10% compared to 50% in the non-pCR group. **Conclusion:** This is the first reported Australian experience using neoadjuvant triple therapy for HER2 positive non metastatic breast cancer. We have demonstrated pCR rates that compared favourably with the Neosphere trial (63% vs 46%), Larger collaborative data sets are required to evaluate feasibility, toxicity, correlation of pCR with survival outcomes and factors to better select patients for this therapy. Funding models need to be considered. **Disclosure of Interest:** None.

FRI-P32

DESIGN OF PERSIA: PERTUZUMAB STUDY FOR HER2-POSITIVE NON-METASTATIC BREAST CANCER IN THE NEOADJUVANT SETTING IN AUSTRALIA

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Problem statement: The addition of pertuzumab to trastuzumab in the neoadjuvant setting for patients with HER2+ breast cancer results in higher rates of pathological complete response (pCR)1 although it is not yet known if this translates into improved survival outcomes. Pertuzumab was approved in Australia (May 2016) by Therapeutic Goods Administration (TGA), in combination with trastuzumab and chemotherapy for the neoadjuvant treatment of locally advanced and inflammatory HER2+ breast cancer. **Methods:** PeRSIA is a secondary data use non-interventional study of Australian patients initiating or considering pertuzumab treatment in the neoadjuvant setting for non-metastatic HER2+ breast cancer. The primary objective of the study is to capture real world data on the safety and effectiveness of pertuzumab when added to trastuzumab in the neoadjuvant setting. Clinicians who prescribe TGA approved neoadjuvant pertuzumab through a Roche-supported cost share access program (http://www.rocheaccessprograms.com.au) are invited to enroll their patients in the study. Patient and tumour characteristics, treatment details (including surgery, chemotherapy, HER2 targeted therapy and radiation therapy), safety data, pathological response and early recurrence data will be captured over an 18-month period. The study also aims to explore the reasons why neoadjuvant pertuzumab is not initiated in a small, comparable patient cohort (n=25). The co-primary endpoints of the study are the incidence of adverse events related to pertuzumab, breast pathological complete response rate (pCR) and total pCR. Secondary objectives include rates of mastectomy, relapse free survival and overall survival 12 months post-surgery, as well as any discrepancies between planned and actual chemotherapy and HER2 targeted therapy administered. The minimum sample size of 80 patients treated with pertuzumab is sufficient to detect at least one event of left ventricular systolic dysfunction. This study is funded by Roche Products Pty Limited. **Results**: The study was open to recruitment in February 2018 and to date 21 patients have been enrolled from 3 Australian centres. **Conclusions:** Findings from this study will help clinicians to better understand the potential role of pertuzumab in the neoadjuvant setting in real world patients with HER2 positive early stage breast cancer.

References 1. Gianni L, Pienkowski T, Im YH et al. Lancet Onc. 2012;13(1):25

FRI-P33

PREDICTIVE FACTORS OF STABLE OR PROGRESSIVE DISEASE DURING ANTHRACYCLINE WITH/WITHOUT TAXANE-BASED NEOADJUVANT CHEMOTHERAPY IN BREAST CANCER

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Problem statement: Neoadjuvant chemotherapy (NAC) has been shown to effectively downstage locally advanced breast cancer; however, clinically, no response or a progression of the tumor can occur in some cases. Predictive factors of no response or progression are unknown compared to predictive factors of a response. We investigated predictive factors of stable (SD) or progressive disease (PD) during anthracycline with/without taxane based NAC. **Methods:** From January 2012 to December 2017, data were collected retrospectively by reviewing medical records of patients who received NAC. Statistical analysis was performed to compare patients with a partial response and complete remission to patients with SD or PD after anthracycline- or taxane-based chemotherapy. **Results:** In total, 242 patients received NAC with an anthracycline and cyclophosphamide (AC) regimen and 159 patients received anthracycline followed by taxane. Forty-one (17%) patients had SD or PD after anthracycline treatment, and 50 (31%) patients had SD or PD after taxane treatment. Factors related to SD/PD after an AC regimen included a large pretreatment tumor size ($p = 0.001$), clinical T3 status ($p = 0.01$) and high histologic grade (p 0.001). In cases of a T regimen, clinical T3 status ($p = 0.04$), estrogen receptor(ER)/progesterone receptor (PR) positivity ($p = 0.04$, 0.02, respectively), and

human epidermal growth factor 2(HER2) negativity (p 0.001) were predictors of no response.SD or PD after taxane was a negative predictor of disease-free survival. Moreover, SD or PD after anthracycline or taxane was a negative predictor of overall survival. **Conclusions:** Clinical stage, ER/PR positivity and HER2 negativity were predictors of no response to NAC. We need a combination of predictive factors including clinical data, novel molecular markers, and genetic factors to identify patients who will show no response to the standard NAC regimen. **Disclosure of Interest:** none

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FRI-P34

EARLY-LIFE BODY FATNESS IN RELATION TO TEXTURE VARIATION ON A MAMMOGRAM

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Problem statement: Texture features on a mammogram indicate the heterogeneity in patterns of breast density that are not captured by current mammographic density measurements (e.g., percentage of mammographic density [PMD]). Studies have shown that the V metric, a single summary measure of spatial variation in gray intensity values on a mammogram, is positively associated with breast cancer risk, independent of PMD. Early-life body fatness is inversely associated with breast cancer risk and PMD. However, it is unknown whether early-life body fatness is associated with the V, independent of PMD. Methods: We conducted an analysis among 1807 premenopausal (mean age: 46.0 years) and 2120 postmenopausal (mean age: 58.1 years) women who served as controls in a nested case-control study of breast cancer within the Nurses' Health Study (NHS) and NHSII. Prior to mammogram, participants recalled their body size at ages 5, 10, and 20 years using a 9-level pictogram (level 1: most lean) and BMI at age 18 years. The V metric (range: 2.9-44.4) was quantified using an automated computer-assisted analysis that assessed the grayscale variation in digital mammographic images. Multivariable linear regression was performed on square root-transformed V, adjusting for age, PMD, and potential confounders, and stratified by menopausal status. **Results:** The V metric and PMD were positively correlated (Spearman r=0.49 premenopausal, r=0.61 postmenopausal). Higher body fatness at age 5 years (Level ≥5 vs. 1) was significantly associated lower V in both premenopausal (beta coefficient=-0.54, 95% confidence interval[CI]=-0.72 to -0.40) and postmenopausal (beta [95% CI]=-0.34 [-0.47 to -0.22]) women. Similar inverse associations were observed with body fatness at ages 10 and 20 years. BMI at age 18 years (≥22 vs. 2) was inversely associated with the V (beta [95% CI]=-0.55 [-0.64 to -0.45] premenopausal; -0.44 [-0.52 to -0.36] postmenopausal; p-trend0.0001). The associations were slightly attenuated but remained statistically significant after additional adjustment for current BMI (-0.27 [-0.37 to -0.17], -0.27 [-0.35 to -0.18], respectively) and PMD (-0.23 [-0.33 to -0.13], -0.25 [-0.35 to -0.15], respectively) (all p-trend0.0001). **Conclusion:** Our data suggest that early-life body fatness is associated with mammographic texture measures, independent of breast density and adult body fatness.

FRI-P35

COMPLIANCE WITH MULTIDISCIPLINARY TEAM MEETING TREATMENT RECOMMENDATIONS

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Problem statement: Published evidence demonstrates improved survival for early breast cancer (EBC) patients who are discussed in multidisciplinary team meetings (MDM). Non-compliance with treatment recommendations may lead to poorer outcomes. **Methods:** Retrospective analysis was performed on prospectively collected data from the MDM of the Breast Cancer Research Centre-WA. Patients selected for discussion include those with locally advanced breast cancer (LABC), complex concurrent medical or psychosocial issues and those with metastatic disease. The primary endpoint was to assess the rate of non-compliance with treatment recommendations. Reasons for non-compliance, breast cancer events (local recurrence (LR), distant recurrence (DR), contralateral breast cancer (CBC), death), clinical trial recruitment rate and differing characteristics between compliant and non-compliant patients were secondary endpoints. **Results:** Between the 1st March 2011 to the 28th February 2016, 945 patients were discussed on 1157 occasions with 941 being female and 4 male. The median age was 55 years (ranging 21 – 98). Stages of disease was early (73%), local recurrence (7%), and metastatic (18%); with genetic risk or benign disease in 2%. 887 patients (93%) were compliant [C] and 68 (7%) non-compliant [NC] (Table)

Non-compliance Incidence

Treatment recommendation	Compliance N	Non-compliance N(%)
Surgery	562	7(1.2)
Radiation	702	16(2.2)
Endocrine	1110	26(2.3)
Chemotherapy	1108	24(2.1)
Biologic	1104	8(0.7)
Clinical trial	255	21(7.6)

The most frequent reasons for non-compliance were fear of therapy toxicity (46 patients - 45%), alternative therapies (22 patients - 22%) and inconvenience (34 patients - 33%). Outcome data in 562 patients (68 NC, 494 C) was available. Of these patients, 336 had EBC at the time of MDM discussion, excluding 3 C and 5 NC patients lost to follow up, 77 breast cancer events occurred. These were CBC/LR/DR/death in 19/8/10/17 C patients (21.9%) and 3/1/5/5 in NC (35%) patients respectively (chi-square test 3.368, p=0.067). **Conclusion:** We demonstrate that in a group of 945 breast cancer patients discussed in MDM, there was a 7% non-compliance incidence with treatment recommendations. Data analysis shows a trend for worse breast cancer outcomes in those who are non-

complaint. Further exploratory analyses for patient and tumour characteristics of C and NC patients will be presented.

FRI-P36

DOES THE TUMOR BED SURGICAL CLIPS AFFECT DOSIMETRIC CHANGES IN THREE-DIMENSIONAL FIELD-IN-FIELD WHOLE-BREAST IRRADIATION TECHNIQUES FOR PATIENTS UNDERGOING BREAST CONSERVING SURGERY?

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Purpose: The dosimetric effect of surgical bed clips, which have very high Housenfield unit, has not been fully elucidated. This study was undertaken to identify the influence of surgical clips on the dosimetric changes in three-dimensional field-in-field (3-D FIF) whole-breast irradiation (WBI) techniques in various plan settings. **Materials and methods:** A total of 17 eligible patients were recruited. The entire enrolled patients had received 3-D FIF WBI after breast conserving surgery (BCS) for adjuvant treatment and had no implanted surgical clips after surgery. For each patient, we artificially generated clips with 1000 HU on simulation CT scan. Image sets of two, four and six clips around tumor bed were generated in the same CT scans, respectively. All clips were drawn within 1cm from tumor bed site demarcated at the simulation CT scans. We compared the dosimetric volume parameters ($V_{105\%}$, $V_{103\%}$, $V_{100\%}$, $V_{98\%}$, $V_{95\%}$, $V_{90\%}$:$V_{x\%}$ indicates volumes which receive X% of prescribed doses) in 3-D FIF plans. 3-D FIF plans were reproduced in the original simulation CT scans with no artificial clips and compared the volume parameters between 0 versus 2, 0 versus 4, 0 versus 6, 2 versus 4 and 4 versus 6 clip sets, respectively after applying the same 3-D FIF plans achieved from the original CT scans (with no clips). The statistical analysis was performed using Wilcoxon rank sum test and Kruskal-Wallis test. **Results:** In Wilcoxon rank sum test, there was no statistically significant difference between 0 versus 2, 0 versus 4, 0 versus 6 clips in all volume parameters. There was also no statistically significant difference between 2 versus 4, 2 versus 6 clips in all volume parameters. In Kruskal-Wallis test, there was no statistically meaningful parameters in comparison among four parameters (0 versus 2 versus 4 versus 6) in all volume parameters. **Conclusions:** There was no statistically significant difference in terms of dosimetric volume parameters in the presence of surgical clips and increasing number of clips up to six. In photon beam breast 3-D FIF WBI techniques, the presence of surgical clips had negligible effect on beam dosimetry.

FRI-P37

IMAGING-PROVEN VENOUS THROMBOEMBOLISM AMONG BREAST CANCER PATIENTS IN A TERTIARY HOSPITAL IN THE PHILIPPINES FROM 2010-2015

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Problem statement: Venous thromboembolism (VTE) is a common cause of mortality in cancer patients. This paper looks into prevalent characteristic of breast cancer in association with VTE, if any. Methods: Hospital patient database were gathered from 2010-2015 of Venous Dupplex Scan or Computed Tomographic Pulmonary Angiography. Each result were reviewed for final conclusion bearing acute pulmonary embolism or acute venous thrombosis. Only the first VTE event after the diagnosis of cancer was considered. **Results:** There were 10,380 CTPA/Venous duplex scan performed for the year 2010-2015, where 916 (8.8%) had positive venous thromboembolism. Of the patients who had positive for venous thromboembolism, 208 (2%) had malignancy. Among all the malignancy-associated venous, majority 17.9% (n=37) had breast cancer. Mean age for Breast cancer patients who had positive VTE was 60.9(46-84) with majority 24(64.8%) having normal BMI. Most had VTE of lower extremities 28 (75.67%), presented with swelling of extremities 18(48.6%). Twenty-one patients (57.7%) had VTE within one year of cancer diagnosis, 8(21.6%) had VTE more than two years from cancer diagnosis. Sixteen (43.2%) were alive for more than two years from VTE diagnosis, 14 (37.8%) died within 3 months to one years from VTE diagnosis. During the time of VTE diagnosis, active cancer management were chemotherapy 17 (45.9%), hormonal therapy 12 (32.4%), surgery 4(10.8%), while 4(10.8%) had VTE as the presenting symptom of cancer diagnosis. Among those receiving chemotherapy, 11(64.7%) had VTE during chemotherapy days while 6 (35.%) had VTE with one month after completion of chemotherapy. All four patients receiving surgery during VTE occurred within the first month of surgery. Those with hormonal therapy 10(83.3%) had aromatase inhibitor, while only 2(5.4%) received tamoxifen. **Conclusion:** Breast cancer patients with VTE in our institution have normal BMI, presenting as swelling of the lower extremity. Pathology were mostly well differentiated and luminal type. VTE presented within one year of cancer diagnosis and were mostly alive for more than two years from VTE diagnosis. Active cancer management during VTE diagnosis was mostly during chemotherapy, followed by hormonal treatment receiving aromatase inhibitor.

FRI-P38

THE EFFICACY OF BILASTINE FOR TAXANE REGIMENS INDUCED RASH

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Problem statement: Taxane regimens are standard therapies for breast cancer. Taxane containing regimens induced rash occurred in 20% to 30%. The therapy for rash includes antihistamine and corticosteroid. Bilastine is a non-sedating second-generation H1-antihistamine. Bilastine showed the efficacy for urticaria, prurigo and cutaneous pruritus. However, its effectiveness for taxane regimens induced rash is unknown. The objective of this retrospective study was to evaluate the efficacy of Bilastine for taxane regimens induced rash. **Methods:** We identified 366 patients who received paclitaxel or docetaxel containing regimens at the Kure Medical Center and Chugoku Cancer Center from June 2010 to March 2018. Taxane regimens induced rashes were observed in 101 patients (27.6%). They were classified into 4 groups on the basis of the systemic antihistamine

and corticosteroid therapy: the (1) Bilastine and corticosteroid group (n=17), (2) another antihistamine and corticosteroid group (n=25), (3) Bilastine group (n=18), and (4) another antihistamine group (n=41). Adverse events were graded according to the Common Terminology Criteria for Adverse Events (version 4.0). This study was approved by the Kure Medical Center and Chugoku Cancer Center IRB. Results: The Bilastine and corticosteroid group had significantly shorter the median duration of systemic corticosteroids and antihistamine than the another antihistamine and corticosteroid group ($p<0.01$). The cumulative systemic corticosteroids doses for taxane regimens induced rash of the Bilastine and corticosteroid group had significantly lower than that of the another antihistamine and corticosteroid group ($p<0.01$). Bilastine group had significantly shorter the period of systemic medications than the another antihistamine group ($p<0.01$). The incidence of adverse events was observed as follows, somnolence in 3% (1/35), headache 3% (1/35) and dizziness in 3% (1/35) in the Bilastine and corticosteroid group and Bilastine group. There were no serious adverse events. **Conclusions**: Bilastine treatment reduced the need for systemic corticosteroids use and shortened the period of systemic corticosteroids for taxane regimens induced rash with acceptable safety profiles. Bilastine may be more effective than another antihistamine for taxane regimens induced rash.

FRI-P39

FEASIBILITY OF SEGMENTAL ECW/TBW RATIO FOR MILD TO MODERATE DEGREE BREAST CANCER-RELATED LYMPHEMDEMA: CORRELATION WITH TAPE CIRCUMFERENTIAL VOLUME MEASUREMENT

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Problem statement: To correlate segmental ECW/TBW ratio and tape circumference volume difference and to evaluate clinical feasibility of segmental ECW/TBW ratio in mild to moderate degree breast cancer-related lymphedema. **Methods:** Patients diagnosed with Breast cancer related lymphedema (BCRL) with inter-limb volume ratio 40% or lymphedema stage I or II determined by international Society of Lymphology were enrolled. Tape circumference volume was calculated using (V=h(C12+C1C2+C22)/12pi), then, inter-limb volume ratio was acquired by (V=volume / C_1, C_2=circumferences at the ends of the segment / h=distance between segment length). Bioelectrical impedance was measured by a FDA approved, a multiple frequency bioelectrical impedance(MFBI), InBody S10(Biospace®, Seoul, Korea), obtaining resistance induced by electrical currents by recording voltage difference in both hands, divided by current intensity. Impedance of each segment (both arms, legs, trunk, whole body) was used to automatically calculate segmental ECW/TBW ratio between unaffected and affected limb to acquire Inter-limb ECW ratio (Affected segmental ECW/TBW ratio)/(Unaffected segmental ECW/TBW ratio). Pearson's correlation coefficient was used to correlate Inter-limb ECW ratio and Inter-limb volume. *p* value of 0.05 was considered significant. **Results:** Mean values of tape circumferential volume measurements were 375.16±90.18cc on the affected side, and 327.46±68.63cc on the unaffected side, with inter-limb volume ratio of 1.15±0.12. The mean values of segmental ECW/TBW ratio by BIA were 0.393 ± 0.011 on the affected side, 0.382 ± 0.006 on the unaffected side, with inter-limb ECW ratio of 1.027 ± 0.12**.** Pearson's correlation coefficient(r) for inter-limb ECW ratio and inter-limb volume ratio was 0.421, showing moderate positive linear correlation. (*p* 0.001). **Conclusion:** Segmental ECW/TBW ratio values measured by InBodyS10 show satisfying correlation with the tape measurement method, is clinically feasible with high consistency and accuracy for detecting and measuring mild to moderate lymphedema, replacing time-consuming and inconsistent tape measurement method.

FRI-P40

CONSENT IN THE AGE OF WHITAKER AND MONTGOMERY: TIPTOEING THROUGH THE MINEFIELD OF PATIENT AUTONOMY

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Problem statement: There are growing uncertainties in the practice of medicine, given the decisions in Rogers v Whitaker [1992]HCA58 and more recently, Montgomery v Lanarkshire Health Board [2015]UKSC11, which (1) emphasize the importance of disclosure of risks associated with treatment which are considered material, not just to the reasonable patient having the patient's condition, but to the particular patient being treated, and (2) highlight the growing importance of patient autonomy in the doctor-patient relationship. **Methods:** The judgements of pivotal Australian and UK cases are reviewed and discussed. The Australian cases are Rogers v Whitaker, and Rosenberg v Percival [2001]HCA18; whilst the UK cases include Sidaway v Board of Governors of the Bethlehem Royal Hospital [1985]AC871, Chester v Afshar [2004]UKHL41, Al Hamwi v Johnston [2005]EWHC206(QB), Montgomery v Lanarkshire Health Board. **Results:** Risk disclosure has emerged as a new paradigm for action against doctors for professional negligence. While the premise for this development has centred on the need to respect patient autonomy, many questions are left unanswered: (1) Does "material risk" include the doctor's experience? (2) Do risks related to medication usage need to be similarly explained? (3) What standards need to be applied to ensure understanding of information communicated? (4) Are the risks of alternative or non-treatment material? (5) Are we abrogating our duty of beneficence and non-maleficence in favour of the principle of patient autonomy in this age of medical consumerism? **Conclusions:** There is a need for greater legal clarity so as to ensure that patient care is not compromised.

FRI-P41

LYMPHATIC MICROSURGICAL PREVENTING HEALING APPROACH (LYMPHA) – A SYSTEMATIC REVIEW

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Problem statement: Arm lymphoedema remains a significant cause of morbidity and reduced quality of life in patients who have undergone axillary surgery for breast cancer. The published rates of lymphoedema in axillary lymph node dissection ranges between 15-30%. Surgical management has largely been performed on post-operative patients where lymphoedema is already established. This is a review of studies using lymphovenous bypass at the time of an axillary dissection for breast cancer to prevent the development of this morbid complication. **Methods:** Using MEDLINE, nine electronic databases were systematically searched, from 1980 to July 2018. Keywords used were "lymphedema", "microsurgery", "axillary surgery" and 'lymphatic microsurgical preventing healing approach'. Inclusion of articles was established through application of a predetermined protocol, independent assessment by two reviewers and a final consensus decision. **Results:** Of the 81 articles, 6 provided published quantitative data that described the use of LYMPHA in axillary dissection for breast cancer staging. In a total of 190 patients who underwent a LYMPHA procedure, 9(4.7%) developed clinically significant persistent lymphoedema (Table 1). This is significantly less compared to patients who had a standard axillary dissection.

Author	Year	Number of patients (n)	Follow up (months)	Patients with lymphoedema (n)	Lymphoedema rate (%)
Boccardo	2009	19	12	0	0
Boccardo	2014	74	48	3	4.1
Casabona	2009	9	6	0	0
Feldman	2015	24	6	3	12.5
Bomberawalla	2017	42	22	3	7.1
Bansil	2015	22	9.5	0	0
Total		190	17.3	9	4.7

Conclusion: LYMPHA may be a feasible way to prevent lymphoedema developing at the time of axillary surgery for breast cancer staging. More studies with larger patient cohorts are required to determine the true efficacy of this procedure.

FRI-P42

PLEOMORPHIC LOBULAR BREAST CANCER – DOES MORPHOLOGY MATTER?

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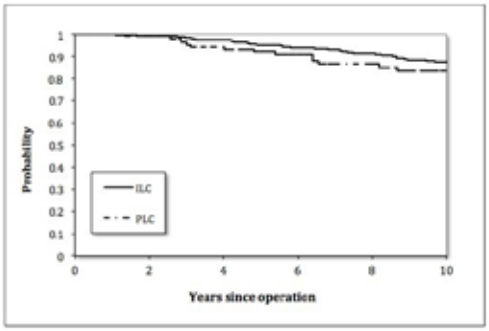
Introduction: Pleomorphic lobular carcinoma (PLC) has long been regarded as a biologically aggressive variant of invasive lobular carcinoma of the breast. **Methods:** 535 invasive lobular carcinoma (ILC) patients who were entered into the Strathfield Breast Centre database between 1992 and 2015 were analysed to see if there were differences in survival according to grade and tumour sub-type. **Results:** The mean age of the study group was 60.9 years (range 31-91). 115 cases were grade 1, 371 grade 2 and 49 grade 3. A clear difference in survival was seen when patients were stratified according to histological grade. When stratified for the three modified Bloom-Richardson grading scores there was no significant survival difference for the tubules and pleomorphism scores; however a statistically significant difference was observed for the mitosis score. 110 (20.6%) of the patients had ILC that was called *pleomorphic*. No overall survival difference was demonstrated when comparing those cases called *pleomorphic* vs classical ILC (cILC) (Figure 1). While no survival difference was demonstrated between PLC and cILC groups, a number of prognostic factors within each group did show a difference in occurrences. These were lymphovascular invasion (22.7% vs 9.9%), lymph node positivity (56.8% vs 41%) and HER2 expression (18% vs 1.7%). Differences between the two groups in patient age (58 yrs. vs 61 yrs.), tumour size (26mm vs 22mm), degree of multifocality (29.1% vs 24.5%), oestrogen (93.5% vs 97.6%) and progesterone (86.2% vs 83.4%) receptor status and the mastectomy rate (58.2% vs 53.9%) did not reach statistical significance. Although the total number of ER -ve cases was small in both groups intra-group survival of patients, stratified according to ER status, showed an unfavourable outcome for ER -ve PLC patients but a favourable outcome for ER -ve cILC patients. The trends for PR status were less obvious. **Conclusion**: This study, the largest reported series of PLC cases, does not show a survival difference between invasive lobular cancers called *pleomorphic* and those called *classical*.



FRI-P43

ETHNIC DISPARITIES IN THE INCIDENCE OF PHYLLODES TUMOURS AT COUNTIES MANUKAU HEALTH

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Problem statement: New Zealand's diverse population consists of a number of ethnic groups, including New Zealand European (74%), Māori (14.9%), Asian (11.8%), Pacific Island (7.4%) and other minorities including Middle Eastern, African, and Latin American (2.9%). Phyllodes tumour is a rare breast pathology which accounts for 0.5-1% of all breast tumours. Phyllodes tumours typically present in women between 40 and 50 years of age and are classified into a three-tiered system of benign, borderline or malignant, based on several histological characteristics. Little is known about the risk factors associated with this tumour. We hypothesise that within New Zealand's Māori and Pacific Island population, there appears to be a discrepantly higher incidence of Phyllodes tumours than in other ethnic groups. **Ethnicity Data:** Some studies have previously identified ethnic differences between the incidence of

Phyllodes tumours in other countries. Malignant Phyllodes tumours are more frequent among persons of Hispanic ethnicity, especially those born in Central America or South America. In a clinicopathological analysis there was a suggestion that Asian patients experienced a higher recurrence rate of Phyllodes tumours than those of non-Asian ethnicity.
Counties Manukau Population Demographics: Counties Manukau is a large DHB serving 11% of the population of New Zealand, or approximately 550,000 patients. Counties Manukau has the second largest DHB Māori population and the largest DHB Pacific Island population. In 2014, 39.8% identified as NZ European, 22.9% identified as Asian, 21.4% identified as Pacific Island, 15.9% identified as Māori, and 1.4% identified as other (Middle Eastern, Latin American, and African). **Methods:** We retrospectively reviewed the electronic clinical data of all patients over the age of 16 at Counties Manukau Health with a new histological diagnosis of Phyllodes tumour from January 2008 - December 2018. Benign, borderline and malignant Phyllodes tumours were included. **Results:** Over the last 10 years, there were 82 patients diagnosed with Phyllodes tumours at Counties Manukau Health in the Auckland region. All 82 patients were women. The average age at diagnosis was 43.5 years of age. 23/80 (28.1%) of patients identified as European, and the average age at diagnosis was 47.9 years. 20/82 (24.4%) of patients identified as Māori, and the average age at diagnosis was 44.8 years. 20/82 (24.4%) identified as Pacific Islanders, including patients from Fiji, Niue, Samoa and Tonga. The average age at diagnosis was 40.1 years. 17/82 (20.7%) of patients identified as Asian, including patients from China, India and the Philippines. 2/82 (2.4%) of patients identified as Other (one was Middle Eastern, and one was South African). **Conclusion:** There is a significant disparity between the population spread of ethnicities in New Zealand and the incidence of Phyllodes tumours. Māori and Pacific Islanders have a particularly high incidence of Phyllodes tumours despite being ethnic minorities. The average age at diagnosis also appears to be younger in these groups compared with NZ European patients. This data suggests that Māori and Pacific Islanders are at a considerably higher risk of developing this rare pathology than other population groups. This has not been documented before. Further studies are needed to explore possible genetic or environmental factors that could contribute towards this association.

FRI-P44

UTILITY OF SERUM TUMOUR MARKER VELOCITY OF CANCER ANTIGEN 15-3 (CA15-3) AND CARCINOEMBRYONIC ANTIGEN (CEA) IN BREAST CANCER SURVEILLANCE

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Problem statement: Serum tumour markers, cancer antigen 15-3 (CA 15-3) and carcinoembryonic antigen (CEA) are increasingly recommended for detecting breast cancer recurrence and monitoring treatment. While most studies report the prognostic value and correlation of absolute tumour marker values with recurrence, there is a paucity of literature on tumour marker velocity which is the rate of change over time in breast cancer surveillance. In this study, we aim to evaluate the significance of CA 15-3 and CEA velocity in detecting breast cancer recurrence. **Methods:** 67 consecutive patients with breast cancer recurrence were identified from a prospectively maintained database over a 15-year period (1998-2013) at a single tertiary institution in Singapore. They were matched to a control group with at least 5 year disease free survival (DFS) in terms of patient demographics and tumour clinicopathological characteristics. Serum CA 15-3 and CEA measurements were taken routinely preoperatively and at regular intervals of follow up postoperatively. Tumour marker velocity was derived from change in consecutive tumour marker values over time, expressed in unit/year. Logistic regression analysis was performed to investigate the association between tumour characteristics, tumour marker velocity and disease recurrence. **Results:** Serum CA 15-3 and CEA velocity of more than 2.5 U/ml/year and 1.2 ug/L/year respectively were shown to predict recurrence. These cutoff values were based on analysis of receiver operating characteristics (ROC) curves with area under curve (AUC) of 0.911 and 0.850 for CA15-3 and CEA respectively. Both CA 15-3 and CEA velocity had a combined sensitivity, specificity, positive predictive value (PPV) and negative predictive value (NPV) of 93.4%, 74.3%, 0.83, 0.88 respectively. In the multivariate analysis, both CA 15-3 and CEA velocity were shown to be significant predictors for recurrence ($p = 0.01$), independent of tumour size, axillary lymph node status and grade of tumour. **Conclusion:** These findings suggest that serum CA 15-3 and CEA velocity may be a useful adjunct to absolute tumour marker value to detect disease recurrence in breast cancer. **No disclosure of interest**.

FRI-P45

TREATMENT PATTERNS AND CLINICAL OUTCOMES IN ELDERLY BREAST CANCER PATIENTS

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Problem statement: The proportion of Korean elderly population (≥65-year old) is expected to be about 30% in 2035. Therefore, elderly breast cancer patients have been increasing. However, establishment of standard treatment and prognosis for elderly patients is difficult due to multi-morbidity. In this study, we evaluated the prognostic factors associated with survival in elderly breast cancer patients and also assessed the impact of comorbidity on prognosis. **Methods:** This retrospective study included 362 patients (≥65 years old) who underwent breast cancer surgery between 2003 and 2014 in our institution. For characterization, the patients were divided with two groups by age: aged group (65≤Age75, n=277) and super-aged group (Age≥75, n=85). Comorbidity was parametrized using American Society of Anesthesiologists (ASA). The Kaplan Meier analysis was used for overall survival (OS) and distant metastasis free survival (DMFS). Prognostic factors were evaluated using Cox proportional hazards regression. **Results**: The mean age of the patients was 71.1 years (range 65-88). Super-aged group had higher ASA score than aged group (90.6% vs 75.8%, p=0.004). The proportion of patients who did not have

chemotherapy (87.1% vs 54.5%, p0.001) and radiotherapy (56.5% vs 36.1%, p0.001) was higher in the super-aged group compared to aged group. In multivariate analysis, poor OS was observed in patients with higher histologic grade (HR 3.6, p=0.013), T stage (HR 6.9 p=0.001), and N stage (HR 3.4, p=0.009) and patients without radiotherapy (HR 1.4 p=0.021). The prognostic factors associated with DMFS were super-aged group (HR 4.1, p=0.023), higher T stage (HR 18.4 p0.001), and no-chemotherapy (HR 7.4, p=0.002). Endocrine therapy and subtype were not significantly associated with prognosis of elderly patients. Comorbidity did not affect DMFS and OS statistically in univariate and multivariate analysis. **Conclusion:** In our study, comorbidity and some important prognostic factors of general breast cancer such as systemic therapy and subtype did not affect overall survival, but radiotherapy was an important prognostic factor in elderly patients.

FRI-P46

IMPACT OF VITAMIN D ON BREAST CANCER OUTCOME

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Problem statement: Studies demonstrate an association of low vitamin D (D) levels with worse outcomes in early breast cancer (EBC) patients (pts). Studies incorporating treatment details and assessing for Defect across molecular subtypes are of value. **Methods:** Prospectively collected data on EBC pts with measured D levels within 3 months of diagnosis and treated by the PI were evaluated. Patient and tumour characteristics, stage, molecular subtype (luminal A: hormone receptor positive(HR+), grade 1, HER2-; luminal B HR+, grade 2/3, ± HER2+; TN: HR- HER2-; HER2+) and systemic treatment administered were reviewed. D level were categorized Sufficient (≥75nmol/L), Insufficient (50-74nnmol/L) and Deficient (≤49nnmol/L). Multinomial logistic regression model adjusted for stage was used with significance level set at 5%. **Results:** 1023 pts diagnosed 5/2001 to 8/2017 were included, median follow-up 46 months (4 -224). Mean age 53.4 yrs (25 – 86), pre or perimenopausal/postmenopausal/males in 42%/57.2%/0.8%; node positive 55%; luminal A/luminal B/TN/HER2+ in 5%/58%/17%/20%. D levels were Sufficient/Insufficient/Deficient in21%/42%/37%. Endocrine therapy compliance 98% for HR+, 92% for chemotherapy, 95% for trastuzumab. There were 187 BC events comprising 97 (9.5%) metastatic recurrence (MR), 90 non-metastatic (local recurrence LR, contralateral breast cancer CBC) and 53 deaths. There was no impact of D levels on LR, CBC or death in total population. Pts with Sufficient or Insufficient D had significantly higher risk of MR for the total population, and similarly in Luminal B pts (Table).

Table. Impact of D levels on MR (Relative risk [95% CI])

	Sufficient vs. Deficient	P value	Insufficient to Deficient	P value
Total population	1.98 [1.07, 3.68]	0.030	2.05 [1.21, 3.47]	0.008
Luminal B	2.43 [1.0, 5.9]	0.049	2.75 [1.29, 5.87]	0.009
TN	1.32 [0.37, 4.73]	0.675	1.68 [0.60, 4.72]	0.325
HER2+	1.90 [0.52, 6.90]	0.329	1.27 [0.41, 3.94]	0.678

Conclusions: Published studies have generally suggested an inverse association of D levels with EBC outcome. Our study demonstrates an opposite effect in total population and Luminal B subset, with deficient D level pts having lower MR risk. Exploratory analyses to explain this difference will be presented.

FRI-P47

OLIGOMETASTATIC BREAST CANCER: CAN WE EVER SAY CURE?

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Problem statement: Oligometastatic breast cancer (OMBC) is a subgroup of metastatic breast cancer (MBC) where the disease spread is minimal. Currently there is little published literature on the long-term survival outcomes and no standard of care exists for treating these patients, however more aggressive approaches are often considered. This study identified patients with OMBC from a MBC cohort and compared tumour immunohistochemistry, treatment and survival outcomes. **Methods:** Patients with MBC were retrospectively identified from Austin Health clinical records, undergoing treatment between January 2017 and May 2018. Clinicopathological information, including patient demographics, tumour histological subtypes, tumour burden and treatment lines were recorded. Patients with OMBC were identified. Descriptive analyses were performed. **Results:** This study identified, 111 patients with MBC (15 died during follow-up). Sixty-seven patients (60%) were previously treated for early breast cancer, with a median disease free interval of 4.67 years, and 44 patients (40%) had de novo metastatic disease. Forty-nine patients (44%) had OMBC, defined by either de novo (33%), recurrent (63%) or residual (4%) disease. The majority (74%) of OMBC patients had single organ disease, with bone only disease (n=18) being the most common. Tumour subtypes were compared between the OMBC group and non-OMBC group including: luminal breast cancer (27 vs. 40, p=0.31), HER2 positive disease (12 vs 19, p= 0.43) and TNBC (10 vs. 3, p=0.01), respectively. Local breast surgery was more commonly used in the oligometastatic setting (22% vs. 13%) and metastasectomy was uncommon overall. Fifteen long-term survivors were identified, four of which survived greater than 10 years from metastatic diagnosis (all with OMBC). The majority of patients (60%) had metastatic disease biopsied,

revealing 12 changes in breast cancer subtype, 8 of whom had OMBC. **Conclusion:** In a series of patients with MBC being treated at a single institution, OMBC was commonly identified. Local breast therapies were more commonly used in patients with OMBC and metastasectomy was rare. Long-term survivors were discovered in this cohort, with OMBC representing those that did exceptionally well. Patients with OMBC were more likely to have a metastatic biopsy, with a striking proportion demonstrating a change in breast cancer subtype.

FRI-P48

QUALITY OF LIFE AND BODY IMAGE IN WOMEN WITH SURGERY FOR BREAST CANCER IN SINGAPORE

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Problem statement: Breast Cancer is the most common malignancy in women in Singapore. With improvements in breast cancer treatment, more women are becoming long-term survivors of breast cancer, where quality of life(QOL) becomes crucial. Curative treatment usually involves surgery which can have an impact on their body image (BI) and QOL. We aimed to evaluate the impact of surgery on the QOL and BI of women with breast cancer in Singapore. **Methods:** This is a cross-sectional study using validated quantitative questionnaires to measure QOL and BI in women with breast cancer in National University Hospital, Singapore. We aimed to recruit 380 female patients with newly-diagnosed stage I-III breast cancer who had definitive breast cancer surgery. The patients completed the Breast-Q questionnaires at diagnosis,2 wks, 6 and 12 mths postop. Patient medical records were accessed to obtain basic demographic data, tumour characteristics and treatment information. **Results:** 369 women with the median age of 56 yrs (range 24 – 79 yrs) were recruited into the study between September 2015 and October 2017. Currently,233 patients (66%) have completed the follow up of 12 mths postop and 16 patients (4%) have withdrawn from the study. 116(49.8%) women had mastectomy alone, 90(38.6%) women had breast conserving surgery(BCS) and 27(11.6%) women had mastectomy with immediate breast reconstruction, with 21 patients (9%) having had more than one breast surgery. At 2 weeks postop, patients with BCS had better satisfaction with breast (67.3) and psychosocial wellbeing (73.8) than patients who had reconstruction (Satisfaction-55.7, psychosocial-70.8) or mastectomy alone (Satisfaction-46.3, psychosocial-63.8).This persisted at 12 months postop (figure 1). There was a significant difference in satisfaction with breast, psychosocial wellbeing and physical wellbeing over time for all patients who had surgery on their breast. There was a significant difference in satisfaction with breast and psychosocial wellbeing between the different surgical groups, with patients who had mastectomy alone faring the worst. There was no significant difference in physical wellbeing between surgical groups. **Conclusion:** Patients who had surgery on their breast had significant deterioration of satisfaction with breast, psychosocial wellbeing and physical wellbeing at 12 months post surgery. Patients who had mastectomy alone fared worst in their satisfaction with breast and psychosocial wellbeing compared with patients who had reconstruction or BCS.

FRI-P49

ESTABLISHING ROUTINE COLLECTION OF PATIENT-REPORTED OUTCOMES VIA THE BREASTSURGANZ QUALITY AUDIT: A PROOF-OF-PRINCIPLE PROJECT TO TEST FEASIBILITY

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Problem statement: Approximately 18,000 Australians will be diagnosed with breast cancer this year and 90% will survive at least 5 years. There is universal understanding that cancer affects the health and quality of life of individuals however our understanding of the impacts have mostly come from research activities. There is an opportunity to expand the roles of registries to inform clinical care, health service planning, policy and evaluation by establishing mechanisms for routine monitoring of patient-reported outcomes. This will increase awareness by health services of the late effects and chronic side effects of cancer and its treatment, allow timely evaluation of outcomes, and increase the likelihood of an informed health service response. **Methods:** A proof-of-principle study will be undertaken using the South Australian cohort of the BreastSurgANZ Quality Audit (BQA) to establish the viability of collecting patient-reported outcomes routinely. A software platform developed by Envido will be used and integrated with current workflow to enable identification and periodic surveying of patients. Governance, ethical/privacy, consenting, data security and linkage process will be established. Prospective and retrospective data collection will be tested. Outcome dashboards will be developed to meet the needs of clinicians and patients. Outcome measures will include patient response rate and experience and clinician satisfaction and perceived benefits. The project will be undertaken by a multidisciplinary team including clinicians, behavioural scientists, cancer epidemiologists, consumer advocates, data specialists, and software developers. **Results:** This proof-of-principle project will demonstrate the viability of collecting patient-reported data via the BQA and will establish dashboard reporting and feedback systems that are meaningful to patients and clinicians. Opportunities for national scale up and funding will be explored. **Conclusion:** This proposal addresses a critical gap for the establishment of routine patient-reported surveillance which is paramount in an environment of increasing cost pressure, health system reform and increasing consumer engagement. If implemented broadly, the inclusion of patient-reported data to clinical registries will address a key gap in national cancer outcome data and provide stronger intelligence to inform multiple layers of care delivery including quality and safety reporting, auditing, direct clinical care, health economic analysis and research.

FRI-P50

BREAST CANCER FOLLOW-UP - THE PATIENTS PERSPECTIVE

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Problem statement: Due to the number of patients who are surviving and living longer with cancer, follow-up has changed over the last few years with many patients being discharged earlier. Whilst this is beneficial for services and resource allocation, quite often this causes further problems for those patients who would have benefited from remaining in the system longer. The emerging changes in follow-up and the impact on patient's wellbeing instigated a follow-up survey designed by patients and implemented through the Mammo-50 trial. Mammo-50 trial is assessing the optimum frequency or duration of follow-up including mammography for breast cancer patients aged 50 years and older at diagnosis. **Methods:** Independent cancer patient voice (ICPV) members designed a survey to collect the follow-up experiences of patients with a diagnosis of cancers. In addition, unmet needs and preferences for follow-up after treatment were collected. Ethical approval was obtained through the Mammo-50 trial in order to distribute this within the UK national cancer research network and UK charities. Participants completed the survey through the online Survey Monkey. Mammo-50 also collected information about follow-up and unmet needs through the quality of life and qualitative sub-studies. **Results:** 350 patients completed the survey. It became apparent that different disease sites were offered different follow-up and as such for the purpose of this study only the 118 classed as early breast cancer patients were analysed in more detail. 66% of patients had unmet needs which were varied and included physical and psychological needs. Interestingly some patients stated that they would have preferred some alternative form of follow-up. Mammo-50 patients indicated that only 28% had raised levels of distress due to concerns about fatigue, sleep, worry/anxiety, memory/concentration or pain. **Conclusion:** Gathering data about follow-up experiences and unmet needs is complex as it does depend on the population you are sampling. Asking patients through an online survey indicated far higher problems than asking patients within a trial. All patients are different and follow-up needs to be individualised where possible. Follow-up is important and more innovative strategies need to be employed to ensure the patients' needs are met.

FRI-P51

PHYSIOTHERAPY MANAGEMENT OF BREAST CANCER TREATMENT-RELATED FATIGUE, LYMPHOEDEMA, METASTATIC AND RADIATION-INDUCED BRACHIAL PLEXOPATHY: A CASE REPORT

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Problem statement: Tumour-related and radiation-induced brachial plexopathy are uncommon complications in the treatment of breast cancer. To date, there is no best-practice guideline regarding diagnosis, rehabilitation and management of brachial plexopathy. Early detection and management of cancer treatment-related complications may assist to optimise symptom control, to improve function and quality of life in breast cancer survivors. This case study aims to increase awareness of these rare conditions and the potential role of physiotherapy in assisting with management of long-term complications caused by the neuromuscular dysfunction. **Methods:** This case study reports a 61-year-old female presented with a 5-month history of a neglected primary fungating and inoperable left breast cancer. She underwent neoadjuvant systemic therapy, followed by radiation therapy (XRT) and further systemic treatment post XRT. One month after diagnosis and early in the course of XRT, she reported mild left arm lymphoedema, forearm ache, paresthesia, hand weakness and difficulties with dexterity tasks. Following XRT, atrophy, paresthesia and weakness of the muscles of the left hand progressively worsened while continuing palliative systemic treatment. Magnetic resonance imaging showed infiltrating mass affecting axillary vessels and nerves of brachial plexus four months after initial diagnosis; and brachial plexopathy involving ulnar nerve and a degree of injury to the median nerve eight months after initial diagnosis. The patient was referred to outpatient physiotherapy and occupational therapy of a quaternary care hospital. Level of evidence: level V. **Results:** Management was challenging due to multiple concerns including cancer-related fatigue, left arm lymphoedema, reduced shoulder active range of movement, combined ape and claw hand deformities and paresthesia, reduced grip strength and overall reduced upper extremity function. A multi-modal approach was used including education, manual therapy, exercise therapy, hand splinting and lymphoedema therapy with goals to restore and / or maintain range, strength and flexibility; prevent contracture, stabilise lymphoedema and preserve upper limb function. **Conclusions:** This case study highlights the role and outcomes of conservative multi-disciplinary management of a challenging case of progressive brachial plexopathy with predominant ulnar nerve palsy, coexisting with lymphoedema in a patient with metastatic and locally advanced breast cancer. **Disclosure of interest:** none

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FRI-P52

WALKING THE BOUNDARIES – IS THE 6-MINUTE WALK TEST ACHIEVABLE IN A OUTPATIENT BREAST CLINIC?

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Problem statement: Healthy levels of physical activity and improved fitness have shown better quality of life outcomes and improved survival in women with breast cancer. There is a lack of baseline data for fitness levels in a general female outpatient population in Australia. **Methods:** A single-centre cross-sectional study aims to provide a snapshot of the fitness levels of women attending the Surgical and Oncology Breast Outpatient Clinic at Western Health, Victoria. N=200 women aged 18-85 were surveyed on their general health status and details of treatments for those with a breast cancer diagnosis. The 6-minute walk test (6MWT) was then

performed on a single-turn 30m walking track. Single and multiple linear regression models were performed with analysis of variance. **Results:** The mean 6-minute walk distance (6MWD) was 486.6m (95%CI±12.8m), which is comparable with reference ranges. The mean age of participants was 47.5 (range 18-85). N=97(48.5%) participants had a diagnosis of breast cancer. Breast cancer diagnosis had a negative effect on 6MWD of -33.6m walked (SE=12.8m, p=0.010). Body mass index (BMI) had a negative effect on 6MWD of -4.2m walked per unit of BMI increase (SE=1.0m, p0.001). The presence of any major medical comorbidity also had a negative effect on 6MWD of -56.9m walked (SE=14.7m, p0.001). Smoking was not associated with a difference in 6MWD. Multiple regression analysis showed that only age, BMI and presence of comorbidities but not breast cancer had statistically significant effects on 6MWD. Self-reported exercise tolerance correlates significantly with 6MWD (walking: R2=0.14, 0.014m±0.0025, p0.001 and stairs: R2=0.03, 3.0m±1.2, p=0.014) but this may be clinically irrelevant due to the high degree of variance. **Conclusion:** The 6MWT was easily performed within the outpatient environment during routine clinics and a set of baseline fitness data has been established for patients attending a general breast clinic. No set of variables predicts 6MWD well; the combination of age and BMI performed better than any single self-reported measure. This indicates that the 6MWT provides additional information from the general health status and self-reported measures and can be a valuable assessment tool in the outpatient setting. **The authors have no conflict-of-interests to declare.**

FRI-P53

HEALTH CARE RESOURCE UTILIZATION FOR PATIENTS WITH METASTATIC TRIPLE NEGATIVE BREAST CANCER (mTNBC) IN THE REAL WORLD CLINICAL SETTING: AN OBSERVATIONAL BREAST CANCER (OBTAIN) STUDY FROM AUSTRALIA

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Problem statement: Compared to other breast cancers, triple-negative breast cancers (TNBC) are more chemo-sensitive, and for which there are not yet effective targeted therapies. Therefore, chemotherapy forms the mainstay treatment option for patients with metastatic triple-negative breast cancers (mTNBC). It is well established that these cytotoxic treatments result in several adverse events which in turn results in higher health care resource utilization (HCRU). However, there is scant information on HCRU in the real word setting for patients with mTNBC. **Methods:** An observational, multi-site, retrospective study was conducted to evaluate HCRU by mTNBC patients. After obtaining relevant ethics approvals, medical records were abstracted using the electronic case report forms. The study included a sample of 26 patients who commenced first line treatment for mTNBC between 1st July 2012 and 30th June 2015 June. HCRU data was included from the index date until the end of data abstraction or death, with a minimum of 12 months follow-up. The index date is defined as the date of initial first-line systemic therapy for the treatment of mTNBC. **Results:** Health care resources utilisation was analysed for inpatient admissions, outpatient visits and imaging. The majority of patients were managed in the outpatient setting with 80.4% requiring ≥1 admission, most frequently for cancer related care (67.4%), with a mean of 21.1 visits per outpatient. Inpatient admission (=1) happened in 12% of patients on first line therapy, 14.3% of patients on second line therapy and 42.9% of patients receiving treatment in the third line setting. While the prime reason for admission for patients on first and second line therapy was treatment related adverse events, in patients on third line therapy, it was related to higher disease burden. Majority of patients received at least one imaging test (56.5%) with a mean of 1.8 tests per patient, with imaging most frequently conducted to evaluate disease progression (39.8%) and adverse events (30.1%). Notably, the HCRU increased overtime as the disease progressed. **Conclusion:** Health care resources utilization (HCRU) is high among patients with metastatic triple-negative breast cancer indicating an urgent need for more efficacious and less toxic treatments for this patient group.

FRI-P54

THE MANAGEMENT OF BRCA PATIENTS IN THE WELLINGTON REGION: A 10 YEAR OVERVIEW

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Problem statement: The management of women with BRCA mutations is not standard and practice in New Zealand and Australia varies. There is increasing evidence BRCA women who present with cancer can be managed safely with breast conservation and review bilateral surgery at a later date. The purpose of this audit was to examine management of BRCA women presenting with cancer or consideration of risk reduction. **Methods:** A retrospective review of a BRCA database of patients assessed in the Family History, and Symptomatic Breast Clinics at Wellington Hospital, supplemented by cases from the Genetics department. Information from patients' notes was collated - age at BRCA diagnosis, ethnicity, surveillance modality, age at breast cancer diagnosis, tumour characteristics, initial surgical management, prophylactic surgery, and cancer recurrence/death. **Results:** A total of 75 patients were identified, of which one was male. With one exception, all were NZ/other European descent. 34 patients were BRCA1, 38 were BRCA2, two BRCA variant, and one Li-Fraumeni. Age at BRCA diagnosis ranged from 19-79 (mean 39). 50 women were regularly followed up in the Family History Clinic, while 25 patients were from the Symptomatic Breast Clinic. 29 patients were diagnosed with breast cancer, 16 were BRCA1 compared to 11 BRCA2. Mean age at diagnosis was 44.6 (range 29-79). Five patients were known BRCA prior to diagnosis. Regarding index cancer management, 10 patients had breast conservation, 10 had unilateral mastectomy, and nine had bilateral surgery. 12 women had breast reconstructions (unilateral or bilateral implant/flap). Two women treated initially with breast conservation went on

to have bilateral surgery, 10 who had unilateral cancer went on to have contralateral surgery. Risk reducing prophylactic bilateral mastectomy was performed for eight women. 39 women had risk reducing bilateral salpingo-oophrectomy. Six patients had recurrent disease; three were initially managed surgically, and three were palliated. Three deaths was recorded; one from breast cancer metastasis, two from other malignancies. **Conclusion**: Our audit shows the varying practice in management of BRCA patients in the Wellington region. A wider understanding of practice in Australasia may promote better cohesion between medical professionals caring for these patients. **Disclosure of interest** – nil.

FRI-P55

RADIOGENOMIC ANALYSIS OF TRIPLE NEGATIVE BREAST CANCER: FEATURES OF RADIOMICS AND TRANSCRIPTOMICS

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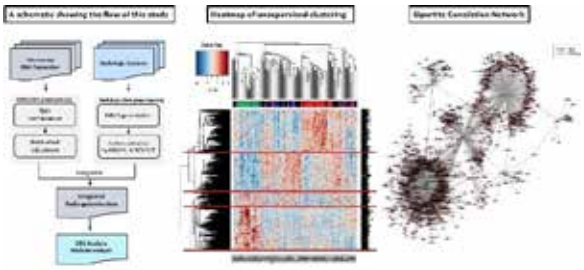
Problem statement: To our knowledge, none of the studies analyzed radiologic features according to the molecular subtype of triple-negative breast cancer (TNBC). The purpose of this study was to investigate associations between MR imaging features and gene expression profiles according to the molecular subtype of TNBC. **Methods:** In this institutional review board-approved study, 136 women (50.3 years, range, 34-77 years) with TNBC underwent preoperative breast MRI and gene expression analyses data using surgical tissues. Molecular subtype includes basal-like, immunomodulatory, mesenchymal or mesenchymal stem-like, and luminal androgen receptor. We performed the differential gene expression analysis and pathway enrichment analysis according to the TNBC subtype. For qualitative image analysis, two readers retrospectively reviewed the MR images using BI-RADS in consensus. For quantitative image analysis, image pixel extraction and texture analysis was performed with nordicICE software. All radiologic features were reduced with first principal component. Differences in radiological features between TNBC subtypes have also been analyzed. Bipartite graph was constructed based on the correlation coefficient between gene expression and radiologic feature to examine the relationship between the radiologic feature and molecular function. **Results:** When compared to other subtypes, basal-like subtype express genes related to cell cycle and cell division. There was no qualitative radiologic feature associated with specific subtypes. To the contrary, there were quantitative radiologic features which can divide basal-like and the other subtypes (all p.05). In bipartite correlation between all 19449 genes and 18 quantitative radiologic features, histogram peak is correlated with genes enriched in extra cellular matrix, tissue morphogenesis, and tube development (all p10-4). Mask area is correlated with genes enriched in cell cycle, cell division, differentiation and organ development (all p10-4). **Conclusion:** TNBC with basal-like subtype is obviously different with TNBC with other subtypes as a result of radiomic and transcriptomic feature analyses. **Disclosure of Interest**: none.



SAT-P01

LOBULAR NEOPLASIA IN BREAST SCREEN SETTING MULTICENTRE STUDY (ST VINCENT AND MONASH) RETROSPECTIVE, DESCRIPTIVE STUDY 23 YEARS (1993-2016)

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Background on Lobular neoplasms:
Spectrum of lesions encompassing atypical lobular hyperplasia (ALH) and lobular carcinoma in situ (LCIS).
- LN is often multifocal and bilateral.
- LCIS SUBTYPES
- Classic
- Variant types (pleomorphic and LCIS with comedo necrosis)
- SIGNIFICANCE
- Marker of increased risk for invasive carcinoma.
- LCIS: 8-9-fold risk of developing subsequent carcinoma
- ALH:4-5-fold risk

Clinical guidance for the management of lobular carcinoma in situ (Cancer Australia):
- MDM Decision
- Concordant Classic LCIS on core needle biopsy. No other higher risk abnormalities that would impact management surveillance remains an appropriate option.
- Discordant LCIS on core needle biopsy: Subsequent biopsy to obtain a larger tissue sample
- Other LCIS subtypes (pleomorphic or with comedo necrosis) or proliferative lesions present that require investigation, excision should be undertaken.

Problem: Limited consensus recommendation for the management of lobular neoplasia in particular Classic LCIS.
Research question:
- Incidence
- Radiological appearance
- Management
- Final outcome
- Of screen-detected lobular neoplasia (LN)?
- To help guide future management and evidence-based recommendations.

Method: Inclusion criteria: Patients with ALH and LCIS as the highest risk lesion on core biopsy were included. Search parameters using ALH and/or LCIS diagnosis on core biopsy and high-risk status LCIS patients.
Exclusion criteria: Those with additional ADH, DCIS, invasive carcinoma and radial scar on core biopsy
Analysis of:
- Age, family history, Breast Screen round, lesion type.

- Imaging
- Architectural distortion, mass, calcification
- Size
- Unilateral, Bilateral
- Imaging concordance? (calcification or asymmetric density in this group)
- Histopathology on excision or follow up period

Results:

- At both centers during 1993 -2016:
- 504 686 women were screened
- 1 913 245 screening mammograms were performed
- 72 patients met inclusion criteria
- 60 LCIS and 12 ALH on core biopsy; 16 with LCIS – variant type
- Median screening round 3.5 (range 1 - 11)
- Incidence of LCIS 11.8 per 100 000 Breast Screen women
- Table A at the end of abstract

Conclusion? To excise or not to excise Classic concordant LCIS.

Table A

- The authors have no conflict of interest
- Other tables of results are available if required

SAT-P02

ZnR/GPR39 MODULATES KCC ACTIVITY IN ESTROGEN NEGATIVE BREAST CANCER CELLS

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Problem statement: Breast cancer is one of the most common and calamitous disease affecting women worldwide. The expression of Estrogen receptor (ER) is used as a biomarker to guide therapy and ER positive patients are treated with tamoxifen. Resistance to tamoxifen, develops in many patients, thereby increasing the mortality rate of this disease but the underlying mechanism is not well understood. Our study shows that extracellular Zn2+ activates ZnR/GPR39, a Gq-coupled receptor, linked to cell growth. KCC cotransporters mediate K+/ Cl- transport across the plasma membrane and have been suggested to play a role in cell migration and proliferation. We hypothesize that Zn2+, via its sensing receptor ZnR/GPR39, modulates KCC activity and induces breast cancer growth. The aim of this study is to explore the mechanism linking ZnR/GPR39 and KCC activity in ER negative breast cancer cells. **Methods:** Calcium imaging- Live cell imaging of BT20 cells was performed using Ca2+ sensitive dye Fluo4. KCC paradigm- Single cell fluorescence imaging of a pH-sensitive dye, BCECF, using NH4Cl paradigm was applied. Following the initial alkalization induced by NH3 diffusion, acidification via activation of ion transport systems and transport of NH4+, as a surrogate to K+, was monitored. Cells were pre-treated with Zn2+ (200mM, 2min) to activate the ZnR/GPR39, control cells were not treated, and rates of acidification were compared, represented by fluorescent signal changes. Q-PCR – To monitor the mRNA levels of GPR39 and KCC isoforms in breast cancer cells. Results – Zn2+ dependent Ca2+ signaling, via ZnR/GPR39, was observed in ER negative BT20 cells. Extracellular Zn2+ triggered K+ dependent Cl- transport in the BT20 cells. The Zn2+ dependent upregulation of ion transport was abolished by DIOA (KCC inhibitor), indicating that the ion transport was mediated by a KCC family member. Moreover, Zn2+ dependent upregulation of ion transport was attenuated by the MAPK inhibitor UO126, suggesting that Zn2+ acts via this pathway to enhance KCC-dependent Cl- transport. **Conclusion:** ZnR/GPR39, active in ER negative breast cancer cells, upregulates KCC activity in these cells. This pathway may present a novel target for treatment of Tamoxifen resistant tumors.

SAT-P03

ROS-MEDIATED APOPTOSIS INDUCED BY FRUIT POLYPHENOLS IS FOLLOWED BY P38MAPK, ERK1/2 AND THE AKT SIGNALING PATHWAYS MODULATION IN BREAST CARCINOMA MODEL

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Problem statement: Breast cancer is the primary cause of cancer death in women. Although current therapies have shown some promise against breast cancer, there is still no effective cure for the majority of patients in the advanced stages of breast cancer. Polyphenols represent a large group of promised natural substances well studied due to their free radical's scavenging and antioxidant activities. However, some studies indicate that polyphenols also exhibit pro-oxidant properties. In this study, the possible involvement of the pro-oxidant activities of fruit polyphenols was investigated in vitro in relation to apoptosis induction in breast carcinoma. **Methods:** In order to achieve research goals, we used several methods included flow cytometry, western blot analysis and fluorescence microscopy to study apoptosis occurrence and apoptosis signaling pathways changes. **Results:** We demonstrated that fruit polyphenols induced caspase-dependent cell death associated with increased oxidative stress. We also showed fruit polyphenol-mediated release of mitochondrial pro- and anti-apoptotic proteins of the Bcl-2 family and modulation activity of the Akt, p38 MAPK, and Erk-1/2 pathways as well as the signaling of ROS-mediated DNA damage. **Conclusion:** Our data demonstrated that fruit peel polyphenols suppressed breast cancer cell growth through increased intracellular oxidative stress and the activation of p38 MAPK and deactivation of the Erk-1/2 and Akt signaling pathways. This study was supported in part by the Grant Agency of Ministry of Education, Science, Research, and Sport of the Slovakia (VEGA No. 1/0753/17) and the Agency for Science and Research under the contract No. APVV-16-0446

SAT-P04

IS ASYMPTOMATIC SURVEILLANCE AFTER STANDARD TREATMENT BENEFICIAL? A 10YR-SURVIVAL ANALYSIS OF RECURRENT BREAST CANCER PATIENTS BY DETECTION METHOD OF RECURRENCE

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Problem statement: Surveillance of recurrence after treatment of breast cancer (BC) for early detection and

its impact on overall survival are known to differ depending on recurrent site. As the evidences depend on historical randomized clinical trials we aimed to address questions whether earlier detection might have impact on survival. Also, to give answers to heterogeneous surveillance strategy, we performed a retrospective 10yr-survival analysis of a large cohort of recurrent BC patients according to their detection method. **Methods:** From 4188 operable BC patients who completed treatment Asan Medical Center from 2006 to 2008, 469 patients with recurrent BC were analyzed. Median disease free interval was 35.3 months (range 2.8-97.6) and overall survival (OS) was analyzed as time from initial diagnosis/surgery to death. Among 469 patients who developed recurrence, 23.7% were local (ipsilateral breast, skin, chest wall), 22.6% were regional (ipsilateral axillary, internal mammary LNs) and 53.7% developed distant metastasis. 10yr-OS was analyzed according to recurrent site and its detection method. **Results:** Detection of recurrence were categorized as 'asymptomatic surveillance (N=162, 34.5%)' and 'symptom-guided (N=307, 65.5%)'. Asymptomatic screening method included mammography (MMG), ultrasound, tumor marker (CA15-3) and systemic images (eg. PET scans). Overall, asymptomatic vs symptomatic 10yr-OS did not differ (81.3 vs 78.8 months, p=0.778). Among patients with distant metastasis, 10ys-OS was not significantly different (70.3 vs 66.7, p=0.846) and was similar according to stage/subtype. Among patients with local recurrence only, 10yr-OS was 95.1 months (94.4 vs 94.5, p=0.809), which may be insufficient number of events to show significant difference. Among regional recurrent BCs, longer OS was observed in asymptomatically detected patients than symptom-guided group (86.1 vs 63.4, p=0.004). In Cox regression analyses, asymptomatic detection showed significant better survival (HR=3.9, 95%CI:1.6-9.5) and this observation was more evident in patients with hormone receptor(HR) negative primary BCs (69.9 vs 47.9, p=0.029). Intriguingly, only 8.6% (7/80) of regional recurrence were diagnosed by MMG. **Conclusion:** We observed survival benefit with asymptomatic screening in detecting regional recurrence especially in HR-negative primary BC patients. Although with limitation that surveillance method varied widely, we emphasize the role of asymptomatic surveillance of regional nodal evaluation including breast-ultrasound.

SAT-P05

OPTIMISING THE EARLY DETECTION OF BREAST CANCER IN AUSTRALIA

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Problem statement: There is growing interest in more risk-based, personalised approaches to breast cancer detection and screening, driven by evolving research on stratified risk, advances in breast imaging technologies and increased stakeholder interest. An illustrative example is the growing interest in mammographic density, which is an established risk factor for breast cancer, biologically and through reduced mammographic accuracy. However, there is no conclusive evidence nor scientific consensus on how mammographic density should be measured and combined with other risk information, how best to communicate findings to women, and optimal management of women in high and low risk groups. The Australian Government has funded Cancer Council Australia to explore options for risk-based, personalised approaches to breast-cancer screening in Australia. The 12-month project will investigate evidence to build consensus on optimal clinical pathways for women in particularly high and low risk groups and how communication with women in these risk groups should be undertaken. **Methods:** Key activities to support the project's aims include:

1. Summary audit of current clinical services relating to early detection of breast cancer and breast cancer risk assessment, including BreastScreen, family cancer clinics, primary care and specialist clinics.
2. Summary audit of non-clinical activities, including key research, stakeholder and commercial activity.
3. Preliminary literature reviews, exploring the evidence base for risk-based screening protocols and routine risk assessment and advice.
4. Development of consensus recommendations to support clinical practice and the provision of guidance to policy makers, health professionals and consumers in Australia. The project will be guided by an independent, multidisciplinary expert management group. Information will be drawn from national statistical data, journal and grey literature on policy and current procedures, and extensive stakeholder consultation. Peer-reviewed literature will be identified from medical databases, including PubMed and EMBASE. Grey literature, such as media articles, health promotion material, and other content from interest groups, will also be examined. The project will also scope international best practice as part of a summary review. **Results:** The project will produce a suite of consensus statements, fact sheets and summary outcomes, and recommendations for ongoing work. **Disclosure of Interest:** Funding: Australian Department of Health

SAT-P06

USING THE GAIL MODEL TO RISK-STRATIFY WOMEN FOR BREAST CANCER SCREENING: MODEL VALIDATION ON 40,000 AUSTRALIAN WOMEN ATTENDING BREASTSCREEN

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Problem statement: Current breast screening protocols do not consider the influence of common breast cancer risk factors other than age, leading to a growing concern about whether screening programs are suitable for all women. Alternative risk-based protocols maybe more suitable but require population-level validation of models that can stratify women into different levels of breast cancer risk. **Methods:** We evaluated the Gail model (NCI Breast Cancer Risk Assessment Tool) using questionnaire data and linked screening, cancer registration and death records from 40,158 women aged 50-69 years who were actively participating in BreastScreen Australia (via the lifepool cohort). We investigated the association between Gail scores and future risk of invasive breast cancer. We also evaluated breast cancer risk estimates from Gail models with a reduced number of variables. **Results:** The Gail model predicted 612 invasive breast cancers compared to 564 observed cancers [expected/observed (E/O)=1.09 (95%CI 1.00-1.18)] over a median follow-up period of 4.3 years. There was good agreement between observed and predicted breast cancers across decile groups of Gail scores (p=0.6) but the model overestimated cancers for the top decile [E/O=1.65(95%CI 1.33-2.07)]. Women in the highest quintile of Gail risk scores had more than double the risk of invasive breast cancer compared to women in the lowest quintile [HR=2.28 (95% CI 1.73-3.020, p<0.0001)]. Compared to women with a median level of risk (Quintile 3), women in the lowest two quintile groups had a 37-41% decreased risk of invasive cancer [Q1 vs Q3=0.59 (95%CI 0.44-0.79), p<0.001; Q2 vs Q3=0.63 (95%CI 0.47-0.84), p=0.001] and women in the highest quintile had a 34% increased risk [Q5 vs Q3=1.34 (95%CI 1.06-1.70), p=0.014]. Similar patterns persisted within age groups 50-59 and 60-69 years. Model discrimination for cancer was modest [AUC 0.59 (95% CI 0.56-0.61)]. A reduced Gail model without details on ethnicity and hyperplasia was comparable to the full model for stratifying women into risk groups. **Conclusions:** The Gail model and a simplified version were found to be effective tools for stratifying BreastScreen Australia participants into groups according to different levels of breast cancer risk. **Disclosure of Interest Statement:** Authors have nothing to disclose.

SAT-P07

SOME OPTIONS FOR COMBINING QUESTIONNAIRE AND MAMMOGRAPHIC DENSITY MEASURES TO ESTIMATE RISK OF FUTURE INVASIVE BREAST CANCER AND INTERVAL CANCERS IN SCREENED WOMEN

Carolyn Nickson[1,2], Pietro Procopio[1,2], Yulia Arzhaeva[3], Louiza Velentzis[1,2], Sarah Carr[1], Anneliese Spiteri-Staines[1], Lisa Devereux[4], Bruce G. Mann[5,6], Paul James[7,8], Grant Lee[1], Cameron Wellard[1], Ian Campbell[8,9]

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Problem statement: There is a growing interest in delivering more personalised, risk-based breast cancer screening, including protocols that incorporate mammographic density. The Gail questionnaire-based model (NCI Breast Cancer Risk Assessment Tool) and the AutoDensity fully-automated mammographic density measurement tool have each been shown to stratify women into groups according to their risk of breast cancer; the AutoDensity tool also provides information on the likely accuracy of mammography. This project aims to validate the Gail model and AutoDensity together on a large Australian population and examine how they can be combined to estimate various risks. **Methods:** We evaluate the Gail model and AutoDensity measurements using questionnaire data, and linked screening, cancer registration and death records from over 35,000 women aged 50-69 years who were actively participating in BreastScreen Australia (via the lifepool cohort). Mammographic density was measured from screening mammograms at enrolment. **Results:** With a median follow-up period of 4.5 years, women in the highest quintile of Gail scores had a 2.3-fold risk (hazards ratio 2.3 (95% CI 1.7-3.0), p<0.0001) of incident invasive breast cancer compared to women in the lowest quintile. Women in the highest quintile of AutoDensity values had a 1.5-fold risk (95% CI 1.1-2.0 p=0.011) of incident invasive breast cancer and a 2.6-fold risk (95% CI 1.1-6.2, p=0.034) of an interval cancer compared to women in the lowest quintile. With Gail and AutoDensity measurements weakly correlated (r2= 0.003, p=0.05), we demonstrate various simple approaches to combining this information to stratify women according to breast cancer risk and risk of an interval cancer. **Conclusions:** The Gail model and the AutoDensity tool offer simple and effective measurements that can be combined to stratify breast cancer screening participants into risk groups according to their future breast cancer risk and the risk of an interval cancer. **Disclosure of Interest:** Funding: Cancer Australia PdCCRS grant (ID: 1066771)

SAT-P08

MACHINE LEARNING MODELS FOR POPULATION-LEVEL RISK STRATIFICATION

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Problem statement: Population-level stratification according to the risk of breast cancer (BC) is of crucial importance in designing risk-based screening strategies. Risk factor assessment tools play a crucial role in this context and should reflect current evidence on BC risk. However, with new evidence on BC risk factors emerging, updating those tools can be problematic. **Methods:** Machine learning (ML) algorithms represent an alternative way of exploring and exploiting big data in the public health sector. Due to the wealth of algorithms

available, the most common statistical methods can be easily reproduced and at the same time additional variables and new data can be included because of the versatility of these techniques. Using the *lifepool* cohort questionnaire data, we present a methodology based on ML algorithms aimed at exploring the use of risk factors to generate a model for risk stratification. Using the scores obtained from the NCI Breast Cancer Assessment Tool (Gail model) as a baseline, we evaluated the effect of additional variables [mammographic density (MD) and alcohol intake] on risk stratification. **Results:** The use of the Gail model on the *lifepool* cohort suggests that women in the highest quintile (Q5) of Gail scores have a 2.3-fold risk (95% CI 1.7-3.0) of incident invasive BC compared to women in the lowest quintile (Q1). Using Gail scores and MD as inputs for our ML model, the risk in women in the highest quintile increases to 3.1-fold (95% CI 2.3-4.2) compared to the risk in the lowest quintile. Subsequent addition of alcohol intake as an input variable results in an even further increase in risk [Q5 vs Q1: OR=3.9; (95% CI 2.8-5.3)]. We also present how such tools can be used to exploit the full potential of a large dataset using the *lifepool* data as an example. **Conclusions:** ML constitutes a novel approach to dataset exploration. Its use leads to further refinement of population-level stratification by risk. Further advantages with ML are the full use of the distribution of each variable (especially tail ends) and its flexibility to update existing models with emerging evidence and measuring existing risk factors in new ways.

SAT-P09

RELIABILITY OF SUSPICION OF MALIGNANT BREAST MASS IN AUTOMATED BREAST ULTRASOUND (ABUS) EXAMINATION: AUTOMATED VERSUS HANDHELD BREAST ULTRASOUND

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Problem statement: To assess the reliability of automated breast ultrasound (ABUS) examination for suspicious breast mass by comparing it with the handheld breast ultrasound (HHUS) through breast imaging reporting and data system (BI-RADS) category assessment and investigate the factors which affect the category discrepancy. **Materials and methods:** A total of 147 lesions which accessed as BI-RADS 4 and 5 categories on ABUS and followed by ultrasound (US) guided biopsy from August 2017 to December 2018 were included in this study. BI-RADS categories were re-accessed using handheld breast ultrasound (HHUS). The agreement of BI-RADS category was compared by kappa statistics and positive predictive value of each examination was also calculated. Further analysis of mammography (MG) and US findings which were associated with BI-RADS discrepancy was performed using logistic regression. **Results:** The overall agreement between ABUS and HHUS in all the cases was good (80.95%; kappa = 0.62, P.001). The positive predictive value of each category was no significantly different between ABUS and HHUS. Logistic regression analysis revealed that accompanied suspicious microcalcifications, (Odds ratio (OR) 4.63, 95 % C.I 1.828–11.706; P=.001), indistinct margin and irregular shape on US finding (OR 5.83, 4.78 95 % C.I 1.499–22.657, 1.152–19.839; P=.011, .031) were associated with BI-RADS category discrepancy. **Conclusion:** The agreement of BI-RADS category assessment between ABUS and HHUS examination was good in suspicious breast mass. The presence of suspicious microcalcifications on MG, indistinct margin, and irregular shape on US findings were factor affecting the lowering of the suspicion of BI-RADS category on ABUS than that on HHUS.

SAT-P10

SCARLESS LATISSIMUS DORSI FLAP – AN EXCELLENT OPTION FOR LOWER POLE COVER IN IMPLANT BASED RECONSTRUCTION FOR A CHALLENGING SUBSET OF PATIENTS

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Problem statement: The use of Acellular Dermal Matrix (ADM) for lower pole cover in implant based reconstruction has gained popularity in recent years. The risk of prosthetic exposure and wound breakdown is increased in patients who have undergone radiotherapy. Rippling is common in patients with thin skin. Patients who have a wide base width fare poorly with implant reconstruction, requiring a larger volume for better cosmetic outcome. Scarless Latissimus Dorsi(LD) flap provides a robust and excellent lower pole cover in this subset of patients. **Methods:** We present a series of 52 reconstructions in 38 patients, operated by a single oncoplastic Breast surgeon. Indications included gene positive patients undergoing risk reducing mastectomy, immediate and delayed reconstruction for post mastectomy breast cancer patients. Post radiotherapy, patients with base width of more than 14cms were included in this series. Nipple sparing or skin sparing mastectomies were chosen based on patient preference, breast ptosis and extent of disease. All patients were counselled on the benefits and risks of autologous reconstruction versus implant based reconstruction. Morbidity associated with LD reconstruction was explained. Patients received two-staged reconstruction with saline or air expanders. A single incision was used to perform the mastectomy and harvest the flap. Previous incision site was used for post mastectomy patients. The procedure was carried out with patient in supine position. **Results:** One patient was taken back to theatre for control of delayed haemorrhage, likely from a muscular branch to serratus anterior. Superficial skin breakdown was noted in one patient who required dressings for wound healing. There was no threat of prosthetic exposure due to the excellent muscle cover offered by the LD flap. The flap provided additional volume for larger women. ADM related complications were mitigated. Patients were rehabilitated with physiotherapy to decrease shoulder related morbidity. **Conclusion:** The scarless LD is technically simple to master and provides a robust lower pole cover. Its use mitigates ADM related complications while maintaining an excellent cosmetic outcome in this challenging subset of patients requiring implant based breast reconstruction.

SAT-P11

SINGLE PORT LAPAROSCOPIC HARVESTED OMENTAL FLAP FOR IMMEDIATE BREAST RECONSTRUCTION: EXPERIENCE IN SEOUL NATIONAL UNIVERSITY BUNDANG HOSPITAL

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Problem statement: Recent advances in laparoscopic surgery have allowed laparoscopic harvesting of omental flap with reduced breast deformity and donor-site morbidity. We report our experience of single port laparoscopic harvested omental flap (SLHOF) for immediate breast reconstruction. We evaluated the safety and cosmetic outcome of this technique. **Methods:** Between February 2015 and December 2016, 73 patients with malignant neoplasm of breast underwent SLHOF in Seoul National University Bundang Hospital by single surgeon and single gastrointestinal surgeon. A medical chart was reviewed to obtain the information about patients' characteristics, operation method, operation time, length of hospital stay, complications and cosmetic results. Cosmetic outcomes were evaluated by three professionals and classified into excellent, good, fair, or poor. **Results:** The patients were in the age range of 29-59 years with a median follow-up periods of 6 (0-22) months. Fifty-eight (79.5%) patients underwent nipple-sparing mastectomy (NSM), and the others (20.5%) underwent breast conserving surgery (BCS). Mean operation time was 203.5 minutes, and SLHOF reconstruction was performed without conversion to laparotomy or failure of harvesting. There were 6 (8.2%) complications, including pedicle injury, partial skin ischemia, wound complication, bleeding, and umbilical hernia. Success rate of graft survival was 98.6% and the mean length of hospital stay was 6.9 days. The cosmetic results were mostly satisfactory in 91.8% of patients classified as excellent or good. **Conclusion:** Based on our experience, SLHOF is a feasible and safe option for immediate breast reconstruction after NSM or wide BCS with minimal donor-site morbidity and great cosmetic outcomes.

SAT-P12

DOES IMMEDIATE BREAST RECONSTRUCTION LEAD TO A DELAY IN ADJUVANT CHEMOTHERAPY FOR BREAST CANCER? A META-ANALYSIS AND SYSTEMATIC REVIEW

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Problem statement: In a multidisciplinary approach to breast cancer, timely delivery of adjuvant chemotherapy is crucial. With an increasing frequency of immediate breast reconstructions (IBR) following mastectomy (MAS), concerns have arisen regarding its complication rates and effects on time to chemotherapy. **Methods:** 23 original studies were identified using seven electronic databases, hand-searched reference lists, review articles, and conference abstracts. Eligibility criteria included women receiving adjuvant chemotherapy who underwent either mastectomy only or mastectomy and immediate breast reconstruction. The primary outcome was time to chemotherapy (TTC) after surgery and secondary outcome was complication rates. A Random-effects model was used in the analysis. **Results:** 23 studies were included in analysis. Total number of patients was 7163 (IBR: 2891; MAS: 4272). 55% of IBR performed were autologous compared to 54% tissue expander IBR. TTC in IBR was 44.23 days [SD: 15.56] vs MAS: 39.85 days [SD: 15.25] (p0.001). Difference in mean number of patients delayed past 90 days was not significant in IBR: 10.7 vs 10.4 MAS (p=0.90). IBR patients were more likely to have complications compared to the MAS group (OR: 1.82, 95% CI: 1.03-3.20, p=0.04). Median TTC in autologous IBR was 37.67 [SD: 21.46] and median TTC in expander and implant IBR was 35.26 [SD: 20.98]. Different surgical reconstruction methods yielded different mean TTC. Transverse rectus abdominis flaps (TRAM) had a median time of 43.20 days [SD: 4.9], Latissimus Dorsi (LD) flap was 31.65 days [SD: 13.4] and Deep inferior epigastric perforator artery (DIEP) flap was 27.10 [SD: 13.4]. **Conclusion:** We concluded that there is a statistically significant longer time to chemotherapy following IBR of 4.38 days, yet there no difference in delays past 90 days. Therefore, the longer TTC in IBR is unlikely to be of any clinical significance.

SAT-P13

BREAST RECONSTRUCTION IN THE REGIONAL SETTING: 5 YEARS OF EXPERIENCE

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Problem statement: One third of Australia's population lives in a rural or regional area and face significant disadvantaged with respect to education, employment and access to healthcare. Remoteness is a well characterised barrier for provision of universal surgical services in Australia with only 14.6% of surgeons practicing in these regions. This disparity in population and access has resulted in women from rural locations being significantly less likely to receive breast construction surgery than those that reside in urban centres. This presentation documents a case series of 54 women undergoing mastectomy and breast reconstruction within the setting of a regional healthcare service located in Warrnambool, Victoria with aims to analyse patient centric outcomes to critically assess the feasibility of the regionally based breast reconstruction services. **Methods:** This study will utilise a cross sectional retrospective design, examining the outcomes of patients who underwent oncological mastectomy and breast reconstruction in a regional hospital located in Warrnambool, Victoria between the years 2013 to 2018. The outcomes of interest are type of reconstruction, time to reconstruction, complications and the number of clinical reviews during management. **Results:** 54 women underwent either partial or complete reconstruction under the guidance of the plastic surgery unit during the allotted period. 28 women underwent free flap reconstruction with either a DIEP or TRAM flap with 23 completed in the regional 5 being referred to a tertiary centre for reconstruction. 19 opted for implant reconstruction with 3 undergoing immediate DTI with ADM. 4 underwent LD reconstruction (1 immediate). 10 women had reported complications (19%) and 3 women required removal of prostheses and refused further reconstruction. 50% of women at the time of data collection had undergone final revisional procedures. The average number of reviews per woman was 12.2. **Conclusion:** Regionalisation of plastic surgery services

has the potential to be a safe and effective means of increasing accessibility and choices for rural patients eligible for breast reconstruction. Careful patient selection, establishment of multidisciplinary meetings and associations with larger tertiary centres are essential to the future of regional reconstructions.

SAT-P14

CLINICAL AUDIT REDUCTION MAMMOPLASTY FROM 2011 TO 2016: AN ASSESSMENT OF SURGICAL OUTCOME AND WAITING PERIOD IN A TERTIARY PUBLIC HOSPITAL

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Problem statement: Reduction mammoplasties are labour intensive and difficult elective surgeries. They are considered excluded procedures in public tertiary health care facilities, requiring the application of strict patient selection criteria as well as executive approval before surgery. The authors audited reduction mammoplasties performed between 2011 and 2016, with the objective of evaluating the existing criteria in relation to patient outcomes and patient factors that affected surgical outcomes together with waiting time to surgery. **Method:** Records of 46 breast reductions in 26 patients at Sir Charles Gairdner Hospital, Perth performed by three breast oncoplastic surgeons were audited. All cases were performed with either a central pedicle or inferior pedicle Wise pattern reduction technique. Demographics, surgical data, complications, waiting period and patient factors affecting outcomes were recorded. **Results:** Mean patient age was 47 years (30 - 63 years). Mean body mass index (BMI) was 33 kgm2 (24-54 kgm2). The pre-operative brassiere cup sizes ranged between D to J. The mean pre-operative suprasternal notch-to-nipple distance was 35 cm (21 - 45 cm). This was documented in 25 cases (54%). The mean inferior mammary fold-to-nipple distance was 14 cm (9 – 19 cm). This was documented in 29 cases (63%). Mean total resection of breast tissue was 530 g (43g - 1496g). One case was not documented. Minor complications occurred in 11 cases (23%). Major complications occurred in 5 cases (11%). Mean waiting period was 16.4 months (1 month - 48 months). Relative risk of complications increased with smoking. Rate of complications increased in the presence of a BMI greater than 30 kgm2, increase in weight of breast tissue excised and comorbidities. **Conclusion:** This audit suggests that the application of pre-operative criteria is effective in reducing post-operative complications. Modifiable risk factors which could be adjusted pre-surgery include smoking and possibly increased BMI, with non-modifiable risk factors including weight of excised breast tissue and comorbidities. As such, the results of this audit suggest that pre-operative smoking cessation and weight loss where indicated should be encouraged in order to minimise complications and associated costs.

SAT-P15

ACTIVE MONITORING VERSUS IMMEDIATE TREATMENT FOR WOMEN WITH LOCALISED, LOW-RISK DUCTAL CARCINOMA IN SITU: DOES IT MAKE ECONOMIC SENSE?

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Problem statement: Controversy persists about the overdiagnosis of low risk breast cancers identified by breast cancer screening programs. Low risk ductal carcinoma in situ (DCIS) is a non-invasive breast condition with an uncertain risk of invasive progression. Standard management consists of immediate surgical treatment, with or without radiotherapy and adjuvant therapy. Active monitoring of low risk DCIS via annual mammography is proposed as an alternative strategy to immediate surgery to reduce the harm of overdiagnosis, whereby the disease is only treated upon disease progression. However, the costs and benefits of active monitoring are not well researched in the breast cancer setting. **Methods:** A cost-utility analysis was performed to assess the cost-effectiveness of active monitoring versus immediate surgical management in women diagnosed with low grade ductal carcinoma in situ (DCIS). A Markov state transition model was constructed for a theoretical cohort of women aged 50 years and over with low risk DCIS over a lifetime horizon using an annual time cycle. Transition probabilities, costs and utilities were obtained from national mortality and cost data, published meta-analyses, primary data collection of utilities and expert opinion. A national public healthcare perspective was adopted to present the results. Primary outcomes were assessed in terms of cost per quality-adjusted-life-year (cost per QALY). Multiple sensitivity analyses were undertaken to determine effect of parameter uncertainty on results. **Results**: The cumulative costs and QALYs for each age cohort are presented. Active monitoring is a cost-effective strategy for the management of low risk breast cancer in older women with comorbid conditions. Sensitivity analyses revealed the ICERs for all women to be affected by baseline probability of disease progression, age, cost of surgery and utility. **Conclusion**: Conservative management of ductal carcinoma in situ via active monitoring may be cost-effective compared to immediate surgical treatment in a selected cohort of older women with low risk disease.

SAT-P16

TRIPLE NEGATIVE DCIS

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Problem statement: Triple-negative breast cancer(TNBC) has a poor prognosis due to lack of molecular targeted therapies and several studies have established a consensus that TNBC is not a single entity but rather a biologically heterogeneous group. Instead of the gene profiling, TNBC is divided into a further sub-classification by immunohistochemistry using some biomarkers such as AR, EGFR and CK5/6 at daily practice. However, there are not well investigated whether TN ductal carcinoma in situ (DCIS) also have similar molecular profiling or not. **Methods**: We performed immunostaining of AR, EGFR and CK5/6 for 72 TNBC samples obtained from patients at Showa University hospital between January 2010 and December 2016 that including 26 TNDCIS samples and 46 TN invasive ductal carcinoma samples (IDC). We compared the expression rate of AR, EGFR and CK5/6 between DCIS and IDC and also determined nuclear grade (NG) and Ki67 rates in these samples. We identified AR, EGFR and CK5/6 expression positivity if the ne more than 10%. **Results:** Median age at diagnosis was 61 years (47-81) in DCIS and 55.5 years (33-80) in IDC. In IDC samples, 19 cases were received neoadjuvant treatments. There is a one patient developed recurrence (3.8%) in DCIS (median follow-up 39.2 months) and seven patients (15.2%) in IDC (median follow-up 8 months). AR expression was shown with 19 patients in DCIS (19/26; 73%) and 8 (24%) patients in IDC. EGFR or CK5/6 expression were shown with 13 patients (50%) in DCIS and 28 patients (24%) in IDC. Comparing with IDC and DCIS, AR expression were significantly higher in DCIS than IDC. In AR positive DCIS cases, there were more patients who showed low ki67 and lower NG. This group also related with apocrine type morphologically. Lack of AR expression associated with high ki67 level (≧20%), NG3, and comedo necrosis. EGFR or CK5/6 expression cases were less tended to DCIS. (P≦0.05) **Conclusion:** Our data suggested that TNDCIS with AR expression related with low grade DCIS and that might be reluctant to develop the invasive carcinoma.

SAT-P17

RADIO-GUIDED OCCULT LESION LOCALISATION USING IODINE-125 SEEDS (ROLLIS) IS A SAFE ALTERNATIVE TO HOOK-WIRE LOCALISATION (HWL)

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Problem statement: Use of HWL to guide excision of nonpalpable breast cancer has long been the gold standard, but imposes many impracticalities that raise the overall cost of breast cancer treatment. ROLLIS is a novel technique that aims to improve logistical problems, increase patient comfort and decrease re-excision rates. This study compares postoperative complication rates after breast conserving surgery where a nonpalpable lesion was localised using ROLLIS versus HWL. **Methods:** Medical record review of 192 patients (approximately 30% of total participants) from the ROLLIS Randomised Control Trial was performed in three different tertiary hospitals within Perth, Western Australia. Postoperative complications were defined as any deviation from the normal postoperative course occurring up to 6 weeks after surgery. Complications were classified according to the Common Terminology Criteria for Adverse Events from grades I to V. Small seromas and haematomas that did not require intervention (grade I) were not included in the final data analysis as they can be an expected finding after WLE. Noticeable complications observed were drainable seroma/haematoma and surgical site infection. Data was analysed using Fishers exact test and confidence intervals were estimated from a logit regression. **Results:** A total of 96 surgeries were guided by ROLLIS and 96 by HWL. The overall complication rate in the ROLLIS group was 16.6%, with 13.5% being grade II and 3.1% grade III. In the HW group, the total complication rate was 19.8% with 17.7% being grade II and 2.1% grade III. There were no complications graded as IV or V. **Conclusion:** The statistical non-difference in complication numbers means that from a clinical point of view ROLLIS is as safe as HWL especially in terms of significant clinical issues, i.e. higher grade complications supporting the fundamental change in practice and improved outcomes offered by the ROLLIS technique.

Outcome	Technique	Proportion	Std. Err.	Logit CI		p value
				$LCL_{95\%}$	$UCL_{95\%}$	
Overall complications	Hook	0.220	0.0363	0.154	0.305	0.577
	Seed	0.241	0.0567	0.144	0.374	
Drainable seroma	Hook	0.110	0.0269	0.065	0.182	0.589
	Seed	0.056	0.0315	0.018	0.161	
Surgical site infection	Hook	0.136	0.0317	0.084	0.211	1.000
	Seed	0.148	0.0488	0.075	0.272	
Drainable haematoma	Hook	0.034	0.0167	0.013	0.088	1.000
	Seed	0.037	0.0259	0.009	0.139	

SAT-P18

THE USE OF WIRELESS TECHNOLOGY IN BREAST CANCER: HOW TO START YOUR OWN RADIOGUIDED OCCULT LESION LOCALISATION PROGRAMME USING IODINE – 125 SEEDS (ROLLIS)

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Problem statement: Strong interest in replacing hook-wire localisation (HWL) of impalpable breast lesions with ROLLIS has prompted clarification of the requirements for implementation of this novel technique. **Methods:** A survey of Australian centres using ROLLIS was undertaken to document the licensing and regulatory requirements for each state and the seed handling protocols that need to be established for the use of ROLLIS in Australia. **Results:** The ROLLIS procedure is

intuitive and easily learnt. Training of core team members can be achieved through workshop attendance and additional staff trained through peer mentorship. The clinician prescribing the seed is usually a nuclear medicine physician but can also be a specially licensed radiologist. Iodine 125 seeds can be inserted up to 8 days before surgery, allowing independent dedicated patient lists. This provides efficiency in both radiology and theatre scheduling. ROLLIS surgery can be performed first on the theatre list. The ROLLIS kit costs $125 AUD and consists of a pre-loaded I-125 seed (4.5mm by 0.8mm) in an18 gauge needle. There are no extra staffing or equipment requirements. The gamma probe is the same as that used for sentinel node localisation. Additional costs are those of I-125 radiation licensing. All sites where radioactive substances are used require "Registration of Premises" which needs to be updated to reflect the use of ROLLIS. All involved medical staff require licensing from the local Radiation Health branch, which either can be added to an existing Radiation License at no cost, or at a cost between $150 to $800 for a 3 year period for a new applicant, depending on the state. Prior to implementing a ROLLIS Programme, it is important to develop protocols for 1) seed tracking to be able to track the seed at all times and 2) auditing procedures to monitor seed safety. **Conclusions:** Commencing a ROLLIS program requires fulfilling all local licensing and regulatory requirements, training multidisciplinary team members and developing a seed handling protocol. With the current Australian expertise it is easy to introduce and implement a ROLLIS Programme.

SAT-P19

CLINICOPATHOLOGIC PROFILE AND OUTCOMES OF PHYLLODES TUMOR OF THE BREAST: A 10-YEAR REVIEW OF A PHILIPPINE TERTIARY HOSPITAL EXPERIENCE

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Problem statement: Phyllodes tumors are rare breast neoplasms with variable clinicopathologic features and behavior. They have a comparatively higher incidence among Asians. Among Filipino patients, what are the clinicopathologic characteristics and recurrence and survival outcomes of phyllodes tumors? **Methods:** A retrospective review of medical records of female patients with phyllodes tumor of the breast who underwent curative surgery in the University of the Philippines – Philippine General Hospital from January 1, 2005 to December 31, 2014 was performed. **Results:** Two hundred (200) patients were included in the study. Mean age at diagnosis was 46 years (range, 19-71 years) and patients were predominantly pre-menopausal (67.5%). All patients presented with a clinically palpable breast mass, with mean duration of disease at 36 months. Preoperative diagnoses were obtained mostly through core needle biopsy (88%). Preoperatively, 23% (46/200) and 12% (24/200) were diagnosed as fibroepithelial lesion and fibroadenoma, respectively. Majority of patients underwent mastectomy (79.5%) while 16% underwent wide excision, 4% had excision and 0.05% had mastectomy with forequarter amputation. Mean tumor size was 12.73 cm with 56.5% of patients having tumor 10 cm in size. 80% of tumors were classified as benign and 14% as malignant. 25 patients (12.5%) underwent axillary lymphadenectomy due to palpable nodes, of which only 2 had pathologic nodes. Nine patients had involved surgical margins. With a mean of 21 months follow-up, 19 patients had local recurrences and 13 with distant metastases, which were predominantly pulmonary (10/13). Mean time to both local and distant recurrence was 13 months. On multivariate cox regression analysis, predictive factors for local recurrence were type of surgery and tumor size, and for distant metastasis, tumor grade and axillary lymph node involvement. Pathologic axillary lymph node involvement was a significant predictor of over-all survival. **Conclusion:** Phyllodes tumors among Filipinos frequently presented in older females as large tumors requiring mastectomy. They are frequently benign and axillary lymph node involvement rare. Both locoregional and distant recurrences occur, usually within 2 years of surgery. Predictors of recurrence include type of surgery, tumor size, tumor grade and axillary lymph node involvement. **Disclosure of Interest:** None

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SAT-P20

CAN METHYLENE BLUE DYE BE USED AS AN ALTERNATIVE TO PATENT BLUE DYE TO FIND THE SENTINEL LYMPH NODE IN BREAST CANCER SURGERY?

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Problem statement: Sentinel lymph node biopsy (SLNB) is standard care to evaluate axillary involvement in early breast cancer. It has fewer complications than complete lymph node dissection; however, using blue dye in SLNB is controversial. We have evaluated the detection rate and local complications associated with methylene blue dye (MBD) used in SLNB in early breast cancer patients and compared these results to patent blue dye (PBD). **Methods**: In a cohort prospective study, 312 patients with early breast cancer without axillary lymph node involvement were divided into two groups according to dye type. All of the patients received radiotracer and one type of blue dye. We filled out a checklist for the patients that contained demographic data, size of tumor, stage, detection of sentinel lymph node, and complications and then analyzed the data. **Results:** Demographic and histopathologic characteristics were not significantly different in both groups. Mean (standard deviation [SD]) tumor size in all patients was 2.4 (0.8) cm. Detection rate in the MBD group was 77.5% with dye alone and 94.2% with dye and radioisotope; and in the PBD group it was 80.1% and 92.9% respectively (P 0.05). We had blue discoloration of the skin in 23.7% in the PBD and 14.1% in the MBD group (P 0.05) local inflammation was detected in one patient in the PBD and five in the MBD group (P 0.05). Skin necrosis and systemic complications were not observed. **Conclusion:** Methylene blue has an

acceptable detection rate, which may be a good alternative in SLNB. Complication such as blue discoloration of the skin was also lower with MBD. **Key words:** Blue dye, breast cancer, local complication, sentinel lymph node

SAT-P21

MUCINOUS BREAST CARCINOMA. A SINGLE INSTITUTION EXPERIENCE

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Problem statement: Mucinous breast carcinoma is a rare histological subtype of breast cancer that accounts for 0.5-3% of all breast cancers. The tumour is most commonly seen in perimenopausal and postmenopausal patients and it is histologically characterized by the presence of nests of tumor cells floating in extracellular mucin lakes. The aim of this study is to describe our experience in the diagnostic evaluation and management of patients with mucinous breast cancer who were treated at our institution. **Material and methods:** We retrospectively reviewed the medical records of patients who were diagnosed with mucinous breast cancer at the Breast Cancer Surgery Unit of 401 Army General Hospital, over a 13-year- period. Clinical, mammographic, sonographic and pathological findings were analyzed. **Results:** From January 2005 to April 2018, eighteen pathologically proven cases of mucinous breast cancer were identified. The mean age of the patients was 64.6 years (range 22 to 88 years). Tumors ranged in size from 0.9 to 5.7 cm (mean 1.9cm). Imaging findings were suggestive of malignancy in 17 (94%) patients. Eleven (61%) patients underwent mastectomy and 7 (39%) patients underwent breast-conserving surgery. Pure mucinous carcinoma was detected in 11 (61%) patients and a mixed subtype in the remaining 7 (39%) patients. No distant metastases were identified. The proportions of ER and PR positivity were 95% and 88% respectively. Her 2 overexpression was seen in 2 (11%) of the cases and neuroendocrine differentiation was observed in 6 (33%) of the cases. Metastatic axillary lymphadenopathy was detected in 4 (22%) patients, all in the mixed subtype group. Four (22%) patients received adjuvant chemotherapy, 7 (39%) patients received adjuvant radiotherapy and 17 (94%) patients received hormonal therapy. The median follow-up was 53 months (range 3-156 months). The 5-year overall survival was 94%. **Conclusion:** Mucinous carcinoma of the breast is a rare subtype of breast cancer associated with a favourable prognosis compared to other adenocarcinomas. The tumor classically demonstrates ER and PR positivity and HER2 negativity. The incidence of axillary lymphadenopathy is very low especially in the pure histological subtype. Mixed mucinous carcinoma has been associated with a more aggressive biologic behaviour.

SAT-P22

OPTIMAL TREATMENT MODALITY OF PSEUDOANGIOMATOUS STROMAL HYPERPLASIA OF THE BREAST

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Problem statement: Pseudoangiomatous stromal hyperplasia (PASH) is a benign mesenchymal proliferative lesion of the breast. The pathogenesis, clinical manifestation and optimal treatment remains unclear, because of rare entity. This study aimed to indicate the appropriate management for individual patients with PASH. **Methods:** We reviewed the records of 66 patients with PASH confirmed by core needle biopsy or surgical excision between 2000 and 2016, at the Severance Hospital. Clinicopathologic data including baseline patient characteristics, radiologic finding, diagnosis, management strategies were analyzed. **Result:** Median age was 40 years (range, 14 – 61). The image finding of PASH on ultrasonogram or mammogram were nonspecific. Core needle biopsy (CNB) was performed in 61 of 66 patients, which confirmed a diagnosis of PASH in 39 subjects. (59.1%) The diagnosis of atypical proliferative lesion arose directly from PASH were seen in 3 patients, which diagnosis others on CNB. The progression rate were 16.6% after initial treatment. The lesion size on ultrasonogram, palpable mass enlargement, diagnosis other than PASH on CNB showed association with the progression. **Conclusion:** The CNB were not adequate modality to diagnose the PASH. But there were no malignant or premalignant lesion that diagnosed PASH on CNB after surgical excision. PASH does not require surgery to determine the diagnosis of occult malignancy. Surgical excision were necessary in patients with large (≥ 3cm) or growing PASH.

SAT-P23

LITERATURE REVIEW AND THREE CASE REPORTS OF BREAST FIBROMATOSIS: A MASQUERADE OF BREAST CANCER

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Problem statement: Breast fibromatosis (BF) or extra-abdominal desmoid tumour in the breast is a rare condition, which often presents as a palpable lump suspicious for breast cancer. Majority of reported cases have been sporadic however it has been associated with Gardner's syndrome, Familial Adenomatous Polyposis, trauma, prior surgery and silicone implants. Although benign in nature, this tumour can be locally aggressive with significant recurrence rates of up to 29%. **Methods:** We present three case reports of BF and a literature review of this topic. An electronic search of 6 databases was conducted- Medline, Cochrane Library, PubMed, Embase, Scopus and CINAHL. **Results:** A 68-year-old female presents with a four-month history of unilateral mastalgia and a palpable lump with localised tethering. She underwent a wide local excision of a 23mm BF and required subsequent chest wall excision with mesh repair due to involvement of her chest wall. There has

been no recurrence to date. A 48-year-old female presents with a two-week history of a firm mobile breast lump on a background of previous bilateral breast reduction. She underwent a wide local excision of 35mm BF. Further surgery was offered to resect the involved pectoralis major however the patient has opted for observation at this stage. A 33-year-old female presents with a unilateral incidental breast lesion. Hookwire guided local excision confirmed 6mm focus of BF. There have been approximately 200 case reports of BF reported in the literature with females accounting for the vast majority of cases. The most common presentation was a unilateral breast lump with core biopsy showing presence of spindle cells. Definitive diagnosis and management required surgical excision in all cases. Whilst complete surgical excision of BF with negative margins is recommended, there is significant risk of local recurrence even with adequate margins. The use of adjuvant radiotherapy has been controversial in BF. Tamoxifen has been used in recurrent and unresected BF. **Conclusion:** BF is a rare condition however can often masquerade as breast cancer. Whilst lacking metastatic potential, BF can be locally aggressive and negative resection margins are recommended. The prevention and management of local recurrence can be challenging.

SAT-P24

A NOVEL PREDICTIVE TOOL FOR HEAVY AXILLARY NODAL INVOLVEMENT IN SENTINEL NODE POSITIVE BREAST CANCER

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Problem statement: The sentinel lymph node (SLN) is the only site of metastasis in up to 70% of early breast cancer patients who progress onto a completion axillary lymph node dissection (cALND). There is an emerging body of evidence that demonstrates the safety of avoiding cALND in minimally involved axillae. However, a subset of patients with extensive nodal involvement (defined in this work as 4 or more axillary lymph nodes) will still benefit from cALND to achieve optimal local control. We developed a novel clinical calculator which predicts the likelihood of heavy axillary nodal involvement, which is also the first such calculator derived from an Australian population. **Methods:** All female patients with positive SLNs in the time period 1999-2013 were identified from the Westmead Breast Cancer Institute database. Male patients and those undergoing neoadjuvant therapy were excluded. Primary tumour and nodal characteristics were gathered from pathology reports. Chi-squared and t-tests identified significant clinical variables associated with heavy nodal involvement, and subsequent multivariate logistic regression, and backwards elimination was used to develop a predictive model (P0.05). Accuracy of the model was determined by the area under the receiver operator characteristic curve (AUC). Internal validation of the formula demonstrated equivalent accuracy. **Results:** After applying the selection criteria to the 2,776 patients who had sentinel lymph node biopsy within the study period, 453 qualified for the study development dataset. Based on the data from this subset, the largest invasive tumour size (odds ratio (OR) 1.03, 95%confidence interval (CI) 1.02- 1.05, P=0.0005) and total sentinel node metastasis size (OR 1.11, 95%CI:1.08-1.14, P=0.0005) were the two significant variables predicting heavy nodal involvement. The AUC was 0.85. Internal validation was concordant (AUC = 0.82, 95%CI: .69 to .96). **Conclusion:** The very high predictive value of this novel tool is comparable to international models. We hope this tool will provide a decisional aid for clinicians to risk stratify sentinel node positive patients who are likely to benefit from further cALND. **Disclosure of Interest**: Nil.

SAT-P25

MAGNETIC TRACER USE FOR SENTINEL NODE BIOPSY: INTRODUCTION TO AN AUSTRALASIAN PILOT STUDY

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Problem statement: The standard technique for sentinel node biopsy in breast cancer uses radioisotope and/or Patent Blue. A new technique using magnetic tracer has been reported by European institutions to show non-inferiority1 as well as simpler handling processes, i.e. injection on the day of surgery by the operating surgeon. The purpose of our study is to assess feasibility and reliability of this new technique within an Australasian context. **Methods:** A single centre pilot study has commenced trialling the magnetic technique. The magnetic tracer (Sienna ®) is used in addition to radioisotope and Patent Blue. Intra-operatively, a handheld magnetic localisation probe (SentiMag ®) is used first to identify and excise sentinel lymph nodes; these are also checked for response to gamma probe and Patent Blue. The standard technique is then performed to excise any further sentinel lymph nodes that have not been detected by the magnetic technique. The identification rate of the two techniques will be compared. Qualitative data is being collected regarding the learning curve for individual surgeons. **Results:** Our poster will report on our results to date. **Conclusion**: There are some disadvantages and risks associated with the standard tracers currently used for sentinel node biopsy in breast cancer. If the use of magnetic tracer is both feasible and reliable within an Australasian context, it could be used as an alternative. This may improve patient management particularly for institutions without easy access to nuclear medicine facilities.

References: •Teshome M, Wei C, Hunt K, Thompson A, Rodriguez K, Mittendorf EA. Use of a magnetic tracer for sentinel lymph node detection in early-stage breast cancer patients: A meta-analysis. Ann Surg Oncol 2016; 23:1508-1514 •

SAT-P26

IMPACT OF THE AMERICAN COLLEGE OF SURGEONS ONCOLOGY GROUP Z0011 TRIAL ON THE MANAGEMENT OF POSITIVE AXILLARY NODES IN THE AUSTRALIAN SETTING

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Problem statement: In recent decades, there has been de-escalation in the surgical management of metastatic axillary sentinel lymph nodes (SLN) in early breast cancer patients. The Z0011 study was a practice changing trial where women with 1-2 metastatic SLN having a lumpectomy with whole breast radiotherapy do not benefit from a completion axillary lymph node dissection (ALND) in terms of survival or loco-regional recurrence. The aim of this study was to investigate the impact of the Z0011 study on the management of metastatic SLN at the Sydney Adventist Hospital, Australia. **Methods:** We retrospectively reviewed all invasive breast cancer cases treated at our institution over a 10-year period from 1 January 2008 to 31 December 2017. In selecting patients for analysis, we applied the Z0011 inclusion criteria, specifically patients with a clinical T1-T2 N0 cancer who had a lumpectomy followed by breast radiotherapy with 1-2 positive axillary SLN. Patients were divided into two groups by the date of surgery, before and after 1 January 2011, when the Z0011 study was published. The clinicopathological features of each patient and whether the patient had an ALND were recorded and the two groups compared. **Results:** Over the 10-year period, 2007 patients with invasive breast cancer were identified from our breast cancer database. After applying the Z0011 inclusion criteria, there were a total of 237 patients (11.8%). 73 patients had surgery before 1 January 2011, and 158 who had surgery from 1 January 2011. A comparison of the clinicopathological features of these two patient groups is summarised in Table 1. Before 2011 the rate of proceeding to an ALND following a positive sentinel node was 78.1% (57/73), and from 2011 it was 43.7% (69/158), (p 0.0001). This is a significant change in clinical practice with a 44% drop in the rate of ALND. **Conclusion:** Our study has demonstrated that at an Australian institutional level, the Z0011 trial has impacted on the surgical management of the axilla in breast cancer patients with a significant reduction in the rate of ALND in patients who fulfill the Z0011 criteria. **Disclosure of Interest:** None

SAT-P27

OUTCOMES OF RIB RESECTION FOR BREAST TUMORS EXTENDING TO THE CHEST WALL

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Problem statement: Breast cancer is the leading cancer for both sexes in the Philippines and ranks first among cancer-related mortalities in women, while phyllodes tumors account for less than one percent of all breast neoplasms. Surgery with adequate margins for non-metastatic disease is the mainstay of treatment followed by adjuvant therapies. Some of these tumors grow with chest wall involvement which are often interpreted as a sign of rapidly progressing disease no longer amenable to cure, such that undergoing resection with acceptable margins is deemed as a mutilating procedure with severe complications. While other studies support chest wall resection as a safe procedure with low associated morbidity and mortality. This evaluates whether an aggressive procedure is still warranted as determined by the outcomes. **Methods:** Retrospective review of electronic records of patients who underwent rib resection for primary or recurrent breast tumors at the Philippine General Hospital from January 2008 to December 2017. **Results:** Sixteen female patients with median age of 51 years underwent enbloc rib resection for breast tumors. Sixty-three percent (10/16) had phyllodes tumor (2 recurrences) and 37% had invasive breast carcinoma (3 recurrences). All breast cancer patients received either neoadjuvant or adjuvant chemotherapy, with one receiving post-radiation therapy for recurrent disease. Patients underwent radical mastectomy or wide excision with enbloc rib resection (44%) with or without concomitant partial sternectomy (56%). Prolene mesh was used in 31% of patients, while 18% utilized both mesh and methylmetacrylate neo-rib. Coverage was combined latissimus dorsi or thoracoabdominal flap with split-thickness skin grafting (94%), with one case closed primarily. Morbidities of minimal graft loss, flap necrosis and mesh extrusion were observed in 4 patients (25%) within the first week until 10 months, while mortality occurred in 2 patients due to myocardial infarction and sepsis. Only two patients (12.5%) were noted to have recurrence and metastases (pulmonary, bone) after 3-19 months. **Conclusion:** Rib resection of breast tumors with chest wall involvement is best approached with a multidisciplinary effort and provides safe local control and palliation for non-metastatic disease. Longer follow-up and larger sample is recommended to corroborate the results. **Disclosure of interest:** None

SAT-P28

DISCUSSION ON INDICATIONS OF INTERNAL MAMMARY SENTINEL LYMPH NODE BIOPSY IN BREAST CANCER IN THE ERA OF PRECISON MEDICINE

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Problem statement: The internal mammary sentinel lymph node biopsy (IM-SLNB) is a minimally invasive method to assess internal mammary lymph node (IMLN) metastatic status for breast cancer. However, the IM-SLNB indication has not yet been defined in current guidelines, and it is still referred to axillary-SLNB and is performed only in clinically axilla lymph node (ALN) negative (cN0) patients, which result in low clinical benefit and limit clinical application. In this study, the impact of IM-SLNB on the diagnostic and prognostic

value were analyzed both in cN0 and clinically ALN positive (cN+) patients. **Methods:** Between June 2013 and September 2017, a total of 616 patients with biopsy-proven invasive breast cancer (cN0 490 and cN+ 126) were enrolled in this prospective study. The radiotracer was injected with our modified technique (periareolar intraparenchymal, high volume and ultrasonographic guidance). IM-SLNB was performed for IMLN visualized patients and clinical benefits were accessed according to current guidelines. **Results:** cN0: IM-SLNB was performed in 240 patients with IMLN visualized (visualization rate: 69.2%, 339/490). The IMLN metastases rate was 8.8%, systemic and radiotherapy treatment were changed only in 1.3% and 8.8%. However, for the patients with positive ALN and medial tumor, staging and radiotherapy treatment were changed both in 31.3%. cN+: IM-SLNB was performed in all patients with IMLN visualized (visualization rate: 74.6%, 94/126), and the IMLN metastasis rate was 38.3%. 94 patients who underwent IM-SLNB received more accurate staging, among which 36 IMLN positive patients received internal mammary radiotherapy (IMRT), the other 58 IMLN negative patients avoided IMRT. **Conclusion:** IM-SLNB should be routinely performed in cN+ patients and selectively in cN0 patients (IMLN high metastatic risk: positive ALN and medial tumor). Based on this IM-SLNB indication above, more accurate IMRT indication and individualized radiotherapy strategies could be put forward. **Disclosure of Interest**: None Declared

SAT-P29

A PROSPECTIVE COMPARATIVE DOUBLE ARM STUDY OF SLNB WITH ICG BASED TECHNIQUE VERSUS COMBINATION DUAL DYE TECHNIQUE FOR EARLY BREAST CANCER- FIRST INDIAN STUDY

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Problem statement: Metastatic involvement of the sentinel lymph node (SLN) represents a key prognostic factor in breast cancer. The dual technique of radio-colloid (technetium-99m) and blue dye is the gold standard in sentinel lymph node biopsy (SLNB). An alternative to this is the new emerging technique of using near-infrared (NIR) fluorescence imaging with indocyanine green (ICG). The objective of the present study was to compare ICG imaging vs the conventional method in detection of sentinel lymph nodes in early breast cancer. **Methods:** The study included 50 patients with early breast cancer who underwent the SLNB procedure using technetium-99m, methylene blue (MB) dye, and ICG. All SLNs that were removed during surgery were labelled as hot, blue or/and fluorescent and sent for pathological examination. The mapping characteristics, the detection rate of SLNs and positive SLNs, and the number of SLNs of ICG, dual dye and ICG + dual dye were compared. Injection safety of ICG and MB was evaluated. **Results:** Sentinel Lymph Node was identified in all 50 cases (Identification rate = 100%). Total Sentinel lymph nodes removed was 164 (Mean=3). The identification rate with the combined technique was 95.7%, with blue dye alone 93.6% and with radioisotope alone 96.8% whereas with ICG alone was 97.8%. Positive nodes (46.6%) were identified by all the three methods. Both ICG and conventional method had a sensitivity of 100%, Positive predictive value 100%, Accuracy 100%. None of the patients had acute allergic reaction or skin necrosis, 2 patients had temporary skin staining due to methylene blue injection. **Conclusion:** SLNB by ICG is technically feasible, accurate and comparable to conventional method (Radiocolloid & Methylene blue) in detection of Sentinel lymph nodes in Early Breast Cancer. It has the advantages of real-time visualization and wider availability. ICG has the potential to replace Tc99m as a tracer for SLNB, with the advantage of lower costs and avoidance of radioactivity.

SAT-P30

THE 'TWINKLE' ARTEFACT - A NOVEL METHOD OF CLIP IDENTIFICATION TO FACILITATE TARGETED AXILLARY SURGERY FOLLOWING NEOADJUVANT CHEMOTHERAPY IN BREAST CANCER PATIENTS

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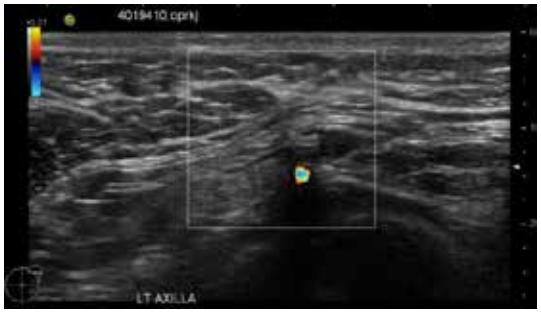
Problem statement: Neoadjuvant chemotherapy(NAC) is an accepted therapeutic approach for women with locally advanced breast cancer(LABC). Axillary status is an essential prognostic indicator in such cases. When there is complete pathologic response for previously detected axillary metastases, axillary dissection may confer no additional survival benefit but subject patients to risk of significant morbidity. A targeted surgical approach which confirms post NAC axillary status and yet spares the complications of an axillary clearance has been introduced as an appropriate treatment strategy. Pre-treatment clipping of proven metastatic lymph nodes followed by their identification post NAC for surgical removal has been recently reported. However, pre-operative clip localisation can be challenging with size diminution of the node. Clips sited in the axilla may not be accessible through stereotactic targeting and standard markers are not easily visible with sonography. We postulated that the combined use of a particular marker clip, ULTRACOR®TWIRL™ (Bard, Inc), and specific ultrasound settings for its identification enables consistent localisation of the clip preoperatively without the application of radio-isotope. Feasibility of such a strategy was therefore preliminarily assessed in this case study. **Methods:** Patients who were diagnosed to have LABC and underwent treatment over a six-month period from September 2017 to March 2018 and had the recently available Twirl marker clip placed in biopsy-proven metastatic axillary lymph nodes were included in this study. Having completed NAC, preoperative sonographic hookwire localisation of the clip was performed on the day of surgery. The 'twinkle' artefact was elicited via colour Doppler ultrasound. Hookwire localisation of the clip and node were then performed. Following resection, ultrasound confirmation of clip and node excision was done with the 'twinkle' artefact also demonstrated within the specimen. **Results:** Three patients who completed treatment for LABC were included in this preliminary study. All three had identification and resection of clip aided by the 'twinkle` artefact. **Conclusion:** The 'twinkle' artefact is a novel and useful aid in identifying the Twirl™ clip marking a lymph node in the post-NAC setting. Its application provides clarity of identification and has the potential to

be used intraoperatively, sparing the need for radioactive seed placement and preoperative localisation.



SAT-P31

INDOCYANINE GREEN FLUORESCENCE VERSUS BLUE DYE OR RADIOISOTOPE FOR DETECTION RATE OF SENTINEL LYMPH NODE BIOPSY AND NODES REMOVED IN BREAST CANCER: A SYSTEMATIC REVIEW AND META-ANALYSIS

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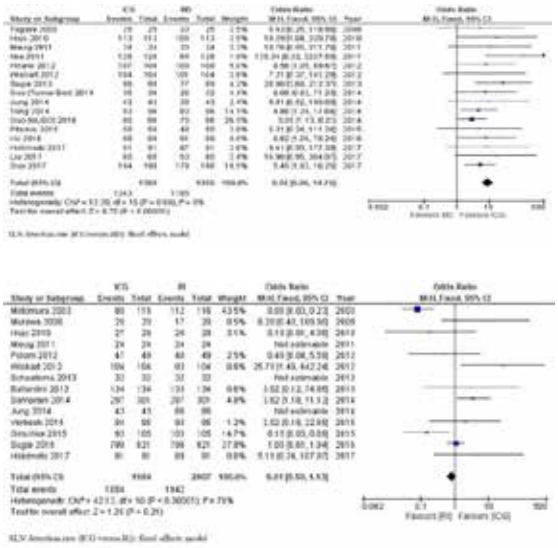
Problem statement: Either blue dye (BD) or radioisotope (RI) is mainly used at surgery time of sentinel lymph node biopsy (SLNB). Unlike the BD, by emitting a stronger fluorescence signal, RI seems to decrease false-negative rate of SLNB; however, its availability of lymphoscintigraphy and difficulty in preoperative injection cause surgeons to use only BD as a standard method. Currently, indocyanine green (ICG) fluorescence SLNB method (ICG-SLNB) is increasingly used as an alternative to the conventional mapping methods in many centers. This systematic review focused on comparing the detection rate of SLNB or number of sentinel lymph nodes (SLNs) removed using ICG with the conventional BD or RI method. **Methods:** We searched all relevant studies published between January 2000 and November 2017. All electronic data were extracted for evaluation of sentinel lymph node (SLN) detection rate, number of SLNs removed per patient, and detection rate of tumor positive SLNB. **Results:** A total of 25 studies including 3,603 patients were retrieved and met selection criteria. There was a statistically significant difference in SLN detection rate between ICG and BD method in terms of both fixed effects (OR, 9.38; 95% CI, 5.96-14.47) and random effects model (OR, 6.77; 95% CI, 4.20-10.91). The statistical relevance notwithstanding, there was no significant difference in that of another method (between ICG and RI) in both fixed effects (OR, 0.81; 95% CI, 0.59-1.13) and random effects model (OR, 1.08; 95% CI, 0.37-3.11). The number of SLNs removed per patient were 2.33 (range, 1.46-5.4), 1.93 (range, 1.0-3.64), and 1.67 (range, 1.35-2.08) for ICG, BD, and RI, respectively. Only in 4 studies, the tumor positive rates in SLNB could be analyzed (ICG, 12 to 20.7%; BD, 13.1 to 21.4%; RI, 12 to 16%).



Conclusion: ICG-SLNB could be of significance as either an additional method or even an alternative to conventional method for axillary node mapping in patients with breast cancer. **Abbreviations:** Indocyanine green, ICG; blue dye, BD; radioisotope, RI; sentinel lymph node, SLN; sentinel lymph node biopsy, SLNB; **Conflict of interest statement:** The authors declare no conflicts of interest.

SAT-P32

BREAST CANCER ANATOMIC STAGING WITH RISK SCORE IS SIMPLE TO USE AND EFFECTIVE

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Problem statement: The AJCC 8th prognostic system has been in place since 1st January 2018 but is complex due to multiple permutations. A Californian group proposed a simpler system using the anatomic system with risk score, 1 point each for grade 3, HER-2 and ER negativity. We aim to evaluate this risk score system with our database of Asian breast cancer patients, and to compare it against the AJCC 8th prognostic system. **Methods:** Patients diagnosed with breast cancer stage I-IV between 2006 and 2012 were identified in the Singhealth Joint Breast Cancer Registry. There is a high receipt of endocrine therapy, chemotherapy and Herceptin for those indicated. Five-year breast cancer specific survival (BCSS) was calculated for each anatomic stage according to risk score and compared with the new AJCC 8th prognostic system. **Results:** 6799 patients were analysed. The median follow up is 62.0 (range 2-205) months. Within each TNM stage, there were significant differences in survival as separated by the risk scores ranging from 0 to 3 in all sub-stages except for stage IB and IIIB. This is likely due to small sample size in stage IB (n=112) and IIIB (n=93). Only 4.24% (288) of patients were ER- but PR+. After multivariate analysis, the HR for negative ER is 1.53 (1.26-1.85), negative HER2 1.46 (1.23-1.73) and grade 3 1.79 (1.51-2.13). After multivariate analysis, the risk

score is not inferior to the prognostic stage (concordance index 0.85 vs 0.85, AIC 10761.32 vs 10806.23). **Conclusion:** This simple risk score which incorporates biomarkers into the anatomic system provides accurate predictive stratification and can be a good everyday tool for clinicians and patients. **Disclosure of interest:** None.

SAT-P33

PERFORATOR FLAPS FOR BREAST CONSERVING SURGERY: RESULTS FROM AN EARLY SERIES

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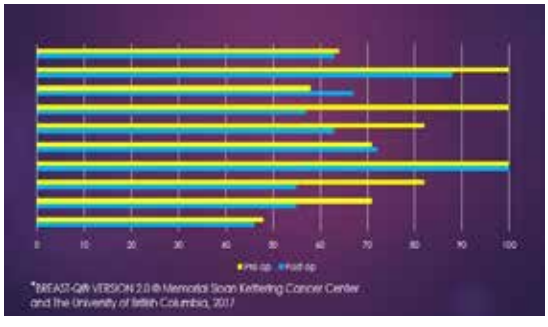
Problem statement: To evaluate our early experience with significant volume resection in breast conservation using intercostal perforator flaps. **Methods:** A retrospective audit of patients selected for LICAP (Lateral Intercostal Artery Perforator) and AICAP (Anterior Intercostal Artery Perforator) flaps between 2016 and 2018 was performed. Ethics approval and patient consents were sought. Patients were selected for surgery based on patient's choice, comorbidities, smoking history and tumour size/location in relation to breast size. In these procedures, preoperative Doppler ultrasound was used to localise perforators. Adequacy of excision was confirmed using intraoperative imaging. Perforators were dissected with the aid of headlights/loupes, Lone Star retractors, fine instruments and bipolar diathermy. An experienced assistant is essential. Patient photographs and pre/ post-operative Breast Q scores were collected. Kroll scores by the operating and blinded surgeon were compared. Patient reported outcome scores on overall satisfaction, physical, psych-social and sexual wellbeing are currently being analysed to identify patient, tumour, breast and treatment related factors that may have impacted on aesthetics and QOL. Surgeons' scores will be compared to those of the patients. **Results:** 10 patients, ranging from age 34 to 71years. LICAP flaps suited 3 patients with tumours in the lateral quadrants. AICAP flaps were performed on 7 patients for tumours at the 6 o-c position. The ratio of excision to breast volume was 20-40%. Adjuvant radiotherapy was complete in 50% of patients and in progress for the remaining at the time of completing questionnaires. Preliminary results have shown high patient related outcome scores. Surgeons' Kroll scores ranged from good to excellent.



Conclusion: Perforator flaps are a new technique, increasingly adopted by breast surgeons for volume replacement in breast conserving surgery. Our experience with this early series has demonstrated high patient and surgeon satisfaction. We plan to prospectively add to this series and follow up our patients long term. Comparing our early results to those at five and ten years after surgery and adjuvant radiotherapy will enable us to identify factors/techniques that can be modified and refined to further improve results.

SAT-P34

IMAGING RESULTS FOLLOWING PARTIAL BREAST RECONSTRUCTION WITH CHEST WALL PERFORATOR FLAPS – A QUALITATIVE ANALYSIS WHEN COMPARED TO STANDARD BREAST CONSERVING SURGERY

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Problem statement: Partial breast reconstruction using chest wall perforator flaps (CWPF) allows for excision of tumours in the outer quadrant of the breast in women with small to moderate non-ptotic breasts. However, there is limited data available in the literature regarding long term follow-up and the impact of CWPF on subsequent surveillance mammogram interpretation and recall rates. To examine these further, we performed a retrospective audit comparing the qualitative features of mammograms after CWPF with those after wide local excision (WLE). **Methods:** This is a retrospective analysis of a prospectively maintained database on all patients who underwent breast conserving surgery for cancer in the outer quadrants by a single surgeon in a tertiary referral centre. We included all consecutive patients who underwent either CWPF or WLE between January 2013 and December 2014. Qualitative analysis of the first post-operative mammograms was performed after review by 2 blinded radiologists. **Results:** After excluding patients who were not suitable due to unavailability of post-operative imaging, 36 patients were included in the study, 18 in each arm. The CWPF group were younger and had larger tumour size anticipated on pre-operative imaging which correlated with larger specimen excised. There was a tendency to larger size of invasive disease in the CWPF. Both groups were comparable with respect to tumour pathological characteristics. Comparing the first post-operative mammograms, both groups were similar in features reported such as calcifications, fat necrosis, volume loss and radiotherapy changes. During the follow-up period (median 4 years), 138 surveillance mammograms were performed. One patient was recalled for further imaging in the CWPF group. **Conclusion:** Patients who underwent partial breast reconstruction using CWPF had similar features on post-operative surveillance mammogram when compared to that post-WLE. There was no significant difference in the need for additional diagnostic imaging and biopsy rates were similar in both the groups. **Disclosure of interest:** None

SAT-P35

PREOPERATIVE 3D PRINTING TO AID PLANNING IN COMPLEX BREAST PROCEDURES

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Problem statement: This is a concept study to assess feasibility of utilising a 3D printed model as an adjunct in preoperative planning of technically complex breast procedures. **Methods:** Patients included in the study were all pathologically confirmed breast cancers 2cm in size with no skin involvement. All were planned to undergo a complex breast procedure including: Level 1 or 2 oncoplastic breast conserving technique, anterior or lateral intercostals perforator flap reconstruction or nipple/skin sparing mastectomy with implant reconstruction. MRI was used for all cases to assess the size, shape and location of the tumour and guide the 3D printing of the breast model. **Results:** The pilot aim was to recruit 10 patients. As of date we have successfully recruited and printed 3D breast models for 5 patients. Two surgeons graded the use of routine preoperative imaging with MRI and the use of 3D printed breast model using a questionnaire to aid with preoperative planning. Data was collated and the results will be analysed when all the participants are recruited. Most importantly our results so far confirm the feasibility of printing 3D breast models in a streamlined fashion without causing any delay to the patient's treatment. **Conclusion:** We have demonstrated in this pilot study that it is indeed technically feasible to integrate 3D printing into pre operative assessment with the use of MRI in an oncoplastic breast practice. Our goal moving forward is to assess whether using a 3D printed breast model can impact surgical decision making in complex breast conserving surgery and breast reconstruction.

SAT-P36

DOES ONCOPLASTIC SURGERY HAVE A ROLE IN OPTIMISING BREAST CONSERVATION TREATMENT IN AN ASIAN CONTEXT?

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Problem statement: Breast Conservation Treatment(BCT) is an accepted therapeutic option for early breast cancer and may also be performed for appropriately selected patients with larger tumours. Accreditation standards set a target BCT rate of 50% for early breast cancer.[1] Several Asian centres report BCT rates below this standard.[2-5] Certain operative procedures collectively termed "oncoplastic breast surgery" (OBS) techniques have been developed over the last two decades to increase BCT utilisation without compromising aesthetic outcomes. An algorithm taking into consideration tumour size and breast volume has been proposed. Using this algorithm, patients having size 36B or smaller breast volume, as do a significant proportion of Asian women, and tumours larger than 2 cm will likely require surgery beyond a simple wide local excision.[6] The degree to which more complex OBS procedures adds to BCT eligibility in an Asian context is unclear. This study was therefore performed to evaluate the role of OBS in optimising BCT rates. **Methods:** A retrospective study was performed for all patients who underwent surgical treatment for breast cancer at the authors' centre between January 2009 and December 2011. Those who had tumour sizes at presentation which rendered successful BCT doubtful were referred for neoadjuvant medical treatment for downstaging. Preoperative localisation of lesions or radio-opaque clips were performed where required. Surgery was performed using simple wide local excision.[6] Rates of successful BCT, defined as the attainment of negative margins and an acceptable cosmetic result, were evaluated. **Results:** One hundred and sixty patients underwent surgical treatment, of which 120(75%) had unifocal cancers and 40 had multiple ipsilateral breast cancers. The mean age of the cohort was 46 years and the majority (142 women) were of Asian ethnicity. (88.8%) Mean tumour size was 21.6mm. Successful BCT was achieved in 85.7% of patients. Five-year overall survival was 96.7%. **Conclusion:** In this cohort of patients, simple wide local excisions with direct parenchymal repair were performed for all patients to achieve BCT rates of 85.7% with acceptable cosmesis. Based on data from this study, oncoplastic techniques involving volume replacement, therapeutic mastopexy and therapeutic reduction mammoplasty may have a limited role in further increasing BCT rates.

SAT-P37

EFFICACY AND SAFETY OF TRANEXAMIC ACID IN ONCOPLASTIC BREAST SURGERY: A SYSTEMATIC LITERATURE REVIEW

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Problem statement: Patients undergoing breast and axillary cancer surgery often experience postoperative seroma requiring protracted hospital admissions and interventions. Tranexamic acid (TXA), has been demonstrated to reduce haemorrhage. This review aimed to assess the evidence and efficacy of TXA use in patients undergoing breast and axillary surgery in reducing postoperative bleeding and seroma formation. **Methods:** An electronic literature search was conducted in July 2018 (MEDLINE, EMBASE, Ovid, Cochrane library and ClinicalTrials.gov). All randomised controlled trials (RCTs) comparing effectiveness of TXA in reducing bleeding and seroma formation and related comorbidities in patients undergoing breast and axillary surgery were identified. The quality of studies was assessed using the Cochrane Collaborations 'Risk of bias' tool. Primary outcome measure was reduction of post-operative bleeding or seroma formation. **Results:** The search yielded 2 relevant RCTs (190 patients). Additionally, two large ongoing RCTs were identified from which data was not yet available. Both trials had control groups randomly assigned to placebo. One of the trials included only bilateral mastectomy patients, thus randomising each breast to control or TXA. There were a total of 109 patients randomised to TXA and 111 randomised to control. Differences between the two studies included drug delivery (intravenous vs topical application), procedure (axillary dissection with breast surgery vs only breast reduction), population group (cancerous vs non-cancer) and outcome measures (day 14 seroma formation vs day 1 drain output). Both studies demonstrated safe TXA use with no significant difference in post-operative adverse events. With topical application, drain fluid production was lower by 39% (p=0.038) at 24 hours, and with intravenous TXA mean total drainage volume was 34% (p=0.001) reduced.

Seroma rates reported in one trial were non-significantly decreased in the TXA group (27 versus 37%, p=0.2). **Conclusion:** This review found a paucity of high quality data of the efficacy of TXA in breast surgery. Future studies require standardised reporting of post-operative complications and seroma formation. Additionally, TXA associated adverse event reporting in cancer patients is required to evaluate its safety. Our institution is conducting a prospective multi-institutional study to assess the optimal TXA dosage and route of delivery. **No financial disclosures**

SAT-P38

PRACTICE PATTERNS OF ANTIBIOTIC PROPHYLAXIS IN ONCOPLASTIC BREAST SURGERY: A NATIONWIDE AUSTRALIAN SURVEY

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Problem statement: There is no consensus in the literature on the recommended usage or duration of antibiotic prophylaxis following breast reconstructive surgery. A nationwide survey will be conducted to assess the practice patterns of perioperative antibiotic prophylaxis in breast cancer among Australian surgeons. **Methods** A national online survey is to be distributed enquiring about antibiotic use for common breast procedures. The questionnaire will include surgeon demographics, antibiotic prescription characteristics and use in common procedures. **Results:** Data reported will include the number of surgeons utilising routine pre-operative antibiotics, key surgical procedures which see the use of routine antibiotics, prescriber habits in the context of surgical site infection risk factors and antibiotic duration. **Conclusion:** The study will allow for an examination of prescriber attitudes and opinions compared to current guidelines.

Table 1. Survey Outline

Question	Answer
What state do you practice in?	Choose one: QLD, NSW, VIC, ACT, TAS, SA, NT, WA
Percent of practice devoted to breast surgery?	Choose one: 0-20% | 21-40% | 41-60% | 61-80% | 81-100%
Years in practice?	Choose one: <1 | 1-2 | 3-5 | 6-10 | 11-15 | >15
Yearly breast surgery case load?	Choose one: <25 | 25-49 | 50-74 | 75-99 | >100
Indicate in which cases you administer prophylactic antibiotic (from the following list):	Choose any: -Breast conserving surgery -Wire localised excision -Mastectomy -Axillary lymph node dissection -Sentinel lymph node biopsy -Flap Reconstruction -Implant Reconstruction -Benign lesion excision
What prophylactic antibiotic do you use?	Open answer
If you use prophylactic antibiotic, how do you administer it?	Choose one: -Single pre-operative fixed-dose -Single preoperative fixed dose followed by a second fixed dose if the surgery is prolonged -Single preoperative fixed dose and one or more postoperative fixed doses for >24 hours
If you do not administer routine prophylactic antibiotic, in what cases do you use it?	Choose any: Older age | Obesity | Smoking | Diabetes | Active skin disease | Neoadjuvant therapy | Use of drains | Surgical re-intervention

SAT-P39

ACCELERATED PARTIAL BREAST IRRADIATION (APBI) WITH EXTRACRANIAL STEREOTACTIC RADIOTHERAPY (SBRT) AND EXACTRAC ADAPTIVE GATING IN LOW-RISK EARLY BREAST CANCER: 5-YEAR FOLLOW-UP

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Problem statement: To evaluate the feasibility and security of APBI with SBRT with intrafraction movement control to allow the diminishment of unnecessary irradiation of healthy surrounding tissue. **Material and Methods:** Patients diagnosed with infiltrating ductal breast cancer (IDBC), T1-T2, G1-G2, N0, 60 years old, luminal A, undergoing conservative surgery with free margins and negative axillary study were selected for APBI. Before irradiation, a fiducial marker adjacent to the surgical bed was placed and external infrared markers were located on the patient´s surface for the planning CT. PTV included the surgical bed with 5mm expansion in all directions. Multisegmented forward-IMRT was planned using the iPlan Net® (BrainLab AG, Munich, Germany) planning system in order to administer 30Gy/5fractions every other day. The treatment was delivered in a selected phase of the respiratory cycle guided by daily IGRT with intrafraction movement control by ExacTrac Adaptive Gating System (Novalis-BrainLab AG, Munich, Germany) which allows the quantifying of the movement of the breast and the surgical bed during the respiratory cycle thanks to a correlation between movement of the internal and external fiducial markers. Toxicity has been evaluated using CTCAE 4.0 criteria. **Results:** Between 2013-2015, 23 patients with a mean age of 74 years old (63-90), mean tumor size of 1.2cm and mean time since surgery of 43 days were included in this prospective trial. With a median follow-up of 41 months (8-58), there was one local recurrence at 25.1 months, who was satisfactorily treated with surgery. Local relapse-free survival was 95.7% and overall-survival and distance relapse-free survival was 100%. Dosimetric analysis evidenced that organs at risk received doses well below the tolerance limits (V9 ipsilateral lung: median 2.2%, heart in left breast treatments: V1.5Gy, median 5.3%). Skin acute toxicity G1: 95.6%; no late toxicities were reported. The cosmesis was excellent in 100% of the cases. **Conclusions:** APBI is a feasible technique, safe and effective in terms of local control in patients diagnosed with very good IDBC prognosis, with a good toxicity profile and excellent cosmetic result. However, a greater follow-up and larger sample size are required to give more power to the described results.

SAT-P40

POST-MASTECTOMY HYPOFRACTIONATED LOCOREGIONAL IRRADIATION (HLRI)

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Problem statement: To evaluate acute toxicity and local control in patients with mastectomy treated with HLRI. **Material and Methods:** From January 2015 to December 2016, 77 patients (p) with a median age of 49 years (range 31-84) were included. AJCC clinical staging: stage 0: 5p (6.5%), stage IA: 8p (10.4%), stage IB: 8p (10.4%), stage IIA: 9p (11.7%), stage IIB: 27p (35.1%), stage IIIA: 13p (16.9%), stage IIIB: 5p (6.5%) and stage IV: 2p (2.6). Molecular subtype: Luminal A: 24p (31.2%), Luminal B: 33p (42.9%), Her2-Enriched: 9p (11.7%) and triple-negative: 11p (14.3%). Histology: 56p (72.7%) infiltrating ductal carcinoma, 16p (20.8%) infiltrating lobular carcinoma and 5p ductal in-situ carcinoma (6.5%). All patients underwent mastectomy, 34p (44.2%) had sentinel lymph-node biopsy and 55p (71.4%) had axillary lymph-node dissection. Radiotherapy comprises thoracic-wall and regional nodes levels I-IV irradiation including internal mammary chain irradiation in 10p (40.5Gy@2.7Gy/day). Systemic therapy: 68p (88.3%) chemotherapy either neoadjuvant (34p) or adjuvant (34p) and 57p (74%) hormone therapy (tamoxifen 31p, aromatase inhibitors 26p). **Results:** With a median follow up of 22 months (range 6-33), tumor recurrence were as follows: local: 1p (1.3%), regional: 2p (2.6%), distant: 6p (7.8%). Acute toxicity: dermitis 73p (94.8%) G1: 44p (57.1%), G2: 28p (36.4%), G3: 1p (1.3%); arm lymphedema 3p (3.9%) G1: 2p (2.6%) and G2: 1p (1.3%). **Conclusions:** Post-mastectomy HLRI is feasible and well tolerated. Longer follow-up is necessary to confirm observed outcomes.

SAT-P41

HYPOFRACTIONATED RADIOTHERAPY IN LOCALLY ADVANCED BREAST CANCER AFTER CONSERVATIVE SURGERY

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Problem statement: To evaluate acute toxicity and local control with a hypofractionated accelerated radiotherapy schedule for locally advanced breast cancer (LABC) after conservative surgery. **Material and Methods:** From January 2015 to December 2016, 63p with a median age of 52 years (range 36-82) were included. AJCC stages: 23p (36.5%) IB, 22p (34.9%) IIA, 16p (25.4%) IIB and 2p (3.2%) IIIA. Histology: 59p (93.7%) infiltrating ductal carcinoma, 4p (6.3%) infiltrating lobular carcinoma. Molecular subtypes: Luminal A 28p (44.4%), Luminal B 24p (38.1%), Her2-Enriched 2p (3.2%), triple-negative 9p (14.3%). All patients underwent breast-conserving surgery; 37p (58.l7%) had sentinel-node biopsy and 43p (68.3%) axillary lymph-node clearance. Radiotherapy comprises whole breast and regional nodes levels I-IV irradiation (40.5Gy@2.7Gy/day) with concomitant boost (48Gy@3.2Gy/day in 59p and 51Gy@3.4 Gy/day in 3p). Systemic therapy: 48p (76.2%) chemotherapy either neoadjuvant (17p, 27%) or adjuvant (31p, 49.2%) and 51p (81%) hormone therapy (tamoxifen 21p, aromatase inhibitors 30p). **Results:** With a median follow-up of 23 months (range 5-32), all patients are alive and free from local, regional or distant recurrence. Acute toxicity: dermitis 61p (98.2%) grade 1=3p (4.8%), grade 2=1p (1.6%); arm lymphedema in 4p (6.3%): grade 1=3p (4.8%) and grade 2=1p (1.6%); pneumonitis grade 1=2p (3.2%): No toxicities above grade 3 or superior were observed. **Conclusions:** Hypofractionated irradiation for breast and regional nodes in LABC is feasible and well tolerated. Longer follow-up is needed in order to address the observed outcomes.

SAT-P42

HYPOFRACTIONATED ACCELERATED RADIOTHERAPY FOR DUCTAL CARCINOMA IN SITU (DCIS)

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Problem statement: To evaluate acute toxicity and local control in patients with DCIS treated with hypofractionated accelerated radiotherapy. **Material and Methods:** From January 2015 to December 2016, 49p with a median age of 53 years (range 35-79) were included. Location: left breast 25p (51%), right breast 22p (49%) and synchronous bilateral DCIS in 2p. Histological grade: G1: 11p (22.4%), G2: 23 p (46.5%) and G3: 15p (30.8%). All patients underwent breast-conserving surgery and 29p (59.2%) had sentinel lymph-node biopsy and afterwards received whole breast irradiation with concomitant boost to the tumor bed. Prescription doses were 40.5Gy and 48Gy respectively, delivered in 15 fractions of 2.7 Gy/day. Forty-eight p (98%) were treated with 3D techniques and 1p (2%) with IMRT. A total of 36p (73.5%) received hormone therapy: tamoxifen 31p (63.3%), aromatase inhibitors 5p (10.2%). **Results:** With a median follow-up of 19 months (range 2-28), all patients are alive and free from local recurrence. Skin toxicity was the only presented acute side effect in 45p (91.8%): G1 in 35p (71.4%) and G2 in 10p (20.4%). No other toxicities were observed. **Conclusions:** Hypofractionated irradiation in DCIS is feasible and well tolerated. Longer follow-up is needed in order to confirm these outcomes.

SAT-P43

INTRAOPERATIVE RADIOTHERAPY FOR EARLY STAGE BREAST CANCER AT THE MONASH CANCER CENTRE – FEASIBILITY AND ACUTE TOXICITY

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Problem statement: That intraoperative radiotherapy (IORT) using a single dose of low energy X-rays delivered at the time of breast conservation surgery is a feasible, safe and effective form of accelerated partial breast radiotherapy in the management of early breast cancer, as an alternate approach to whole breast irradiation. **Methods:** We recruited 30 eligible patients aged between 42 and 76 between March and August 2017 with early stage breast cancer to a single arm prospective clinical trial of IORT using the Xoft Axxent eBx system at the time of Breast Conserving Surgery for Early Stage Breast Cancer. At the time of the lumpectomy a single dose of 20Gy was delivered to the surface of the tumour cavity using high dose low energy x-rays (50 KeV) via a miniaturized electronic source and balloon applicator. Patients were followed up post-operatively for pathology review and at 1, 6 and 12 months. **Results:** 30 eligible patients with early breast cancer were recruited to the trial with a median follow up of 187 days (35-376). 1 patient was excluded intra-operatively due to an inadequate balloon to skin surface distance. 2/30 (7%) patients were treated with bilateral disease and thus a total of 32 tumours were treated with IORT. 3/32 (9%) tumours were in situ disease, 25/32 (78%) were T1, 2/32 (6%) were T2 and 2/32 (6%) had no measurable disease at the time of pathological assessment of the lumpectomy specimen. There were 38 adverse events, 29 Grade 1, 6 Grade 2 and 3 Grade 3. The Grade 3 events were cyst aspiration, hematoma formation and surgical debridement. Cosmetic outcomes were excellent or good in 28/30 (93%) patients. 1/30 (3%) patients received additional external beam treatment after IORT on the basis of post-operative pathological assessment. There were no recurrences or deaths recorded. **Conclusion:** IORT at the time of breast conserving surgery for early stage breast cancer is a feasible and safe treatment approach with an excellent cosmetic and acute toxicity profile. Further follow-up is required to assess for rates of local recurrence, distant recurrence, overall survival and late toxicity.

SAT-P44

DEVELOPMENT OF A TREATMENT TECHNIQUE FOR THE AEROFORM™ TISSUE EXPANDER BREAST IMPLANT SYSTEM – A SINGLE DEPARTMENT EXPERIENCE

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Problem statement: Air tissue expander systems offer breast cancer patients a number of advantages but present an unusual challenge when treating patients post-mastectomy with external beam radiation therapy. The primary aim of this study was to describe the planning protocol developed for external beam locoregional radiation therapy (RT) in post-mastectomy patients with in situ air expanders, and to quantify the effect of the AeroForm™ (AirXpanders®, Palo Alto, California) implant on target volumes and treatment factors. Secondary aims included an evaluation of clinical outcomes including acute side-effects. **Methods:** This is a single institution review of seven female patients treated between March 2016 and June 2018. All patients received a standard prescription of 5000cGy in 25 treatments delivered five times per week. Specific density overrides were applied to critical structures in order to achieve the most accurate dose distribution. Acute side-effects were assessed at weeks two, four and six during radiation therapy, and patients were followed-up at week six after the final treatment. **Results:** A three-dimensional (3D) conformal radiation therapy (CRT) tangential wedged-pair technique, with additional contouring and density overrides applied to critical structures, is suitable for patients with breast air tissue expanders. 5mm – 10mm of bolus over the entire chest wall throughout treatment enhances treatment delivery accuracy to the superficial skin layers without increasing early acute skin reactions. **Conclusions:** It is feasible to plan radiation therapy in patients with air tissue expanders requiring chest wall (with or without nodes) irradiation using an appropriate planning technique and density overrides to critical structures. The addition of bolus to the entire chest wall increases dose distribution accuracy. Early clinical results show that this treatment method is reproducible, has acceptable early toxicity, and results in similar acute toxicity to those seen in patients without air expanders. Our air expander protocol will continue to be adapted as additional prospective data is collected.

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SAT-P45

EVALUATION OF SETUP ACCURACY FOR PRONE BREAST RADIOTHERAPY WITH A 3D SURFACE IMAGING SYSTEM

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Problem statement: A three dimensional optical surface imaging system (3D-OSIS) was developed to limit the imaging dose to patients using cone beam computer tomography (CBCT) or portal image and to improve the accuracy during radiotherapy by using the patient`s body surface. The 3D-OSIS showed that the detection of flat surface such as the thorax or the pelvis was less accurate than the head and neck region. Therefore, we tested silicon cups as markers and evaluated the applicability and technical performance of a 3D-OSIS for prone breast radiotherapy. **Method:** We attached three silicon cups on the dorsal surface of a female atom phantom (ATOM 702-D, CIRS Inc, VA, USA) that was in prone position. We evaluated reproducibility with silicon cups and compared accuracy with or without silicon cups as markers. For the reproducibility test, we scanned an object every 15 second, 11 times with 3D-OSIS (Catalyst™, Uppsala, Sweden) and registered the differences. For the accuracy test, we positioned the phantom on the couch and manually moved the couch in the X, Y, and Z axes to a predetermined value. These manually operated values were compared with the values measured with 3D-OSIS. This process was repeated 21 times and the difference of the measured values was compared according to the presence or absence of markers. **Results:** The reproducibility test showed good stability with the following mean variations over all test shifts in lateral, longitudinal and vertical directions: 0.15 ± 0.22 mm, 0.47 ± 0.13 mm and 0.34 ± 0.19 mm, respectively.

And the accuracy test showed the following mean deviations between manually applied shifts and the measured shifts: 0.23 ± 0.1 mm, 0.044 ± 0.39 mm and 0.18 ± 0.1 mm in the lateral, longitudinal and vertical directions with markers, respectively, 0.44 ± 0.33 mm, 0.97 ± 0.55 mm, and 0.63 ± 0.55 mm in the same directions without markers, respectively. **Conclusion:** The 3D-OSIS provided good reproducibility with a phantom. The use of the silicon cups as marker was better in accuracy. The 3D-OSIS with silicon cups holds potential to ensure precise patient setup and reduces CBCT frequency in prone breast radiotherapy.

SAT-P46

DEEP INSPIRATION BREATH HOLD COMPLIANCE RATE AT SIMULATION AT GENESISCARE VICTORIA

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Problem statement: Deep Inspiration Breath Hold (DIBH) is used to reduce cardiac dose in left sided breast radiotherapy. The rate that patients would be expected to be able to perform DIBH at simulation (compliance rate) is not published in product information from Elekta Active Breathing Coordinator (ABC) or Varian Real-time Position Management (RPM). Genesiscare Victoria has used DIBH since 2015. An audit of the compliance rate at six centres, from June – December 2016, showed 200 patients attempted DIBH at simulation, 160 were successful: 80% compliance rate (range 66.6% - 100% at the different centres). We now have eight centres; one uses the ABC system and the rest use RPM. The aim of this study was to determine the 2018 DIBH compliance rates and if there is a difference between centres and between ABC and RPM. The secondary aim was to identify factors that can be used to improve overall compliance.
Methods: A retrospective audit of all left sided breast patients treated from January - April 2018.
Data collected for each of the eight centres:

- Total number of patients treated for left sided breast cancer
- Number of patients who attempted DIBH at simulation
- Number of patients successful
- Any reasons recorded for non-compliance
- Patients factors: age, respiratory and cognitive comorbidities, language barriers

Staff performing the simulation were interviewed and completed a questionnaire to describe the standard processes at each centre.
Results:

Centre	Number Attempted	Number Successful	Compliance Rate (%)
All centres	158	135	85
1	27	23	85
2	10	9	90
3	14	9	64
4	15	13	87
5	39	33	84
6	25	20	80
7 (ABC)	15	15	100
8	13	13	100

Conclusion: 100% compliance rate at two centres; 86% average compliance rate. No significant difference between ABC and RPM systems. Coaching prior to coming to simulation is provided for all patients by a nurse at centre 2. A DIBH brochure is given to most patients prior to simulation, except at centre 3. A description of the standard processes used at the centres will be provided.

SAT-P47

COMPARING EVIDENCE-BASED RECOMMENDATIONS FOR RADIOTHERAPY USE AGAINST ROUTINE PRACTICE IN BREAST CANCER

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Problem Statement: This population-based study compares the actual versus optimal rates of Radiotherapy Utilisation (RTU) in breast cancer patients and identifies factors that predict under-use and the impact of that on patient outcomes. **Methods:** All cases of breast cancer diagnosed in NSW between 2009-2011 were identified from NSW Cancer Registry and linked with a data extract from all public and private radiation oncology departments. Overall actual RTU rate was calculated for all cases. Cases with complete TNM stage and treatment details available from the Clinical Cancer Registry were further analysed, and RTU rates for the groups of patients with specific evidence-based recommendations were subsequently calculated. The deficit in radiotherapy use for each indication was used to estimate an overall impact on local control (LC) and overall survival (OS) and these were compared to the recently published estimates of radiotherapy benefits in the setting of optimal use. OS and LC shortfall in person number - defined as the number of people not achieving LC and OS benefit due to RT underutilization - was then able to be calculated. Univariate and multivariate analyses were performed to identify factors that contributed to the reduced RTU. **Results:** 13,193 patients were diagnosed with breast cancer in NSW during the study period. Overall RTU rate was 59% compared to the reported optimal rate of 87%. The 5-year OS person-shortfall was 87 and 5-year LC shortfall was 652. Younger age, overseas birth, living in major cities, closeness to treatment centres, living in higher disadvantaged areas, greater T size and regional spread were all identified as factors predicting greater radiotherapy utilisation on univariate analysis. Age, distance to the nearest RT centre and tumour size remained as having significant influence on radiotherapy utilisation adjusted for other variables in the multivariate model. **Conclusion:** Under-use of recommended radiotherapy for breast cancer has been identified in this study with a predicted negative impact on patient outcomes. Patient age and distance to treatment centre were predictors for sub-optimal RTU. These findings would assist in health service planning for radiotherapy and call for a better adherence to treatment guidelines.

SAT-P48

UTILITY OF DEEP INSPIRATORY BREATH HOLD (DIBH) IN THE RADIOTHERAPEUTIC MANAGEMENT OF RIGHT SIDED BREAST CANCER

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Problem statement: Regional node radiation (RNI) improves metastasis and disease-free survival for women undergoing radiotherapy but concern remain that this benefit may be offset by a corresponding increase in late RT toxicity. Deep inspiratory breath hold (DIBH) has been shown to mitigate complications for left-sided RT patients, but few data exist to appraise whether DIBH may also have benefit for right-sided breast cancer. This study assesses if DIBH for women undergoing comprehensive right sided breast RT results in dose sparing for organs-at-risk compared to free breathing (FB). **Methods:** FB and DIBH computed tomography (CT) planning scans were obtained for 20 adjuvant left breast patients undergoing radiotherapy between January 2016 and November 2017. All patients were retrospectively dual planned for right breast RT (10 breast only and 10 breast with regional nodes) in both the FB and DIBH positions with a target prescription dose of 40Gy in 15 fractions. Field in field tangential techniques were used for breast only plans and Intensity Modulated techniques were used for regional nodal coverage. Contouring of target volume and organs at risk were performed according to international guidelines and consensus atlases. DIBH and FB treatment plans were compared using the Wilcoxon signed-rank test. **Results:** For right breast only RT patients, DIBH conferred no benefit compared to FB in reducing dose to the heart, total lung or ipsilateral lung. However, for right breast RT with regional nodal radiation benefit was observed with maximum heart dose reduced from 27.8Gy to 21.5 Gy (p=0.02) and average volume of ipsilateral lung receiving 20Gy or more from reduced from 32.6% to 23.35 % (p=0.02). Due to anatomic laterality, left anterior descending artery (LAD) mean dose was not reduced in either group using DIBH. However, for both groups DIBH reduced the average volume of liver receiving 20Gy or more from 16.77cc to 1.29cc (p=0.002).
Conclusion: Given the observed reduction in cardiac, lung and liver doses, DIBH should be considered for patients undergoing right breast RT with regional nodal radiation. **Authors disclose no conflict of interest.**

SAT-P49

PARADIGMS IN BREAST CANCER MANAGEMENT IN PREVIOUSLY AUGMENTED BREASTS: TIME FOR A CHANGE?

Kartik Vasan, Deborah Cheung
Breast & Endocrine Surgery, Nepean Blue Mountains Local Health District, Australia

Problem statement: Breast augmentation using implants have gained popularity over the years. The incidence of breast cancer in this group of patients are indifferent to the general population.1 As these patients have less breast tissue, breast cancers are often found relatively close to the pectoralis major muscle or the implant capsule. It is common practice for these patients to undergo a mastectomy and immediate one or two-stage implant reconstruction as these patients are comfortable with having had an implant previously. However, a mastectomy and reconstruction will render patients an insensate breast. In selected cases, some patients prefer to have breast conservation surgery and postoperative radiotherapy. **Method:** We present 2 cases where patients presented with early breast cancer. The tumours were not in contact with the skin, implant capsule or the pectoralis major fascia. Clear excision margins were ensured. Both patients wished to have breast conservation surgery over mastectomy and reconstruction. Both were alerted to the possibility of capsular contracture and the potential to require mastectomy and reconstruction. A physical therapy program was prescribed for the long term on a daily basis to patients aiming specifically at stretching the radiated soft tissues and pectoralis major muscles to counteract the effects of radiation fibrosis.2 A systematic literature review was conducted to evaluate complication rates and survival rates of breast cancer patients with prior augmentation receiving radiotherapy. **Results:** Patients were monitored on a yearly basis. At 5-year follow-up, there was no cancer recurrence. Patients reported excellent satisfaction and functional outcomes. A review of the literature yields older studies favouring removal of implants prior to breast irradiation. However, newer data utilising more modern techniques of Accelerated partial breast intensity-modulated radiotherapy found low complication rates and equivalent survival. **Conclusion:** Breast conservation surgery and radiotherapy is a possible option for selected patients with previous breast augmentation. Further trials in this subgroup are required with advent of newer radiotherapy techniques. **References:**

• Deapen D. Breast implants and breast cancer: a review of incidence, detection, mortality, and survival. Plast Reconstr Surg-2007.
• Bleicher RJ et al. Beauty and the beast: management of breast cancer after plastic surgery. Ann Surg-2008.

SAT-P50

NETRIN-1 EXPRESSION IN BREAST CANCER

Shyr-Ming Sheen-Chen[1], Ching-Hua Tsai[2], Yueh-Wei Liu[2], Chao-Cheng Huang[3]
[1]*Surgery, Taipei Tzu Chi Hospital, Taipei, Taiwan*
[2]*Surgery, Kaohsiung Chang Gung Memorial Hospital, Kaohsiung, Taiwan,* [3]*Pathology, Kaohsiung Chang Gung Memorial Hospital, Kaohsiung, Taiwan*

Problem statement: Breast cancer is a collection of molecularly and clinically distinct neoplastic disease. Recent research has shown the information regarding gene expression in breast cancer could be beneficial in the designing of an optimal treatment plan and may also

provide with prognostic information. The creation of tissue microarrays (TMA) allows for the rapid immunohistochemical analysis of thousands of tissue samples in parallel with minimal damage to the original blocks. This study is designed with the application of tissue microarray (TMA) to analyze the Netrin-1 status in breast cancer with the hope of elucidating the possible relationship between Netrin-1expressions and breast cancer. **Methods:** Archival tissue specimens from 106 patients with primary invasive breast cancer were analyzed for Netrin-1 expression by immunhistochemical staining with TMA.Results were compared to clinicopathologic data by multivariate analysis. **Results:** TNM stage was significantly related to the overall 5-year survival rate. Nevertheless, Netrin-1 expression has no significant relationship to overall five-year survival. **Conclusion:** Immunohistochemical staining with TMA was convenient and feasible for analyzing Netrin-1 expression status in breast cancer. Our preliminary results show that Netrin-1 expression had no significant prognostic value in breast cancer.

Multivariate analysis for overall 5-yerar survival rate

Variable	**p value**	**OR**	**95% CI**	
Age (>-50 vs. <50)	.641	1.2	0.5	2.7
TNM stage (I, II, III, IV)	.000	11.1	5.1	24.2
ER status (postive vs. negative)	.077	0.5	0.2	1.1
Histologic grading (I, 2, 3)	.252	1.4	0.8	2.4
Netrin-1 (1, 2, 3)	.111	1.6	0.9	2.8

OR: Odds ratio; CI: confidence interval

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Reference: 1. XGEVA® (denosumab) Approved Product Information, available at www.amgen.com.au/Xgeva.PI

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INDUSTRY PROGRAM

Friday, October 12, 2018

07:00-08:30 **Morning Industry Symposium:**
Practice-changing new perspectives on genomic profiling in the management of HR+, HER2- Early Breast Cancer
Supported by Genomic Health

Hall A

Breakfast will be served prior to the session

Chairpersons: **Bruce Mann,** *Australia*
Elgene Lim, *Australia*

07:15-07:20 Introduction
Elgene Lim, *Australia*

07:20-07:50 Level 1 Evidence on the Oncotype DX Breast Recurrence Score® Assay and Implications for Clinical Practice
Virginia Kaklamani, *USA*

07:50-08:25 Panel Discussion/Case Studies

Chairs:
Bruce Mann, *Australia*
Elgene Lim, *Australia*

Panelists:
Virginia Kaklamani, *USA*
Richard de Boer, *Australia*
Cindy Mak, *Australia*

07:00-08:30 **Morning Industry Symposium:**
CDK4/6 inhibitors in advanced breast cancer: The future is now
Supported by Pfizer

Hall B

Breakfast will be served prior to the session

Chairpersons: **Arlene Chan,** *Australia*
Catherine Oakman, *Australia*

07:15-07:45 The science behind CDK4/6 inhibition
Javier Cortes, *Spain*

07:45-08:15 **DEBATE:** That all 1st line stage 4 ER+/HER2-patients should have a CDK4/6 inhibitor
07:45 **Yes: Rebecca Dent,** *Singapore*
07:55 **No: Nick Murray,** *Australia*
08:05 Discussion

08:15-08:30 Discussion

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Please review the full Product Information before prescribing, **including the boxed warning in the Product Information,** available from Roche Products Pty Limited (www.roche-australia.com/productinfo/kadcyla) or at the trade display.

PBS Information: Section 100 Authority Required for the treatment of HER2-positive metastatic breast cancer. Refer to PBS Schedule for full authority information.

AEs=adverse events; HER2+=human epidermal growth factor receptor 2-positive; mBC=metastatic breast cancer; OS=overall survival. References: 1. KADCYLA® (trastuzumab emtansine) Approved Product Information. Available at www.roche-australia.com/productinfo/kadcyla. 2. Verma S *et al. N Engl J Med* 2012;367:1783–91. 3. Diéras V *et al. Lancet Oncol* 2017;18:732–42. 4. Junttila TT *et al. Breast Cancer Res Treat* 2011;128:347–56. 5. Burris HA. *Am Soc Clin Oncol* 2012;Educational book:159–61. 6. LoRusso PM *et al. Clin Cancer Res* 2011;17:6437–47. 7. Welslau M *et al. Cancer* 2014;120:642–51. 8. Krop IE *et al. Lancet Oncol* 2017;18:743–54. 9. Diéras V *et al.* Poster Presentation at SABCS 2015; P4-14-01. Roche Products Pty Limited, ABN 70 000 132 865, Level 8, 30–34 Hickson Road, Sydney, NSW, 2000. Medical Information: 1800 233 950. ®Registered trademark EMVKAD0134 MN37563311 Prepared July18

11:30-12:30 **Industry Symposium:**
Clinical controversies in HER2+ early breast cancer
Supported by Roche

Hall B

Chairpersons: **Fran Boyle,** *Australia*
Catherine Shannon, *Australia*

11:30-11:45 Neo-adjuvant therapy in HER2 positive disease
Javier Cortes, *Spain*

11:45-12:15	**DEBATE:** That all high-risk adjuvant HER2 patients should receive dual antibody therapy
11:45	**Yes: Javier Cortes,** *Spain*
11:55	**No: Nicholas Wilcken,** *Australia*
12:05	Discussion

12:15-12:30 Case studies: HER2 +ve neo-adjuvant and adjuvant setting
Moderator: Fran Boyle, *Australia*

Javier Cortes, *Spain*
Richard de Boer, *Australia*
Nicholas Wilcken, *Australia*

13:30-14:30 **Industry Symposium:**
New paradigms in the treatment of HR+HER2- mBC: CDK4/6 inhibitors and beyond
Supported by Novartis

Hall B

Chairpersons: **Richard de Boer,** *Australia*
Belinda Yeo, *Australia*

13:30-13:35 Welcome
Richard de Boer, *Australia*
Belinda Yeo, *Australia*

13:35-13:55 Role of CDK4/6 Inhibitors in overcoming endocrine resistance: Are they all the same?
Stephen Johnston, *UK*

13:55-14:10 CDK4/6 Inhibitors: The Australian experience, and what to do after progression?
Elgene Lim, *Australia*

14:10-14:30 Case studies and panel discussion

PBS Information: Authority Required. Refer to the PBS Schedule for full Authority information.

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ABBREVIATIONS: CDK, cyclin dependent kinase; HR+, hormone receptor positive; HER-, human epidermal growth factor receptor negative.

REFERENCES: 1. KISQALI Product Information. **2.** Pharmaceutical Benefits Scheme. Available at: www.pbs.gov.au. Accessed July 2018.

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NOVARTIS

Saturday, October 13, 2018

07:00-08:30 **Morning Industry Symposium:**
Old favourites, new strategies: Chemotherapy and the treatment of MBC
Supported by Eisai

Hall B

Breakfast will be served prior to the session

Chairpersons: **Nicole McCarthy,** *Australia*
Chris Hart, *Australia*

07:15-07:45 Chemotherapy in MBC – solo player or partner of choice?
Javier Cortes, *Spain*

07:45-08:15 In the era of CDK inhibition and targeted agents for MBC, does chemotherapy still have a place?
Linda Vahdat, *USA*

08:15-08:30 Discussion

07:00-08:30 **Morning Industry Symposium:**
Attractive techniques for localisation and staging: Tools for everyone
Supported by EBOS and Magseed

Hall C

Breakfast will be served prior to the session

Chairperson: **Bruce Mann,** *Australia*

07:15-07:35 Magtrace for sentinel node localisation
Alastair Thompson, *USA*

07:35-08:00 Targeted Axillary Dissection with Magseed
Abigail Caudle, *USA*

08:00-08:25 Discussion

11:30-13:00 **Industry Symposium:**
Key issues around bone health
Supported by Amgen

Hall B

Chairperson: **Nicholas Wilcken,** *Australia*

11:30-12:00 **DEBATE:** That a bone targeted agent should be routine for post-menopausal HR+ve patients
11:30 **Yes: Arlene Chan,** *Australia*
11:40 **No: Catherine Shannon,** *Australia*
11:50 Discussion

12:00-12:20 Bone agents for stage 4 disease: How long, for how often and at what cost?
Richard de Boer, *Australia*

12:20-12:40 The mythology of Vitamin D in disease
Ego Seeman, *Australia*

12:40-13:00 Discussion

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Hologic, Inc.

www.hologic.com

Hologic, Inc. is a leading developer, manufacturer and supplier of premium diagnostic products, medical imaging systems and surgical products. The Company's core business units focus on diagnostics, breast health, GYN surgical, and skeletal health. With a unified suite of technologies and a robust research and development program, Hologic is dedicated to The Science of Sure.

Icon Cancer Centre

www.iconcancercentre.com.au

Icon has a long history of delivering exceptional cancer care for the Australian community. Icon Cancer Centres are a combination of day oncology hospitals, radiation oncology centres and comprehensive facilities that bring both day oncology and radiation disciplines together under one roof. Our 26 centres across metropolitan and regional Australia are supported by the latest technology and a network of over 150 highly experienced oncologists. With pharmacy and chemotherapy compounding functions operating as part of Icon, our team work as one to ensure a seamless and safe approach to care every step of the way.

With 30 years of experience in private cancer care, we understand our patients. We walk them through their cancer diagnosis and treatment with knowledge and compassion.

Integra

www.integralife.com

Integra, a world leader in medical technology, is dedicated to limiting uncertainty for surgeons, so they can concentrate on providing the best patient care. Integra offers innovative solutions in orthopaedic extremity surgery, neurosurgery, and reconstructive and general surgery. Integra is a leader in neurosurgery, offering a broad portfolio of implants, devices, instruments and systems used in neurosurgery, neuromonitoring, neurotrauma, and related critical care. Other Integra products include peripheral nerve protection and repair, and wound repair.

Life Healthcare

www.lifehealthcare.com.au

At LifeHealthcare we bring Australian and New Zealand healthcare professionals innovative medical devices by partnering with world class companies who share our vision for innovation and making a real difference to people's lives. Together with our partners all over the world, our people work closely with healthcare professionals to ensure the highest standards of patient care.

Lilly Oncology

www.lillyoncology.com

Lilly Oncology is dedicated to advancing treatment and addressing the unmet needs of people living with cancer, and for more than five decades, we have been delivering innovative solutions. Currently, we are committed to creating a broad portfolio, with research focused in three areas: Tumour cell signalling, Microenvironment, and Immuno-oncology

We are exploring different combinations and sequencing of therapy so we can help advance treatment for more people.

Our hope is to optimize cancer patient outcomes and find meaningful and practical ways to support patients, caregivers, and the cancer care team.

Magseed

www.endomag.com/magseed

Magseed is a tiny magnetic seed, smaller than a grain of rice, used to help guide surgeons during a breast lumpectomy for impalpable breast cancer. Unlike breast guidewires which protrude from the skin and can easily be dislodged, Magseed can't be moved once inserted, so patients can carry on with their lives without compromising the accuracy of their surgery.

Magseed's signal does not decay, unlike radioguided occult lesion localisation using iodine-125 seeds (ROLLIS), allowing it to be placed weeks in advance of surgery, enabling better scheduling, fewer delays and less red tape.

Magseed is manufactured by Endomag and distributed in Australia & New Zealand by EBOS Healthcare.

Matrix Surgical

www.matrixsurgical.com.au

Our Matrix is simple – "Quality Surgical Solutions for the Best Patient Outcome"

Matrix Surgical is a supplier, manufacturer and importer of innovative and affordable surgical equipment, with a focus on laparoscopic instruments and accessories.

Matrix Surgical was cofounded in 1995 and takes pride in offering 'Quality Surgical Solutions for the Best Patient Outcome'. Today Matrix Surgical has a direct sales force in every state of Australia and licenced distributors in New Zealand. We've made it our mission to source or manufacture products that make life in the operating theatre easier and more efficient.

As well as finding and developing new products we also adapt our existing products and combinations to suit your needs.

Medical Specialties Australasia

www.msa.com.au

Medical Specialties Australasia (MSA) was founded in 1982 on the introduction of next generation technology and has pioneered the establishment of many new medical and surgical technologies in the Australasia region including first Vascular Access Port, Implantable Pump, PICC Line, AAA Stent Graft and Insulin Pump. Our customers receive comprehensive support through our highly trained field representatives, clinical educators, technical services specialists and customer service team.

Medilink

www.medilinkaustralia.com

Medilink has been providing solutions to medical imaging departments since 1991. We offer a range of diagnostic display systems, CD/DVD publishers and X-ray cabinets.

Medilink represents Kubtec® in Australia. Kubtec® produce diagnostic imaging systems that enable medical professionals to provide the best quality of care for patients.

Their systems include 3-D breast specimen tomosynthesis for breast cancer treatment and Advanced 2-D digital X-ray imaging for pathology, biopsy and the operating theatre with the aim of redefining medical imaging and healthcare standards for the 21st century.

Melbourne Pathology

www.mps.com.au

e Pathology is the premier provider of pathology services in Victoria, with over 90 years of commitment to diagnostic excellence and customer service. They form a part of Sonic Healthcare, an Australian owned company that is one of the world's largest diagnostic medical companies. Melbourne Pathology's highly experienced team of pathologists are leaders in their field with specialist knowledge and expertise in clinical pathology, cytopathology and anatomical pathology, including breast pathology. They provide current, informed and practical advice to assist with interpretation of results and are available for consultation. Melbourne Pathology has state-of-the-art, 24-hour laboratories located in Collingwood, Richmond, Box Hill and Mulgrave, and additional laboratories in Geelong, Mornington, Footscray, Moe, Bendigo and Ballarat. These laboratories support almost 300 collection centres throughout Melbourne and Victoria. Through Sonic Genetics (part of Sonic Healthcare), the TGA registered Prosigna® Breast Cancer Prognostic Gene Signature Assay and Contextual Genomics Find It® Cancer Hotspot Panel provides clinicians with the most comprehensive and actionable results at a cost-effective price

Melbourne Pathology offers experience, knowledge, dedicated pathologists and a quality pathology service.

Mentor

www.jjmc.ca/our-products/mentor

A Global Leader in Aesthetic Medicine. Founded in 1969, Mentor Worldwide LLC is a leading global manufacturer of high quality breast implants.
Headquartered in Santa Barbara, California, Mentor has manufacturing and research operations in the United States and the Netherlands.
Mentor has over 30 years of experience in the manufacture of breast implants and tissue expanders. Our experience and expertise results in quality products you can rely on.
Mentor and our 1,200 worldwide employees strive to provide high-quality products and services to healthcare professionals and patients.
In January 2009, Mentors was acquired by Johnson & Johnson. Together we aim to enhance and restore self-esteem and quality of life. Simply said, our mission is to Make Life More Beautiful.

MSD

www.merck.com

MSD's Focus on Cancer

Our goal is to translate breakthrough science into innovative oncology medicines to help people with cancer worldwide. At MSD, helping people fight cancer is our passion and supporting accessibility to our cancer medicines is our commitment. Our focus is on pursuing research in immuno-oncology and we are accelerating every step in the journey – from lab to clinic – to potentially bring new hope to people with cancer.

Myriad

www.myriad.com

Myriad is a leading personalized medicine company dedicated to being a trusted advisor transforming patient lives worldwide with pioneering molecular diagnostics. Myriad discovers and commercializes molecular diagnostic tests that: determine the risk of developing disease, accurately diagnose disease, assess the risk of disease progression, and guide treatment decisions across six major medical specialties where molecular diagnostics can significantly improve patient care and lower healthcare costs.

EndoPredict is a 2nd generation breast cancer recurrence test that combines the prognostic power of a 12-Gene Molecular Score with tumor size and lymph node status. EndoPredict provides a comprehensive assessment of the 10-year risk of distant recurrence for women with ER+, HER2- early-stage breast cancer when treated with 5-years of endocrine therapy.

Novartis

www.novartis.com

At Novartis, our mission is to discover new ways to improve and extend people's lives. We use science-based innovation to address some of society's most challenging healthcare issues. We discover and develop breakthrough treatments and find new ways to deliver them to as many people as possible.

As leader in oncology, Novartis offers a portfolio of more than 20 approved therapies and approximately 30 compounds in development.

We are passionate about what we do and the impact we have on patients and societies.

We are Novartis, and we are reimagining medicine.

Pfizer Oncology

www.pfizer.com.au

Pfizer Oncology works collaboratively with academic institutions, individual researchers, cooperative research groups, governments and licensing partners to further its extensive research and development program. We are committed to partnerships with professional and patient organizations that deliver benefits to patients including disease management tools, awareness of clinical trial options and access to new medicines.

Working together, we strive to transform treatment by targeting the right drug for the right patient at the right time.

Regional Health Care Group

www.rhcg.com.au

Regional Health Care Group (RHCG) is proud to exhibit at the Melbourne International Breast Conference 2018…

Paxman® Scalp Cooling System; the Australian & Global market leader for helping cancer patients avoid Chemotherapy induced hair-loss.

ImpediMed® Non-invasive fluid & tissue analysis technology with bilateral lymphedema monitoring capability

iCAD XOFT® System for intraoperative radiotherapy (IORT) during Breast Cancer surgery, Gynae & Skin Cancers.

RHCG is highly regarded in all clinical settings across Australia & NZ; providing specialist medical consumables supplies & support; delivering quality products, excellent service & cost-savings.

Roche

www.roche-australia.com

Roche is a global pioneer in pharmaceuticals and diagnostics focused on advancing science to improve people's lives.

Roche is the world's largest biotech company, with truly differentiated medicines in oncology, immunology, infectious diseases, ophthalmology and diseases of the central nervous system. Roche is also the world leader in in-vitro diagnostics and tissue-based cancer diagnostics, and a frontrunner in diabetes management. The combined strengths of pharmaceuticals and diagnostics have made Roche the leader in personalised healthcare – a strategy that aims to fit the right treatment to each patient in the best way possible.

Founded in 1896, Roche continues to search for better ways to prevent, diagnose and treat diseases and make a sustainable contribution to society. The company also aims to improve patient access to medical innovations by working with all relevant stakeholders. Thirty medicines developed by Roche are included in the World Health Organization Model Lists of Essential Medicines, among them antibiotics, antimalarials and cancer medicines. Roche has been recognised as the leading healthcare company in the Dow Jones Sustainability Indices since 2009.

The Roche Group, headquartered in Basel, Switzerland, is active in over 100 countries and in 2016 employed more than 94,000 people worldwide. Roche invests around 10 billion US Dollars each year in research and development worldwide, including over AUD 37 million in pharmaceuticals in Australia. Genentech, in the United States, is a wholly owned member of the Roche Group. Roche is the majority shareholder in Chugai Pharmaceutical, Japan.

Roche's pharmaceutical division in Australia employs over 350 people who are dedicated to the clinical development, registration, sales, marketing and distribution of innovative pharmaceutical medicines. Australian patients have access to around 40 Roche medicines, and the company is the leading provider of cancer medicines in Australia by sales.

Smith & Nephew

www.smith-nephew.com/australia

Smith & Nephew is a global medical technology company with a focus on repairing and healing the human body in three high-growth sectors: Orthopaedics, Endoscopy, Wound Management and ENT.

The company creates innovative products, whose performance has earned the trust of clinicians around the world. We are very proud that every day our products help improve people's lives.

The Wound Management portfolio features:

- Products that speed up the healing process in difficult-to-heal wounds
- Dressings and products for acute and chronic wounds, including diabetic wounds and burns

Sonic Genetics

www.sonicgenetics.com.au/tests/prosigna

Sonic Healthcare is Australia's largest provider of pathology testing and the third largest in the world, with operations in eight countries.

Sonic Genetics is a specialist genetics service that brings together Sonic Healthcare's national and international expertise to provide a comprehensive range of high quality, accredited genetic tests to doctors, patients and families across Australia.

Our MIBC 2018 presentation focuses on the TGA registered Prosigna® Breast Cancer Prognostic Gene Signature Assay which provides a patient's risk of distant recurrence and classifies tumours into one of four intrinsic subtypes to guide clinical decisions. Prosigna® is based on the PAM50 gene signature that measures the expression of 50 genes.

Prosigna® is performed in an accredited Australian laboratory and provides clinicians with the most comprehensive and actionable results at a cost-effective price. For further information, please come to our booth, visit www.sonicgenetics.com.au/tests/prosigna or call us on 1800 010 447.

Specialised Therapeutics

www.stbiopharma.com

Specialised Therapeutics Australia is a privately-held international pharmaceutical company providing new specialist medicines to patients in Australia, New Zealand and across South-East Asia. Dually headquartered in Melbourne, Australia and Singapore, STA and its affiliate company Specialised Therapeutics Asia Pte Ltd collaborates with leading global pharmaceutical, biotech and diagnostic companies to bring innovative specialist therapies and technologies to patients in key regions. The current oncology portfolio includes ABRAXANEÒ (nanoparticle albumin-bound paclitaxel), NERLYNXÔ (neratinib) as well as the Oncotype DXÒ breast cancer assay. In addition, ST holds a robust portfolio of haematology, supportive care, neurology and ophthalmology medicines. Additional information can be found at www.stbiopharma.com

Spiran

https://spiran.care/

Spiran is a boutique brand that encompasses highly innovative products which are collectively recognized by Australia's leading Plastic Surgeons as the aspirational brands to associate with. We have a truly patient and client centric approach; our industry specific and highly experienced team are truly dedicated to inspiring Australian surgeons, support staff and their patients to be the best they can be in life, surgery and business, while achieving their goals through utilizing superior products and highly innovative technologies.

We believe in innovation, inspiration and a truly amazing total customer experience; whether you are a patient, a surgeon or a clinic we aspire to ensure plastic surgeons and their patients have the very best experience, each step of the way, to be the best they can be and feel inspired everyday!

Surgeons Choice

www.surgeonschoice.net.au

Surgeons Choice continues to exclusively provide sales, support and service for the Navigator range of Sentinel Node Probe systems in Australia.
We are showcasing a next generation innovative liquid nitrogen Cryoablation System providing the coldest, fastest most stable Cryoablation Technology in the market, for treatment of benign and some malignant breast tumors.

Surgical Supplies Australia

www.surgsa.com.au

Surgical Supplies Australia are an Australian owned distributor of medical devices and associated products across plastic, cosmetic and reconstructive surgery. SSA's strategy is to bring to the Australian market best of breed products that are innovative and deliver a clear point of difference.

As a boutique style distribution company we focus heavily on service and service delivery to our customers. This provides our customers with the confidence to know that when dealing with SSA they can rely on an un-paralled level of service and product delivery.

We have a team of highly trained sales professionals servicing all states of Australia with year of experience in our fields looking forward to delivering your product needs.

Volpara

www.volparasolutions.com

Volpara will showcase its suite of quantitative breast imaging tools, which allow for personalised measurements of volumetric breast density, patient dose, breast compression and other factors designed to help maintain accuracy and consistent quality in mammography. With its VolparaDensity and cloud-based VolparaEnterprise software, Volpara is the market leader in both breast density analysis and quality and performance analytics for breast imaging centres.

Volpara's software is the most clinically validated of its kind in the world, featured in over 240 medical publications, and is supported by numerous patents, trademarks and regulatory clearances.

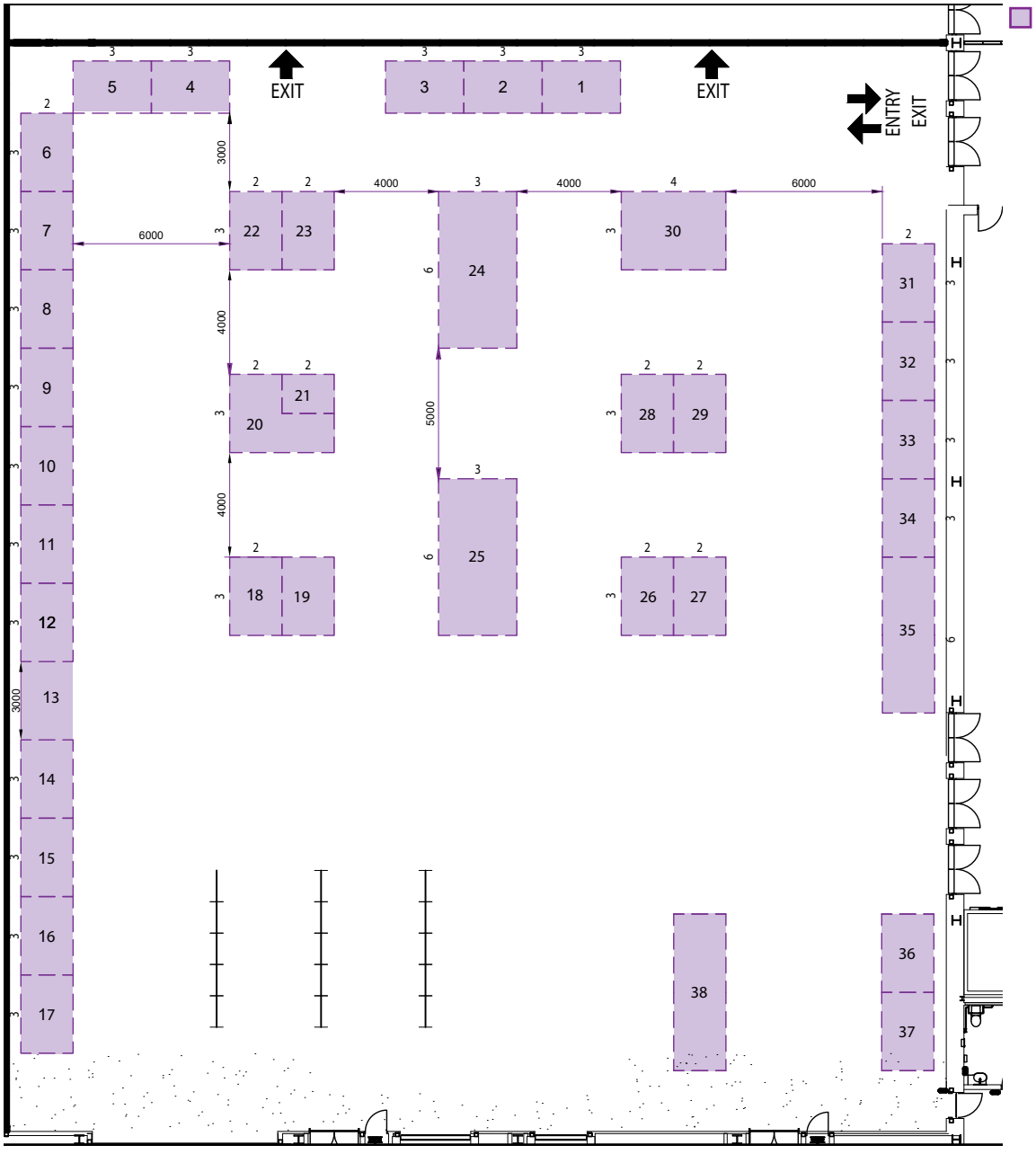
Zeiss

www.zeiss.com.au

The Carl Zeiss Group is a leading group of companies operating worldwide in the optical and opto-electronic industries. Headquartered in Oberkochen, Germany, Carl Zeiss is represented in more than 30 countries, with around 30 production sites and 50 sales and service sites around the world.

ZEISS is a leader in ophthalmic and surgical microscopes from dental to the latest technology neurosurgical systems. Since 1997, ZEISS has also been a leader in Intraoperative Radiotherapy (IORT) with the introduction of INTRABEAM®. Radical surgical methods in the treatment of breast cancer are being replaced by less-invasive, breast-conserving therapy and this trend is appearing in radiotherapy where oncologists are moving from the largely standardised treatment plan to risk-adapted and targeted individualised therapy. Visit the ZEISS stand at MIBC 2018 to experience the INTRABEAM®.

FLOOR PLAN



1 Bio-Strategy
2 Melbourne Pathology / Sonic Genetics
3 alpha XRT
4 Bard
5 BCNA
6 Defries
7 Martix Surgical
8 & 9 Zeiss
10 Myriad
11 Specialized Therapeutics
12 Eisai
13 Surgical Supplies Aus.
14 Medilink Australia
15 Surgeons Choice
16 Spiran
17 Aspen Australia
18 Hologic
19 Aurora BioScience
20 GEHealthcare
21 Lilly Barista Cart
22 Smith and Nephew
23 GRC Surgical
24 Amgen
25 Novartis
26 LIfeHealthcare
27 ICON Group
28 J&J
29 Medical Specialties Australasia
30 Roche
31 Volpara Solutions
32 Endotherapeutics
33 Integra
34 Pfizer
35 Regional Healthcare
36 Device Technologies
37 ANSTO
38 EBOS/Magseed

Please review before prescribing, Product Information is available from www.eisai.com.au/PI

PBS Information: Authority Required (STREAMLINED). Locally advanced or metastatic breast cancer. Advanced (unresectable and/or metastatic) liposarcoma. Refer to PBS Schedule for full authority.

PBS Authority (STREAMLINED): 4649 for breast cancer; 7258 for liposarcoma (initial treatment); 7280 for liposarcoma (continuing treatment)

Halaven®
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Australasian Society for Breast Disease (ASBD)

4th World Congress on Controversies in Breast Cancer (CoBrCa)

Breast Surgeons of Australia & New Zealand (BreastSurgANZ)

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