CoBrCa

8th World Congress on Controversies in Breast Cancer

in partnership with

ABS ASSOCIATION OF BREAST SURGERY

Edinburgh, Scotland, UK
September 11-13, 2024

Congress Program

www.cobrca.org

Timetable

Wednesday, September 11, 2024

	Hall A (Pentland, Level 3)	**Hall B** (Sidlaw, Level 3)
11:30-13:00	**12:00-13:00** **Industry Lunch Symposium*** *See page 49*	**11:30-13:00** **Lunch Symposium*** **AI in breast imaging**
13:00-13:15	**Congress Opening**	
13:15-14:40	**Session 1:** **Neoadjuvant therapy**	
14:40-15:10	*Coffee break, poster viewing and exhibition visit*	
15:10-16:10	**Session 2:** **Imaging**	**Session 3:** **HER2+ve disease**
16:10-17:10	**Session 4:** **DCIS**	**Session 5:** **Metastatic HR+ve breast disease**
17:15-18:15	*Networking Reception*	

Thursday, September 12, 2024

	Hall A (Pentland, Level 3)	**Hall B** (Sidlaw, Level 3)
07:30-08:30	**Industry Breakfast Symposium**** *See page 49*	**Industry Breakfast Symposium**** *See page 49*
08:30-09:30	**Session 6:** **Breast cancer in young women**	
09:30-11:00	**Session 7:** **Screening**	**Session 8:** **Triple negative breast cancer**
11:00-11:30	*Coffee break, poster viewing and exhibition visit*	
11:30-12:30	**Session 9:** **Metastatic Breast Cancer (MBC)**	**Session 10:** **Free Papers: Surgical**
12:30-13:30	**Pre-lunch Industry Symposium** *See page 50*	**Pre-lunch Industry Symposium** *See page 50*
13:30-14:30	*Lunch break, poster viewing and exhibition visit*	
14:30-15:30	**Session 11:** **Genetics**	**Session 12:** **Free Papers: Medical oncology**
15:30-16:00	*Coffee break, poster viewing and exhibition visit*	
16:00-17:30	**Session 13:** **Adjuvant endocrine therapy**	

Friday, September 13, 2024

	Hall A (Pentland, Level 3)	**Hall B** (Sidlaw, Level 3)
07:30-08:30		**Industry Breakfast Symposium**** *See page 50*
08:30-10:00	**Session 14:** **Reconstruction**	**Session 15:** **Managing side effects of hormone treatment in breast cancer? An interactive session**
10:00-10:30	*Coffee break, poster viewing and exhibition visit*	
10:30-11:30	**Session 16:** **Locoregional management**	
11:30-12:30	**Session 17:** **Breast cancer 2035**	
12:30-12:45	**Congress closing and award presentation**	

* Lunch boxes will be served to session participants
** Refreshments will be served to session participants from 07:00-07:30

Table of Contents

Welcome Letter

Dear Friends and Colleagues,

We are pleased to welcome you to the **8th World Congress on Controversies in Breast Cancer (CoBrCa)**, held in partnership with the **UK Association of Breast Surgery (ABS)**, in Edinburgh, Scotland, UK.

The Joint Congress will continue the tradition of CoBrCa by directly addressing key issues facing clinicians in their daily practice, including medical oncology, surgery, radiation oncology, breast imaging, pathology, reconstruction, allied health and survivorship issues.

We are delighted to have assembled a stellar international and national faculty and thank all 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 country 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 beautiful city of Edinburgh.

Sincerely,

CoBrCa Congress Chairs

Javier Cortes, *Spain*
Richard de Boer, *Australia*
Bruce Mann, *Australia*
Alastair Thompson, *USA*

Association of Breast Surgery (ABS)

Leena Chagla, *UK*
Sarah Downey, *UK*
Yazan Masannat, *UK*

Local Chairpersons

Kenneth Elder, *UK*
Olga Oikonomidou, *UK*

General Information

Congress Venue

Edinburgh International Conference Centre (EICC)
The Exchange, Edinburgh EH3 8EE, Scotland
www.eicc.co.uk

Language

The official language of the Congress is English.

Registration Desk

The registration desk will be open on level 0 (Strathblane) at the EICC during the following hours:

Wednesday, September 11, 2024	10:30-18:15
Thursday, September 12, 2024	06:30-17:30
Friday, September 13, 2024	07:00-13:00

Name badge

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

Certificate of attendance (non CME/CPD)

Certificates of attendance will be sent electronically to all registered participants after the congress.

CME Accreditation

An application has been made to the European Accreditation Council for Continued Medical Education (EACCME®) for CME accreditation of the **8th World Congress on Controversies in Breast Cancer (CoBrCa)**.

Please visit the website for updates.

Exhibition

The exhibition will be open from 14:30 on Wednesday, September 11 and will be open during session hours. Lunch and coffee breaks will be held in the exhibition area. In line with current regulations, medical students, patient advocates and patients will not be allowed access to the exhibition area or pharma supported symposia.

Clothing

Business casual for all occasions

Smoking policy

This is a non-smoking event

Refreshments

A Networking Reception will be held on Wednesday, September 11 at 17:15.

Lunch:
Wednesday, September 11 - Lunch boxes will be served to session participants outside the session halls.
Thursday, September 12 - Lunch will be served in the exhibition area
All **coffee breaks** will take place in the exhibition area.

Industry Breakfast Symposia:
Refreshments will be served outside session halls, to session participants, prior to the morning symposia at 07:00 on Thursday, September 12 and Friday, September 13, 2024.

Speakers' Preview Room

Invited Speakers and oral presenters are invited to visit the Speakers' Preview Room to upload their presentations no less than 30 minutes prior to their session (but preferably earlier). The Preview Room is situated in the Harris Suite on level 1 at the EICC. Slides should be created in 16:9 (widescreen) and presentations should be brought on a USB stick. Any video content should be embedded within the powerpoint itself. Speakers should be aware of where/when they are speaking.

Poster Display

Posters can be viewed on Level 0 (Strathblane) at the EICC.

Please check the Scientific Program for the board number on which you should display your poster(s).

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 8th World Congress on Controversies in Breast Cancer (CoBrCa) secretariat, ABS UK, and Organizers cannot accept liability for personal accidents or loss or damage to private property of participants either during or directly arising from the CoBrCa congress. Participants should make their own arrangements with respect to health and travel insurance.

Congress Organizer

CongressMed

www.congressmed.com

CoBrCa

Scientific Program

Wednesday, September 11, 2024

12:00-13:00 **Industry Lunch Symposium** **Hall A**
Lunch boxes will be handed out to session participants.
For full session details, please refer to page 49

11:30-13:00 **Lunch Symposium:**
AI in breast imaging **Hall B**
Lunch boxes will be handed out to session participants.

Chairperson: **Yazan Masannat,** *Essex, UK*

11:30-11:45 Hype or hope: Breast imaging and Artificial Intelligence
Gerald Lip, *Aberdeen, Scotland, UK*

11:45-12:00 Optimizing breast MRI utility with AI
Karla Sepulveda, *Houston, TX, USA*

12:00-13:00 **Round Table Discussion:**
James Blackwood, *Glenboig, Scotland, UK*
Julia Camps Herrero, *Valencia, Spain*

13:00-13:15 **Congress Opening** **Hall A**

Chairpersons: **Leena Chagla,** *Cheshire, UK*
Bruce Mann, *Melbourne, Australia*

Welcome message from Congress chairpersons

13:15-14:40 **Session 1:**
Neoadjuvant therapy **Hall A**

Chairpersons: **Leena Chagla,** *Cheshire, UK*
Bruce Mann, *Melbourne, Australia*

13:15-13:50	**DEBATE:** That cT1cN0 HER2+ve should have NAST
13:15	**Yes: Javier Cortes,** *Madrid, Spain*
13:25	**No: Sarah Downey,** *Norfolk, UK*
13:35	Discussion

13:50-14:05 Imaging during NAST
Julia Camps Herrero, *Valencia, Spain*

14:05-14:40	**DEBATE:** Patients with a positive TAD post NACT should have completion axillary clearance
14:05	Yes: **Stephen Grobmyer**, *Abu Dhabi, UAE*
14:15	No: **Amit Goyal**, *Derby, UK*
14:25	Discussion

14:40-15:10 *Coffee break, poster viewing and exhibition visit*

15:10-16:10 **Session 2:**
Imaging **Hall A**

Chairpersons: **Nisha Sharma,** *Leeds, UK*
Karla Sepulveda, *Houston, TX, USA*

15:10-15:40	**DEBATE:** The Contrast Breast Imaging should be routine prior to surgery for DCIS or invasive cancer
15:10	**Yes: Bruce Mann,** *Melbourne, Australia*
15:20	**No: Stuart McIntosh,** *Belfast, UK*
15:30	Discussion

15:40-16:10	**DEBATE:** The CEM should be the surveillance imaging test for most patients with past history of breast cancer
15:40	**Yes: Allison Rose,** *Melbourne, Australia*
15:50	**No: Sarah Savaridas,** *Dundee, Scotland, UK*
16:00	Discussion

15:10-16:10 **Session 3:**
HER2+ve disease **Hall B**

Chairpersons: **Richard de Boer,** *Melbourne, Australia*
Olga Oikonomidou, *Edinburgh, Scotland, UK*

15:10-15:40	**DEBATE:** Do anthracyclines still have a place in the treatment of early stage HER2+ve BC?
15:10	**Yes: Richard Simcock,** *Surrey, UK*
15:20	**No: Kevin Kalinsky,** *Atlanta, GA, USA*
15:30	Discussion

15:40-15:55 HER2 low
Sarah Pinder, *London, UK*

15:55-16:10 Is there a threshold for systemic treatment of HER2+ve cancer?
Iain MacPherson, *Glasgow, Scotland, UK*

16:10-17:10 **Session 4:**
DCIS **Hall A**

Chairpersons: **Bruce Mann,** *Melbourne, Australia*
Tracey Irvine, *Surrey, UK*

16:10-16:40	**DEBATE:** That most patients with DCIS should have radiotherapy after Breast Conserving Surgery
16:10	**Yes: Frank A. Vicini,** *Farmington Hills, MI, USA*
16:20	**No: Elinor Sawyer,** *London, UK*
16:30	Discussion

16:40-17:10	**DEBATE:** That active surveillance for low risk DCIS is a reasonable option
16:40	**Yes: Shelley Potter,** *Bristol, UK*
16:50	**No: Henry J. Cain,** *Newcastle upon Tyne, UK*
17:00	Discussion

16:10-17:10 **Session 5:**
Metastatic HR+ve breast cancer **Hall B**

Chairpersons: **Richard de Boer,** *Melbourne, Australia*
Olga Oikonomidou, *Edinburgh, Scotland, UK*

16:10-16:40 What to do after progression on CDKi
Kevin Kalinsky, *Atlanta, GA, USA*

16:40-17:10	**DEBATE:** That CDKi should be first line treatment for ~all HR+ve MBC
16:40	**Yes: Javier Cortes,** *Madrid, Spain*
16:50	**No: Mark Verrill,** *Newcastle upon Tyne, UK*
17:00	Discussion

17:15-18:15 *Networking Reception*

Thursday, September 12, 2024

07:30-08:30 **Breakfast Industry Symposium** **Hall A**
Light refreshments will be served, from 07:00-07:30, to session participants only.
For full session details, please refer to page 49

07:30-08:30 **Breakfast Industry Symposium** **Hall B**
Light refreshments will be served, from 07:00-07:30, to session participants only.
For full session details, please refer to page 49

08:30-09:30 **Session 6:**
Breast cancer in young women **Hall A**

Chairpersons: **Ramsey Cutress,** *Southampton, UK*
Yazan Masannat, *Essex, UK*

08:30-09:00 Controversies in breast cancer management in young women
Ann Partridge, *Boston, MA, USA*

09:00-09:30	**DEBATE:** That women <35 with breast cancer should be advised to have bilateral total mastectomy
09:00	**Yes: Michael Alvarado,** *San Francisco, CA, USA*
09:10	**No: J. Michael Dixon,** *Edinburgh, Scotland, UK*
09:20	Discussion

09:30-11:00 **Session 7:**
Screening **Hall A**

Chairpersons: **Sarah Downey,** *Norfolk, UK*
Laszlo Romics, *Glasgow, Scotland, UK*

09:30-10:00	**DEBATE:** That a change to risk-adjusted screening is urgent and feasible
09:30	**Yes: D. Gareth Evans,** *Manchester, UK*
09:40	**No: Cliona Kirwan,** *Manchester, UK*
09:50	Discussion

10:00-10:25 CBI in screening
Allison Rose, *Melbourne, Australia*

10:25-11:00	**DEBATE:** That women at low risk for breast cancer should only be screened every 5 years
10:25	**Yes: Nisha Sharma,** *Leeds, UK*
10:35	**No: Karla Sepulveda,** *Houston, TX, USA*
10:45	Discussion

09:30-11:00 **Session 8:**
Triple negative breast cancer **Hall B**

Chairpersons: **Richard de Boer,** *Melbourne, Australia*
Richard Simcock, *Surrey, UK*

09:30-10:10	**DEBATE:** That all stage 2/3 TNBC patients should be treated according to Keynote522 regimen
09:30	**Yes: Olga Oikonomidou,** *Edinburgh, Scotland, UK*
09:45	**No: Carlo Palmieri,** *Liverpool, UK*
10:00	Discussion

10:10-10:25 TNBC subtypes: Do they have clinical significance?
Matthew J. Ellis, *Houston, TX, USA*

10:25-11:00	**DEBATE:** Asymptomatic patients with high-risk TNBC should undergo surveillance imaging
10:25	**Yes: Ann Partridge,** *Boston, MA, USA*
10:35	**No: Alistair Ring,** *London, UK*
10:45	Discussion

11:00-11:30 *Coffee break, poster viewing and exhibition visit*

11:30-12:30 **Session 9:**
Metastatic Breast Cancer (MBC) **Hall A**

Chairpersons: **Olga Oikonomidou,** *Edinburgh, Scotland, UK*
Iain MacPherson, *Glasgow, Scotland, UK*

11:30-12:00	**DEBATE:** That molecular testing of tumours should be routine for patients with Metastatic Breast Cancer
11:30	**Yes: Marina Parton,** *London, UK*
11:40	**No: Richard de Boer,** *Melbourne, Australia*
11:50	Discussion

12:00-12:30	**DEBATE:** SABR should be considered in most patients with oligometastatic breast cancer
12:00	**Yes: John Conibear,** *London, UK*
12:10	**No: Stephen Harrow,** *Edinburgh, Scotland, UK*
12:20	Discussion

11:30-12:30 **Session 10:**
Free Papers: Surgical **Hall B**

Chairpersons: **Lynda Wyld,** *Sheffield, UK*
Raghavan Vidya, *Birmingham, UK*

11:30-11:40 Variation in practice and provision of contralateral symmetrising mastectomy after unilateral mastectomy for breast cancer: A UK national practice survey
Katherine Fairhurst, *Bristol, UK*

11:40-11:50 Mammographic surveillance in early breast cancer patients aged 50 years or over: Results of the Mammo-50 non-inferiority trial of annual versus less frequent mammography
Janet Dunn, *Coventry, UK*

11:50-12:00 Oncoplastic breast conservation surgery increases survival in comparison to mastectomy in a west of Scotland population-based study with long-term follow-up
Mhairi Mactier, *Glasgow, Scotland, UK*

12:00-12:10 Uptake of breast cancer screening with mammography and ultrasound in China: A multi-centre population-based study
Yadi Zheng, *Beijing, China*

12:10-12:20 Cumulative risk of cosmetic worsening following ultra-hypofractionated whole breast radiotherapy with simultaneous integrated boost: Largest real-world data
Tabassum Wadasadawala, *Mumbai, India*

12:20-12:30 Factors influencing immediate reconstruction and complications for gene carriers in those undergoing mastectomy in KConFAb population
Anita Skandarajah, *Melbourne, Australia*

12:30-13:30 **Pre-lunch Industry Symposium** **Hall A**
For full session details, please refer to page 50

12:30-13:30 **Pre-lunch Industry Symposium** **Hall B**
For full session details, please refer to page 50

13:30-14:30 *Lunch break, poster viewing and exhibition visit*

14:30-15:30 **Session 11:**
Genetics **Hall A**

Chairpersons: **Alastair Thompson,** *Houston, TX, USA*
Douglas Ferguson, *Exeter, UK*

14:30-15:00	**DEBATE:** That most cancer patients with gene mutations should be offered breast conservation
14:30	**Yes: D. Gareth Evans,** *Manchester, UK*
14:40	**No: Stuart McIntosh,** *Belfast, UK*
14:50	Discussion

15:00-15:15 The 'new genes': What do they mean for patients and families?
Jennie Murray, *Edinburgh, Scotland, UK*

15:15-15:30 What is the appropriate timing of risk reduction BSO in BRCA patients?
Cameron Martin, *Edinburgh, Scotland, UK*

14:30-15:30 **Session 12:**
Free Papers: Medical oncology **Hall B**

Chairpersons: **Richard de Boer,** *Melbourne, Australia*
Carlo Palmieri, *Liverpool, UK*

14:30-14:40 Identifying oestrogen receptor-related genes of predictive value in breast cancer
Shorouk Makhlouf, *Nottingham, UK*

14:40-14:50 Pathological complete response rate in neoadjuvant chemotherapy versus concurrent chemo-endocrine therapy in hormone receptor positive, HER2 negative breast cancer
Shalaka Joshi, *Mumbai, India*

14:50-15:00 Why have health technology assessment boards reached differing conclusions about the ability of tumour gene expression tests to predict chemotherapy benefit for postmenopausal breast cancer patients?
Robert Stein, *London, UK*

15:00-15:10 A morphometric signature for HER2 activity predicts recurrence risk in breast cancer
Nehal Atallah, *Nottingham, UK*

15:10-15:20 Something old, new or borrowed: Optimum second line therapy after CDK4-6 inhibition
Andrew Redfern, *Murdoch, Australia*

15:20-15:30 **Discussion**

15:30-16:00 *Coffee break, poster viewing and exhibition visit*

16:00-17:30 **Session 13:**
Adjuvant endocrine therapy **Hall A**

Chairpersons: **Cliona Kirwan,** *Manchester, UK*
John Benson, *Cambridge, UK*

16:00-16:45 **Why my assay is best**

16:00 **PAM 50**
Matthew J. Ellis, *Houston, TX, USA*

16:15 **The Oncotype DX Breast Recurrence Score® test**
Kevin Kalinsky, *Atlanta, GA, USA*

16:30 **Mammaprint**
William Audeh, *Los Angeles, CA, USA*

16:45-17:30	**DEBATE:** That adjuvant CDKs should be recommended for intermediate risk ER+HER2- EBC
16:45	**Yes: Kevin Kalinsky,** *Atlanta, GA, USA*
17:00	**No: Alistair Ring,** *London, UK*
17:15	Discussion

Friday, September 13, 2024

07:30-08:30 **Breakfast Industry Symposium** **Hall B**
Light refreshments will be served, from 07:00-07:30, to session participants only.
For full session details, please refer to page 50

08:30-10:00 **Session 14:**
Reconstruction **Hall A**

Chairpersons: **Leena Chagla,** *Cheshire, UK*
Krishna Clough, *Paris, France*

08:30-09:00 Fat grafting, realistic expectations and long term results
Krishna Clough, *Paris, France*

09:00-10:00 **MDT Round Table Discussion on tricky oncoplastic/reconstructive topics**

Case presenters:
Rajiv Dave, *Manchester, UK*
Kenneth Elder, *Edinburgh, Scotland, UK*

Panel:
J. Michael Dixon, *Edinburgh, Scotland, UK*
Adam Gilmour, *Glasgow, Scotland, UK*
Andrew Malyon, *Glasgow, Scotland, UK*
James Mansell, *Glasgow, Scotland, UK*
Lynda Wyld, *Sheffield, UK*

08:30-10:00 **Session 15:**
Managing side effects of hormone treatment in breast cancer?
An interactive session **Hall B**

Chairpersons: **Olga Oikonomidou,** *Edinburgh, Scotland, UK*
Katy Ellis, *Manchester, UK*

08:30-09:20 Managing oestrogen deprivation effects of therapy: Real world patient
Lesley Fallowfield, *Sussex, UK*

09:20-09:30 Prescribing exercise or dietary modifications in breast cancer: A real trend or just a fad?
Marina Parton, *London, UK*

09:30-09:50 Symptoms of menopause and how to manage them following breast cancer
Paula Briggs, *Liverpool, UK*

09:50-10:00 *Q&A*

10:00-10:30 *Coffee break, poster viewing and exhibition visit*

10:30-11:30 **Session 16:**
Locoregional management **Hall A**

Chairpersons: **Krishna Clough,** *Paris, France*
Stephen Grobmyer, *Abu Dhabi, UAE*

10:30-11:00	**DEBATE:** That patients with heavy axillary nodal disease pre-NACT should have axillary dissection irrespective of response to NACT
10:30	**Yes: Alastair Thompson,** *Houston, TX, USA*
10:40	**No: Leena Chagla,** *Cheshire, UK*
10:50	Discussion

11:00-11:30	**DEBATE**: That all patients with 1-3 macrometastases in axillary nodes should have Regional Nodal Radiation
11:00	**Yes: Elinor Sawyer,** *London, UK*
11:10	**No: Michael Douek,** *London, UK*
11:20	Discussion

11:30-12:30 **Session 17:**
Breast cancer 2035 **Hall A**

Chairpersons: **Leena Chagla,** *Cheshire, UK*
Bruce Mann, *Melbourne, Australia*

11:30-11:45 Oncoplastic surgery in 2035
Krishna Clough, *Paris, France*

11:45-12:00 Early detection in 2035
Karla Sepulveda, *Houston, TX, USA*

12:00-12:15 Management of stage 1 breast cancer in 2035
Bruce Mann, *Melbourne, Australia*

12:15-12:30 Systemic therapy in 2035
Olga Oikonomidou, *Edinburgh, Scotland, UK*

12:30-12:45 **Congress closing and Award presentation** **Hall A**

Chairpersons: **Leena Chagla,** *Cheshire, UK*
Bruce Mann, *Melbourne, Australia*

Poster Presentations

Adjuvant endocrine therapy

P01 SUSHI DOMAIN-CONTAINING PROTEIN 3 IS A PREDICTOR OF ENDOCRINE THERAPY RESPONSE IN BREAST CANCER
Shorouk Makhlouf, *UK*

Breast imaging

P02 RESIDUAL MICROCALCIFICATIONS AFTER NEOADJUVANT SYSTEMIC THERAPY FOR EARLY BREAST CANCER: IMPLICATIONS FOR SURGICAL PLANNING AND LONG-TERM OUTCOMES
Joel Allotey, *UK*

P03 LOCALIZATION OF NON-PALPABLE BREAST LESIONS
Martina Costa, *Italy*

P04 DIAGNOSIS OF PRIMARY AND SECONDARY BREAST LYMPHOMA: SOME CASES FROM OUR INSTITUTE AND REVIEW OF THE LITERATURE
Martina Costa, *Italy*

DCIS

P05 HOW CAN WE PREDICT UPSTAGING TO INVASIVE BREAST CANCER AFTER A BIOPSY DIAGNOSIS OF DUCTAL CARCINOMA IN SITU?
Julia Riggi, *Belgium*

HER2 positive breast cancer

P06 MAKING OUTCOME-BASED PRICING A REALITY IN THE UK – A RETROSPECTIVE COMPARISON OF COST-BASED VS OUTCOME-BASED PRICING FOR TRASTUZUMAB EMTANSINE (KADCYLA) IN METASTATIC BREAST CANCER
Karim El-Shakankery, *UK*

Locoregional therapy

P07 IMPACT OF OMITTING ROUTINE INTRAOPERATIVE FROZEN SECTION IN SENTINEL NODE BIOPSY FOR BREAST CANCER
Youmna Abdelaziz, *UK*

P08 RECONSIDERING THE NEED FOR INTRAOPERATIVE FROZEN SECTION IN SENTINEL LYMPH NODE BIOPSY FOR EARLY BREAST CANCER IN BAHRAIN
Hussain Abdulla, *Bahrain*

P09 AXILLARY RECURRENCE IN NON-STANDARD VS STANDARD AXILLARY LYMPH NODE DISSECTION IN N2-N3 HER2+ AND TRIPLE NEGATIVE BREAST CANCER PATIENTS THAT UNDERGO NEOADJUVANT SYSTEMIC THERAPY
Sergio Aguilar-Villanueva, *Mexico*

P10 LOCO-REGIONAL TREATMENT IN METASTATIC BREAST CANCER
Emanuela Esposito, *Italy*

P11 LONG TERM PATIENT REPORTED OUTCOMES FOLLOWING THERAPEUTIC MAMMAPLASTY OVER 17 YEARS
Katherine Fairhurst, *UK*

P12 DOES USE OF INTRAOPERATIVE INDOCYANINE GREEN (ICG) IMAGING REDUCE THE RISK OF MASTECTOMY SKIN FLAP NECROSIS (MFN) IN IMMEDIATE DEEP INFERIOR EPIGASTRIC PERFORATOR (DIEP) BREAST RECONSTRUCTIVE SURGERY?
Xin Yi Foong, *UK*

P13 SURGICAL MANAGEMENT OF THE NODE POSITIVE AXILLA WITH TARGETED AXILLARY DISSECTION IN BREAST CANCER: A SINGLE CENTRE EXPERIENCE OVER 6 YEARS OF PRACTICE
Chia Yin Goh, *UK*

P14 POST MASTECTOMY RECONSTRUCTION PRACTICES AND OUTCOMES FOR OLDER WOMEN IN A UK TERTIARY CARE CENTRE
Junaid Zia Hashmi, *UK*

P15 IMPLANT RECONSTRUCTION: TO MESH OR NOT TO MESH?
Kate Homyer, *UK*

P16 ONCOLOGICAL AND COSMETIC OUTCOMES OF LOCAL PERFORATOR FLAPS IN ONCOPLASTIC BREAST SURGERY; SINGLE CENTRE EXPERIENCE IN UK
Huma Irshad, *UK*

P17 ARE WE PERFORMING DIFFERENT TYPES OF OPERATION IN OUR OLDER BREAST CANCER PATIENTS COMPARED TO OUR YOUNGER BREAST CANCER PATIENTS?
David John, *UK*

P18 POST-CHEMOTHERAPY AXILLARY CONSERVATION SURGERY - UTILITY OF PRE-OPERATIVE AXILLARY ULTRASOUND AND INTRA-OPERATIVE FROZEN SECTION
Shalaka Joshi, *India*

P19 RESULTS OF THE INFLUENCE TRIAL: A STUDY COMPARING INDOCYANINE GREEN (ICG) FLUORESCENCE COMBINED WITH A STANDARD TRACER VERSUS ICG ALONE FOR SENTINEL NODE BIOPSY IN EARLY BREAST CANCER
Rahul Kanitkar, *UK*

P20 CHEST WALL PERFORATOR BASED FLAPS FOR PARTIAL BREAST RECONSTRUCTION AFTER BREAST CONSERVATION SURGERY: A CASE SERIES
Anupama Mane, *India*

P21 EXPLORING THE LANDSCAPE OF LOCOREGIONAL THERAPY DE-ESCALATION IN EARLY BREAST CANCER: A SYSTEMATIC REVIEW
Stuart Andrew McIntosh, *UK*

P22 BORDERLINE PHYLLODES TUMOUR IN 10-YEAR-OLD PREPUBERTAL FEMALE PRESENTING WITH NON-TENDER DISCRETE BREAST LUMP: A CASE REPORT
Kathryn McKnight, *Ireland*

P23 ONCOLOGICAL OUTCOMES OF LARGE VOLUME PARTIAL BREAST RESECTIONS RECONSTRUCTED WITH LATTISSIMUS DORSI FLAP OR THERAPEUTIC MAMMOPLASTY
Ankita Nirpharake, *India*

P24 SHOULD WE ADOPT NO CANCER ON INK? AN AUDIT OF MARGIN RE-EXCISION RATES AGAINST ASCO AND ABS GUIDELINES
Francesca Peters, *UK*

P25 DELAYED POST-BIOPSY TO SURGERY INTERVAL TENDS TO INCREASE AXILLARY NODAL METASTASIS, ESPECIALLY IN EARLY BREAST CANCER PATIENTS
Phatcharawan Prasitviset, *Thailand*

P26 PIONEERING BREAST CANCER EDUCATION IN EGYPT: INSIGHTS FROM THE FIRST ADVANCED ONCOPLASTIC BREAST SURGERY SKILLS COURSE BY THE EGYPTIAN GROUP OF BREAST SURGEONS
Ibrahim Sallam, *UK*

P27 ADVANCING BREAST RECONSTRUCTION: LICAP FLAP OPTIMIZATION TO ACHIEVE SUPERIOR NIPPLE AND BREAST SYMMETRY
Ibrahim Sallam, *UK*

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Thomas Hubbard, *UK*

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Harsimran Kaur Surinder Singh, *UK*

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Nehal Atallah, *UK*

P41 HEMATOLOGICAL AND BIOCHEMICAL MARKERS INFLUENCING BREAST CANCER RISK AND MORTALITY: PROSPECTIVE COHORT STUDY IN THE UK BIOBANK BY MULTI-STATE MODELS
Xiaoxi Huang, *China*

P42 CHARACTERISATION OF PLEOMORPHIC LOBULAR CARCINOMA: AN IMAGE ANALYSIS-ASSISTED STUDY
Shorouk Makhlouf, *UK*

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P45 PATIENT PARTICIPATION IN BRIEF LIFESTYLE INTERVENTION AND UNDERSTANDING OF MODIFIABLE RISKS FACTORS IN BREAST CANCER: AGREEABLE AND EFFECTIVE?
Katy Homyer, *UK*

P46 A CASE REPORT OF MALE BREAST CANCER 29 YEARS AFTER TOTAL BODY IRRADIATION FOR ACUTE LYMPHOBLASTIC LEUKAEMIA
Kezia Summers, *UK*

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P47 USE OF A WIRELESS RADAR LOCALISATION DEVICE TO STREAMLINE PATIENT CARE
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P48 THE IMPACT OF BREAST DENSITY NOTIFICATION ON ANXIETY IN SOUTH AUSTRALIAN WOMEN UNDERGOING BREAST CANCER SCREENING
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P49 REDUCING AXILLARY SURGERY IN ELDERLY PATIENTS WITH SMALL BREAST CANCERS
Victor Lim, *UK*

P50 LARGE VOLUME EXTENSIVE SAMPLING (LVES) AS FIRST LINE BIOPSY TECHNIQUE IN SELECTED GROUP OF CASES IN BREAST SCREENING PROGRAMME
Archana Seth, *UK*

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Abdulaziz Alshamlan, *Saudi Arabia*

P52 GYNAECOMASTIA REFERRAL PATHWAY - TIME FOR A CHANGE
Abdelbari Gdeh, *UK*

P53 USAGE OF BRACKETED MAGSEED (TWO OR MORE) FOR BREAST WIDE LOCAL EXCISION IN MULTIFOCAL OR MULTICENTRIC BREAST CANCER (MFBC/MCBC) COMBINED WITH PARTIAL BREAST RECONSTRUCTION USING PERFORATOR FLAPS
Akram Girgis, *UK*

P54 POSTOPERATIVE COMPLICATIONS FOLLOWING BREAST AUGMENTATION MASTOPEXY SURGERY ABROAD AND ITS IMPACT ON NATIONAL HEALTH SERVICE (CASE REVIEW)
Akram Girgis, *UK*

P55 IDENTIFYING RESEARCH PRIORITIES FOR IMPROVING INFORMATION AND SUPPORT FOR PATIENTS UNDERGOING BREAST CANCER SURGERY: A UK PATIENT-CENTRED PRIORITY SETTING PARTNERSHIP
Stuart McIntosh, *UK*

Triple negative breast cancer

P56 NAVIGATING SYNCHRONOUS BREAST AND COLON CANCER: MULTIDISCIPLINARY MANAGEMENT OF LOW ESTROGEN RECEPTOR-POSITIVE TUMOR - A CASE REPORT
Farah Bani-Khaled, *Jordan*

P57 INFLAMMATORY BREAST CANCER - SINGLE CENTER EXPERIENCE IN BANGLADESH
Sadia Siddiky, *UK*

CoBrCa

Abstracts

INVITED SPEAKER ABSTRACTS

WHY AGENDIA PROVIDES THE BEST ASSAY FOR EARLY-STAGE BREAST CANCER

William Audeh, *Los Angeles, CA, USA*
M.D., M.S., Chief Medical Officer, Agendia

The "best" assay for early-stage breast cancer is the assay providing the greatest amount of clinically relevant information to predict prognosis and guide therapy selection, to achieve the highest likelihood of cure with the least toxicity. The MammaPrint 70-gene assay, in combination with the BluePrint 80-gene assay, provides the most comprehensive genomic classification of early-stage breast cancer to assist in achieving this goal. MammaPrint is a gene expression assay comprised of 70 genes which predict the likelihood of breast cancer recurrence, classifying cancers as either High Risk or Low Risk. The MammaPrint assay further stratifies High Risk into High1 and High2, and Low Risk into UltraLow Risk and Low Risk. The 70 genes are each involved in one or more pathways of the multi-step process of metastasis, providing a robust analysis of clinically relevant breast cancer biology. The MammaPrint assay is routinely combined, from the same tumor sample, with gene expression patterns of 80 additional genes, the BluePrint assay, identifying signaling pathways driving tumor growth, which further classifies cancers as hormonally driven (Luminal-type), HER2 driven (Her2-Type), or neither (Basal-type). Together, MammaPrint(MP) and BluePrint(BP) identify 5 distinct subtypes of Hormone-Receptor positive (HR+) Breast Cancer, each with distinct clinical implications for prognosis and therapy selection. Several critical decisions must be made for any newly diagnosed early-stage HR+ breast cancer, including the extent and timing of surgery, the need for chemotherapy, the selection of regimen, the potential benefit of pre-operative systemic therapy versus adjuvant therapy, and the type and duration of endocrine therapy. Each of these decisions is informed by the results from MammaPrint and BluePrint. Data from a variety of clinical trials, to be referenced in the presentation, have established the following clinical utility: MP Low Risk/BP Luminal Stage I and II breast cancers may safely avoid chemotherapy; MP UltraLow/BP Luminal postmenopausal women may require less than 5 years of endocrine therapy(ET); MP Low Risk/BP Luminal benefit from extended ET to 10 years; MP High Risk/BP Basal are clinically similar to triple negative breast cancer; MP High 2/BP Luminal have a pathologic complete response rate (pCR) of 20-30%, MP High2/BP Basal pCR of 37-42% to neoadjuvant chemotherapy, and both appear to benefit from anthracyclines and immunotherapy. This comprehensive classification may be obtained on the diagnostic core biopsy, informing surgical extent and timing, prediction of pCR, necessity of chemotherapy and regimen selection, and endocrine management. Agendia's assays are therefore most informative, and "best".

SYMPTOMS OF MENOPAUSE AND HOW TO MANAGE THEM FOLLOWING BREAST CANCER

Paula Briggs, *Liverpool, UK*

This presentation will cover:

- Existing treatment options both hormonal and non-hormonal
- How to risk assess patients
- New treatment options including neuroendocrine antagonist drugs
- Top line data from Oasis 4 (a trial of Elinzanetant (NK 1/3) in women with breast cancer)
- CO2 laser therapy and its use in women with Genitourinary Syndrome of Menopause

ROUND TABLE DISCUSSION ON TRICKY ONCOPLASTIC/ RECONSTRUCTIVE TOPICS

Case presenters:
Rajiv Dave, *Manchester, UK*
Kenneth Elder, *Edinburgh, Scotland, UK*

This session will take the form of discussions around case presentations of challenging oncoplastic decisions. Each case will be presented with a step-by-step decision-making junction, allowing for audience participation via Slido, followed by discussion by the expert panel. This format aims to understand the current practice amongst attendees and stimulate discussion around controversies of breast oncoplastic surgery.

TNBC SUBTYPES: DO THEY HAVE CLINICAL SIGNIFICANCE?

Matthew J. Ellis, *Houston, TX, USA*

Despite advances in our understanding of the molecular basis of triple negative breast cancer this subtype still largely treated based on the absence of estrogen receptor, progesterone receptor and amplification of HER2, i.e. defined by what it is not, what it is. The exception is the presence of germline predisposition genes, BRCA1, BRCA2 and PALB2 which requires treatment with a PARP inhibitor. The efficacy of pembrolizumab, unlike other malignancies, was not dependent on PDL1 expression in the KEYNOTE 522 neoadjuvant/adjuvant study, despite many TNBC exhibiting tumor immune infiltrates. Thus, even immune checkpoint inhibition is not biomarker driven in TNBC. Why the paucity of useful biomarkers to direct therapy in TNBC? RNA profiling appeared promising when first proposed for over a decade ago (Asleh, Riaz, and Nielsen 2022). Lehman et al proposed 6 subtypes, basal-like 1, basal-like 2, immunomodulatory, luminal androgen receptor (LAR), mesenchymal and mesenchymal stem-like (MSL) based on unsupervised clustering. A 2016 revison TNBC-type4 classification includes basal-like 1, basal-like 2, mesenchymal and LAR categories, among which basal-like 1 had a higher pathologic complete response rate (pCR) after neoadjuvant chemotherapy and a better OS. Another TNBC molecular classification, first presented by Burstein and colleagues in 2015, identified four transcriptomic subtypes termed basal-like immune activated (BLIA), basal-like immune suppressed (BLIS), LAR, and mesenchymal – thus similar to Lehman approach. Of these four categories, survival outcomes were most favorable for BLIA and worst for BLIS. The proportion of each type is as follows BLIA (20–30%), BLIS (25–40%), LAR (15–25%), and mesenchymal (15–20%). BLIA tumors should be the most responsive to immune check point blockade, but as yet there is no evidence to date that the efficacy of pembrolizumab is sufficiently restricted to this single group to exclude its use from other subtypes.The LAR subtype is negative for ER expression by IHC, but high expression of estrogen-related genes (e.g., FOXA1, GATA3, PGR and XBP1), PIP, MUC1 and increased androgen receptor signalling suggests the use of AR antagonists, but efficacy has been modest. The LAR subtype may harbor more ERBB2 mutations when compared to other TNBC subtypes. However standard of care HER2 wildtype inhibitors have not proved sufficiently effective against common mutants to be approved. The approval of capversertib in ER+ HER2- breast cancer should excite interest in the therapy of this subset as PIK3CA mutations are present in 40–55% and increased phosphorylation of AKT1 and AKT2 is present. The mesenchymal subtype of TNBC is enriched for pathways involved in extracellular matrix, epithelial-mesenchymal-transition and angiogenesis expressing EGFR, IGF-1, osteocyte markers (OGN), NOTCH1 and NOTCH3. Mesenchymal tumors have been reported to display higher genomic instability, tumor mutation burden and copy number alterations than other subtypes, while characterized by low immune cells and PDL1 expression, suggesting that they have developed immune-evasive mechanisms contributing to their resistance to immunotherapy. No specific therapies have yet evolved for this subtype either, but they are likely to have unexplored defects in DNA repair. The lack of clinical utility of transcriptomic subtypes suggests a complementary approach is required. The opposite approach to unsupervised clustering algorithms is a supervised analysis whereby tumors that adequately respond to treatment are compared to those that do not, i.e. pCR versus no pCR in response to neoadjuvant chemotherapy. A pCR predictor would have clinical value. The treatment of patients with predicted sensitive tumors could be de-escalated. Patients with predicted resistant tumors could be given investigational regimens earlier, based on an understanding of resistance. Clinical Proteomics Tumor Analysis Consortium-funded

investigators therefore deployed microscaled proteogenomics to probe the molecular basis for differential response to neoadjuvant carboplatin and docetaxel combination chemotherapy for triple-negative breast cancer (TNBC) (Anurag et al. 2022). Proteomic analyses of pretreatment patient biopsies uniquely revealed metabolic pathways, including oxidative phosphorylation, adipogenesis, and fatty acid metabolism, that were associated with resistance. Both proteomics and transcriptomics revealed that sensitivity was marked by elevation of DNA repair, E2F targets, G2–M checkpoint, interferon- gamma signaling, and immune-checkpoint components. Proteogenomic analyses of somatic copy-number aberrations identified a resistance-associated 19q13.31–33 deletion where LIG1, POLD1, and XRCC1 are located. In orthogonal datasets, LIG1 (DNA ligase I) gene deletion and/or low mRNA expression levels were associated with lack of pathologic complete response, higher chromosomal instability index (CIN), and poor prognosis in TNBC, as well as carboplatin-selective resistance in TNBC preclinical models. Hemizygous loss of LIG1 was also associated with higher CIN and poor prognosis in other cancer types, demonstrating broader clinical implications. Currently laboratory investigations are underway to understand the phenotype of LIG1 deleted tumors, which can occur in both BRCA mutant cases as well as BRCA wt cases, but always in the presence of TP53 mutation. Modeling using CRISPR Cas 9 suggests that the absence of adequate DNA Ligase 1 function causes upregulation of MGMT, explaining carboplatin resistance. The current focus is on whether there are therapeutic approaches that are specific to the LIG1-deleted subset of TNBC which comprises of ~25% of the non pCR population.The above findings were based on frozen core needle biopsies which are hard to obtain, and the sample sizes are consequently small. New, more sensitive, mass spectrometry proteomics techniques can now deeply profile proteins from formalin-fixed tissue, starting with as little as 10ng of protein (Chambers et al. 2023). Thus, large scale proteogenomic analysis of TNBC is now possible. A consortium to build a large discovery data base that includes thousands of cases should be now considered.

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Asleh, K., N. Riaz, and T. O. Nielsen. 2022. 'Heterogeneity of triple negative breast cancer: Current advances in subtyping and treatment implications', J Exp Clin Cancer Res, 41: 265.

Chambers, A. G., D. C. Chain, S. M. Sweet, Z. Song, P. L. Martin, M. J. Ellis, C. Rooney, and Y. J. Kim. 2023. 'Mass spectrometry quantifies target engagement for a KRASG12C inhibitor in FFPE tumor tissue', Clin Proteomics, 20: 47.

"WHY MY ASSAY IS BEST" - PAM50

Matthew J. Ellis, *Houston, TX, USA*

The PAM50 was published in 2009 and has the third highest number of citations for any article in the Journal of Clinical Oncology. Consequently, the paper was republished in 2023 to celebrate, a testament to its impact over the years . Arguably all RNA profiling tests have their roots in the original paper in Nature where unsupervised clustering of microarray data from frozen tumors was described . Since then, at least five RNA profiling tests have been developed and are variably used in different counties, all for outcomes prediction in ER+ HER2- disease to assist in adjuvant therapy decisions. Various technologies are used, from qRT PCR to microarray, but only one uses nanotechnology in the form of the Nanostring nCounter – the PAM50 derived assay Prosigna. Nanostring technology was designed to produce accurate measurements of gene expression from fragmented RNA from formalin-fixed tissue over a wider and more linear quantification range than other technologies. As a result, the assay was awarded a 510k approval for a distributed test in the USA as well as European device approval and is now available in 24 counties around the world, several of which now use the system exclusively because of the ability to do in-country testing. Other tests are limited to one or two laboratories for global testing, possibly due to inter-laboratory concordance issues. In terms of the comparative performance of Oncotype, Prosigna, Breast Cancer Index and EndoPredict, this was assessed in samples from the ATAC trial where 10 years of follow up is available . The assays providing the most prognostic information in node negative disease were the ROR (Prosigna) (hazard ratio [HR], 2.56; 95% CI, 1.96-3.35), followed by the BCI (HR, 2.46; 95% CI, 1.88-3.23) and EPclin (HR, 2.14; 95% CI, 1.71-2.68). Each provided significantly more information than the Clinical Treatment Score (HR, 1.99; 95% CI, 1.58-2.50), the recurrence score (Oncotype) (HR, 1.69; 95% CI, 1.40-2.03), and the 4-marker immunohistochemical score (HR, 1.95; 95% CI, 1.55-2.45). There were too few node-positive cases for a definitive conclusion. For lymph node positive breast cancer, Prosigna has shown prognostic performance in the TransATAC and ABCSG-8 retrospective validation trials and in a large Danish registry study. Comparative data are less robust, with too few lymph node positive cases in the TransATAC analysis to reach a definitive conclusion. However, comparison data from the OPTIMA-prelim study show only modest concordance between Prosigna, Oncotype, and MammaPrint; long-term outcomes from this cohort are pending. The recent DG58 NICE evidence review supports use of Prosigna, OncotypeDx and EndoPredict for adjuvant therapy guidance in N1 post-menopausal women. A standout difference between the three tests above and Prosigna is the provision of the intrinsic subtype as a diagnostic label that is complementary to the risk score. Intrinsic subtypes are comprised of two luminal subtypes, Luminal A (LumA), better prognosis ER+ and Luminal B (LUMB), worse prognosis ER+ and two non-luminal subtypes, basal-like (BSL) and HER2-enriched (HER2-E) (where the majority HER2 amplified, but not exclusively so). Intrinsic subtype is now included in the Prosigna assay report in the USA and has been from launch in Europe. Mammaprint provides a similar subtyping approach, so provision of intrinsic subtype is not unique to Prosigna. In the original Parker et al paper, evidence was presented that subtype was predictive of pCR to neoadjuvant chemotherapy. An interesting development that builds upon the premise that the PAM50 may be useful for neoadjuvant decisions in the ER+ HER2- setting is an analysis of the neoadjuvant endocrine therapy (NET) trial ALTERNATE that compared anastrozole 1mg, fulvestrant 500mg and the combination for 6 months . Patients with a Ki67 >10% at 4 weeks were triaged to neoadjuvant chemotherapy. PAM50 subtyping derived from RNA sequencing of baseline biopsies, available for 753 patients (58%), identified 394 luminal A, 304 luminal B, and 55 non-luminal tumors. A+F led to a greater week 4 Ki67 suppression than anastrozole alone in luminal B tumors (median [IQR], -90.4% [-95.2 to -81.9%] vs -76.7% [-89.0 to -55.6%]; P < .001), but not luminal A tumors. These results are provocative from the perspective of the new generation of oral SERDS as enhanced efficacy over an AI may be more apparent in Luminal B tumors, perhaps in combination with an AI. Non-luminal BC was found in 7.3% of patients in the PAM50 cohort despite high ER levels required for eligibility. Patients with ERBB2-enriched or basal-like tumors fared poorly on NET: 36 (65.5%) discontinued NET due to week 4 or week 12 Ki67 greater than 10%, 2 (3.6%) experienced progression while receiving NET, 13 (23.6%) had a mPEPI greater than 0, and only 1 (1.8%) had an mPEPI 0 (trial endpoint justifying continued treatment with the assigned treatment arm); in 3 patients (8.6%), mPEPI could not be determined. When triaged to neoadjuvant chemotherapy because the 4-week Ki67 was >10% the pCR rate was 20% for HER2-E tumors, higher than the overall rate of 4.8%. There were too few basal-like tumors to provide an estimate. The pCR rate in Luminal A or Luminal B tumors was negligible. These results have management implications. When an ER+ HER2- negative tumor is assigned to a non-luminal subtype, NET should be considered contraindicated and neoadjuvant chemotherapy

preferred. Clearly these results are supportive of the ongoing OPTIMA trial that is studying randomized chemotherapy de-escalation in ER+ HER2- tumors with an ROR of ≤60 against a control arm where all get chemotherapy due to a high-risk setting of larger tumors and positive lymph nodes. In conclusion, Prosigna/PAM50 is an approved, distributed test with a high-level of technical and clinical validation in node negative and limited N+ breast cancer based on excellent outcomes for lower ROR tumors upon treatment with endocrine therapy alone. The provision of intrinsic subtype is a potentially useful tool for higher risk tumors when considering neoadjuvant approaches.

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DEBATE:
THAT A CHANGE TO RISK-ADJUSTED SCREENING IS URGENT AND FEASIBLE. NO

Cliona C. Kirwan, *Manchester, UK*
Professor of Surgery, University of Manchester, UK

The NHS Breast Screening Programme was introduced in 1988, and offered 3-yearly mammography for women aged 50-65. The upper age limit has now been increased to 70 years old, and the age-extension trial is assessing breast screening for women aged 47-49 and 71-73. This applies to all women managed outwith a dedicated 'high-risk' screening programme. Screening programmes and guidance for screening in average risk women vary widely around the world, with for example American College of Physicians, Cancer Australia and Ministry of Health of Singapore recommending biennial screening for age 50-74 years, and based on shared decision making above 40; with the American College of Radiology, American Cancer Society and The Brazilian College of Radiology and Diagnostic Imaging recommending annual mammograms in women ≥ 40 years; the European Commission Initiative on Breast Cancer recommending biennial or triennial mammography screening from age 45-74, and with Canadian Task Force on Preventive Health Care having similar guidance but age 50-74. In a scenario where evidence lags so far behind current imaging and treatment, I will put forward the argument that a change to risk-adjusted screening is NOT urgent and feasible.

HYPE OR HOPE: BREAST IMAGING AND ARTIFICIAL INTELLIGENCE

Gerald Lip, *Aberdeen, Scotland*

Dr Lip will take the audience through an introduction to the current state of breast screening in the UK and internationally. He will review the most recent papers on screening AI and discuss the art of the possible tempered by the very real challenges in the path to future implementation.

THE 'NEW GENES': WHAT DO THEY MEAN FOR PATIENTS AND FAMILIES?

Jennie Murray, *Edinburgh, Scotland, UK*

This talk will briefly reflect on advances in breast cancer genetics over the last 3 decades and detail those genes which are now generally acknowledged to form a core diagnostic breast cancer gene panel. Describe current risk stratification and management options in individuals following identification of a pathogenic variant in one of these genes and acknowledge worldwide variation. Reflect on own centre experience and limitations in optimising care.

DEBATE: THAT ADJUVANT CDK4/6 INHIBITORS SHOULD BE RECOMMENDED FOR INTERMEDIATE RISK ER POSITIVE HER2 NEGATIVE EBC. NO

Alistair Ring, *London, UK*

The use of the CDK4/6i, Abemaciclib, has an established role in the adjuvant treatment of patients with high-risk early breast cancer, defined as those with 4 or more axillary lymph nodes, or 1 to 3 nodes with either T3/T4 and/or G3 disease. In this population, the addition of Abemaciclib to standard endocrine therapy improves invasive disease-free survival by 7.6% and distant recurrence free survival by 6.7% (1). Abemaciclib was not studied in women with lower risk breast cancer and is therefore not indicated or approved outside of this high-risk population. In contrast, the PALLAS study, which included patients with both higher risk cancers (approximately 59% of the population had an equivalent risk to patients enrolled in the MONARCHe study), and also intermediate risk cancer, did not show an improvement in invasive disease-free survival for the addition of the alternative CDK4/6 inhibitor Palbociclib to standard endocrine therapy (2). There are a number of potential explanations for the contrasting results, but they include a limited (or absent) benefit in the intermediate risk group concealing any benefit in higher risk patients. More recently we have seen the interim results of the NATALEE study (3). This study recruited patients with stage II and III breast cancer. Patients with stage IIB or III disease were allowed to participate in the trial irrespective of nodal status. Patients with stage IIA disease were eligible if they had at least one lymph node involved; patients who had no nodal involvement were eligible if they had a grade 3 tumour, high genomic risk or had a grade 2 tumour with a Ki-67 proliferation index. At a median follow-up of 27.7 months, adjuvant Ribociclib plus endocrine therapy significantly improved IDFS compared with endocrine therapy alone (HR, 0.75 [95% CI, 0.62 to 0.91]; P 5 .003) (3). This is the only adjuvant CDK4/6i study which has recruited intermediate risk patients and demonstrated a benefit from the addition of a CDK4/6i in the adjuvant setting. However, when one focuses on the 613 node negative patients, the absolute benefits are small: with a 3 year invasive disease free survival of 93.2% (endocrine therapy and Ribociclib) vs 90.6% (endocrine therapy) (not-significant) (4). When one takes into account the prolonged (3-year duration) therapy, toxicity (including nausea and liver toxicity) and cost, it is hard to justify the use of adjuvant CDK4/6i in the intermediate risk/node negative population (5).

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2. *Mayer, E et al. Lancet Oncology 2021;22(2):212-222.*
3. *Slamon D, et al. N Engl J Med 2024;390:1080-91.*
4. *Yardley D, et al. ASCO annual meeting 2004.*
5. *Freedman R et al. ASCO Guideline Rapid Recommendation Update. J Clin Oncol 2024*

DEBATE:
ASYMPTOMATIC PATIENTS WITH HIGH-RISK TNBC SHOULD UNDERGO SURVEILLANCE IMAGING. NO

Alistair Ring, *London, UK*

For patients who have completed treatment for early breast cancer, national and international guidelines recommend annual or biennial

breast imaging, but do not support routine CT, bone scan or PET-CT (1,2). Randomized controlled trials conducted a number of years ago failed to demonstrate a survival advantage to routine surveillance for metastatic disease (3). It could be argued that this question should be re-visited in the context of more contemporary imaging strategies. However, for follow-up imaging surveillance to be justified a number of criteria should be fulfilled, including that tests should have high positive and negative predictive values, therapy should be available that will result in cure or significant prolongation of life and that earlier therapy should improve outcome (4). It will be argued that surveillance imaging following high risk TNBC does not fulfil these criteria. There are three potential outcomes if surveillance imaging, for example in the form of a CT, are performed. The first of these is that the scan is clear, which may provide some (short-term) reassurance, but does not guarantee that a recurrence will not occur in the future, and there is likely to be anxiety associated with the scan itself, radiation exposure and expense incurred. Alternatively, the scan may show indeterminate/incidental findings. This may lead on to additional imaging (and radiation exposure), biopsies (with attendant risks), expense and anxiety. Finally, the scan may identify (low volume) asymptomatic relapse. This would provide the opportunity for early treatment of metastatic disease. However, there is no strong evidence that early treatment increases the chances of cure, and whilst survival may be improved this will be as a result of lag time bias, and treatment given in this setting stands a high risk of compromising quality of life.

1. *NCCN Guidelines Version 4.2024.*
2. *Wilson et al, J Clin Oncol 2024.*
3. *Moschetti I et al. Cochrane database Syst Rev 2016:CD001768, 2016*
4. *Edelman MJ, et al. J Gen Intern Med 12:318-331, 1997*

DEBATE:
THE CEM SHOULD BE THE SURVEILLANCE IMAGING TEST FOR MOST PATIENT WITH PAST HISTORY OF BREAST CANCER. YES
Allison Rose, *Melbourne, Australia*

The following paper forms the basis of the YES campaign
Julia Matheson, Kenneth Elder, Carolyn Nickson, Allan Park, Gregory Bruce Mann, Allison Rose. Contrast Enhanced Mammography for Surveillance in Women with a Personal History of Breast Cancer. BCRT July 4, 2024

***Purpose*:** Women with a personal history of breast cancer have an increased risk of subsequent breast malignancy and may benefit from more sensitive surveillance than conventional mammography (MG). We previously reported outcomes for first surveillance episode using contrast-enhanced mammography (CEM), demonstrating higher sensitivity and comparable specificity to MG. We now report CEM performance for subsequent surveillance. ***Methods*:** A retrospective study of 1,190 women in an Australian hospital setting undergoing annual surveillance following initial surveillance CEM between June 2016 and December 2022. Outcome measures were recall rate, cancer detection rate, contribution of contrast to recalls, false positive rate, interval cancer rate and characteristics of surveillance detected and interval cancers. ***Results*:** 2,592 incident surveillance episodes were analysed, of which 93% involved contrast-based imaging. Of 116 (4.5%) recall episodes, 40/116 (34%) recalls were malignant (27 invasive; 13 ductal carcinoma in situ), totalling 15.4 cancers per 1000 surveillance episodes. 55/116 (47%) recalls were contrast-directed including 17/40 (43%) true positive recalls. Tumour features were similar for contrast-directed recalls and other diagnoses. 8/9 (89%) of contrast-directed invasive recalls were Grade 2–3, and 5/9 (56%) were triple negative breast cancers. There were two symptomatic interval cancers (0.8 per 1000 surveillance episodes, program sensitivity 96%). ***Conclusion*:** Routine use of CEM in surveillance of women with PHBC led to an increase in the detection of clinically significant malignant lesions, with a low interval cancer rate compared to previous published series. Compared to mammographic surveillance, contrast-enhanced mammography increases the sensitivity of surveillance programs for women with PHBC

CONTRAST BASED IMAGING (CBI) IN SCREENING
Allison Rose, *Melbourne, Australia*

Mammographic Screening of the population based on age, with a “one-size-fits-all” approach has achieved excellent results for 4 decades but does not serve all women equally. The interval cancer rate, an important metric in the assessment of the success of screening, is higher in women with high mammographic density. The sensitivity profile for biologically relevant disease is poorer than that with functional tests (CBI-Magnetic Resonance imaging [MRI]and Contrast Enhanced Mammography [CEM]). There is a need to profile risk in the population and identify those who need more sensitive functional CBI and those who may safely continue with conventional methods. Usual risk assessment tools are rapidly being supplemented by AI programs which will become pivotal in large scale implementations. Risk adjusted screening should lead to identification of more women with biologically relevant disease earlier, and reduce interval cancers, with further mortality reduction. MRI and CEM re functional imaging tools detecting tumour neoangiogenesis. MRI in population screening (DENSE TRIAL The Netherlands) detected an additional 16/1000 cancers (3 times mammographic screening rate). Interval cancers ~0.8/1,000=5-fold reduction. Estimated to be cost-effective 3-4 yearly. Detection and excision/treatment of occult cancers contributes to reduction in underdiagnosis, success of Breast Conserving Surgery (BCS) and lower rates of local, regional, and distant recurrence. (PROSPECT Trial Australia). There is limited evidence for screening with CEM despite exponential increase in published literature about uses. Meta-analyses suggest that CEM has slightly lower sensitivity than MRI. On a population basis, cost-effectiveness, and accessibility of CEM are likely to balance the small reduction in sensitivity but both modalities will be needed. There is a global shortage of breast specialized radiologists and radiographers. We need a major recruitment campaign to attract Radiologists & Radiographers to the subspecialty. AI will alleviate some workforce issues in mammographic screen reading. However, Breast Radiologists will need substantial upskilling to manage the contrast based imaging load and AI will need to be developed. We also need better modelling programs to predict success ahead of outcomes of RCTs which would introduce significant delays. A pivotal question for interpretation of oncological data in the future will be consideration of which modalities were used to diagnose, biopsy, treat and follow up image detected cancers. The success of CBI overall will increasingly hinge on enough pre-operative biopsy with direct visualisation of contrast lesions, CBI for follow up and alterations in surgical approach so that the COMICE outcomes (unnecessarily increased mastectomy rates, delay in treatment, and unchanged outcomes) will not be re-visited.

DEBATE:
CEM SHOULD <u>NOT</u> BE THE SURVEILLANCE IMAGING TEST FOR <u>MOST</u> PATIENTS WITH PAST HISTORY OF BREAST CANCER
Sarah Savaridas, *Dundee, Scotland, UK*

The aim of any screening programme is to reduce cancer-specific death, with a secondary aim of reducing cancer related morbidity. Surveillance following in patients with a personal history of breast cancer (PHBC) is a form of screening within a high-risk population. There is an increasing body of evidence that contrast enhanced mammography (CEM) can identify more cancers than full field digital mammography alone, in at least some patients. However, there is minimal – if any – evidence of improved survival. Furthermore, it is unlikely that the benefit of CEM outweighs risk for many patients, and the additional resource required cannot be justified for most patients. I will explore the importance of surveillance imaging, and the risk and benefits of CEM for sub-groups of patients with a past history of breast cancer. Whilst CEM *may* be appropriate in select cases, there is insufficient evidence for widespread adoption.

DEBATE:
THAT MOST PATIENTS WITH DCIS SHOULD HAVE RADIOTHERAPY AFTER BREAST CONSERVING SURGERY. YES
Frank Vicini, *Farmington Hills, MI, USA*

Adjuvant radiation therapy (RT) is a mainstay in the management of DCIS after BCT, with studies demonstrating >50% relative reduction in IBR independent of clinicopathologic (CP) factors. Given the lack of a survival benefit, studies have looked to omit RT following breast conserving surgery (BCS) to de-intensify therapy. The ECOG 5194 trial evaluated omission of RT following BCS from Grade 1/2 and 3 cohorts. Long-term follow up demonstrated elevated rates of IBR with 15% of Grades 1-2 and 25% of Grade 3 patients developing IBR at 12 years, with no plateau reached. Similar results were seen in RTOG-9804, which randomized patients with favorable CP features to +/- RT following BCS with elevated rates of recurrence at 15 years with no RT (15% vs. 7%). However, these results demonstrate that CP criteria alone do not reliably

identify a low-risk cohort of patients that do not benefit from RT following BCS leaving clinicians to question guidelines that recommend CP criteria alone to identify patients suitable for RT omission. Beyond CP criteria, nomograms (MSKCC) and the VNPI have been developed. While studies demonstrate these may be prognostic regarding IBR, there is no consistent external validation evidence, and they are *not* predictive of RT benefit. Considering 50% of IBRs are invasive after BCS (analysis of the B17/24 trials found increased breast cancer mortality), these data suggest care must be taken to avoid omitting RT using CP criteria alone. Mortality in patients with invasive IBRs are 150% higher, with no CP factors available to accurately identify very high-risk cases requiring more aggressive local therapy (boost, wider margins) as explored in NSABP B43. We recently showed that >53% of cases listed as low-risk by NCCN CP criteria were actually high-risk using molecular markers and had statistically significant reductions (>50%) in IBR with RT at 10-years. Similarly, >50% of patients using either the MSKCC nomogram, ECOG 5194 criteria or any other CP classification scheme incorrectly identified a true low-risk population that did not benefit from RT. Although not all patients with DCIS are high-risk using CP standards alone, clinicians must be careful not to de-intensify treatment inappropriately. Even in true low-risk ER(+)DCIS, short course RT compared to endocrine therapy (ET) should be a default treatment approach considering the long-term sequelae of ET on bone health, heart disease, second cancers, blood clots and QOL with >50% of patients noncompliant with ET at 2 years and no difference in DFS or OS with RT alone. Given the publication of multiple trials supporting equivalent 10yr IBR rates with shorter (≤5 days), less toxic, more convenient RT schedules (APBI, FAST FORWARD), with improved QOL, until better methods to identify true low-risk patients (molecular markers) are incorporated into shared decision making, the default recommendation for treatment of DCIS after BCS must consider adding RT.

FREE PAPER ABSTRACTS

ADJUVANT ENDOCRINE THERAPY

IDENTIFYING OESTROGEN RECEPTOR-RELATED GENES OF PREDICTIVE VALUE IN BREAST CANCER

Shorouk Makhlouf[1,2], Nabeelah Almalki[1,3], Amera Sheha[1,4], Nehal Atallah[1,5], Asmaa Ibrahim[1,6], Michael Toss[1,7], Nigel Mongan[8,9], Emad Rakha[1,10]

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***Problem statement*:** Oestrogen receptor-positive (ER+) breast cancer (BC) patients vary in their response to endocrine therapy (ET) and some patients experience recurrences. Therefore, ER expression alone does not predict ET response, and further prognostic and predictive indicators are needed. The ER-related genes may play a role in responding to ET. In this study, we aimed to investigate how the expression of key ER-related genes can help predict patient outcomes using large BC cohorts. ***Methods*:** We evaluated the mRNA and protein expression of 21 ER-related genes. We used publicly available transcriptomic data from several datasets to assess the expression of *ESR1* and ER-related genes. Additionally, a large, well-characterised BC cohort from Nottingham City Hospital (n=4000) was used for immunohistochemistry to evaluate protein expression. The sensitivity and specificity for each biomarker to ER expression were calculated. We then conducted an analysis to determine the correlation between the expression of ER-related biomarkers and survival outcomes in ER+ BC, utilising individual and combinational biomarker expression. ***Results*:** Among the ER-related genes that were studied, *GREB1*, *PGR*, *AR*, and *BEX1* have been found to have established prognostic value in ER+ breast cancer at both the transcriptomic and proteomic levels. *GREB1* and *PGR* were identified as independent prognostic and predictive markers in multivariate Cox Regression analyses, showing the highest specificity to ER. Based on gene transcriptomic and protein expression analyses, the combined expression of *GREB1* and *PGR* was determined to be the most reliable predictor of response to ET. ***Conclusion*:** Understanding and targeting ER downstream signalling could enhance our knowledge of ER+ BC and pave the way for innovative treatment options. GREB1 shows promise as a therapeutic target for ER+ BC, surpassing well-known ER-related genes as a specific and powerful prognostic biomarker for ER. When used in conjunction with PR, GREB1 could serve as a signature for sensitivity to ET.

BREAST CANCER GENETICS

FACTORS INFLUENCING IMMEDIATE RECONSTRUCTION AND COMPLICATIONS FOR GENE CARRIERS IN THOSE UNDERGOING MASTECTOMY IN KCONFAB POPULATION

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Problem statement: Immediate reconstruction after therapeutic or prophylactic mastectomy (IMR) is oncologically safe and confers improved quality of life. However, in Australia the IMR rate is only 17-18% (with considerable variation across states and sites). Factors influencing reconstruction decisions and complications are not well studied. This study aimed to identify which patients in the KConFAb database have had mastectomy with or without reconstruction and factors influencing the uptake of immediate reconstruction. ***Methods***: A retrospective analysis of the kConFab database was performed from January, 2010 to December, 2021 to identify the patients who have had mastectomy and whether the mastectomy was for cancer or for prophylaxis. Patient demographics and tumour characteristics, as well as treatment and complications were collected. ***Results***: We included 477 patients in the study. 452 (94.5%) underwent IMR, 326 of which had an autologous reconstruction. 60.8% of patients had nipple preservation surgery. 72.5% of the patients lived in a metro region, 53.1% had private health insurance, and 89.5% were of Caucasian ethnicity. 41.4% of patients reported a complication and 23.7% required removal of a breast reconstruction. Patients living in Victoria were more likely to be offered an immediate reconstruction. Caucasian patients were more likely to have had an immediate reconstruction compared to those of middle eastern ethnicity. ***Conclusion***: Patients living in remote areas of Australia and those of diverse background were less likely to access IMR. Further analysis of risk factors that may lead to higher rates of post-operative complications is required to improve service delivery and understand lived experience.

BREAST IMAGING

MAMMOGRAPHIC SURVEILLANCE IN EARLY BREAST CANCER PATIENTS AGED 50 YEARS OR OVER: RESULTS OF THE MAMMO-50 NON-INFERIORITY TRIAL OF ANNUAL VERSUS LESS FREQUENT MAMMOGRAPHY

Janet Dunn[1], Peter Donnelly[2], Nada Elbeltagi[1], Andrea Marshall[1], Alastair Thompson[3], Riccardo Audisio[4], Sarah Pinder[5], David Cameron[6], Amy Campbell[1], Sue Hartup[7], Lesley Turner[8], Annie Young[1], Helen Higgins[1], Eila Watson[9], Sophie Gasson[1], Peter Barrett-Lee[10], Claire Hulme[11], Bethany Shinkins[1], Peter Hall[6], Andy Evans[12]

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Problem statement: Annual surveillance mammograms for an unspecified period, after treatment for early breast cancer, are widely practised in USA and Europe. UK guidelines recommend annual mammograms for 5 years then reverts to 3-yearly screening. Evidence is needed to determine the optimum frequency and duration of mammographic surveillance. ***Methods***: Multi-centre, randomised phase III trial of annual mammography versus 2-yearly after conservation surgery or 3-yearly mammograms after mastectomy up to 9 years. Women were eligible if aged 50 years or over at initial diagnosis of breast cancer (invasive or DCIS), and recurrence free 3 years post curative surgery. Primary outcome was breast cancer specific survival (BCSS). Secondary outcomes include recurrence free interval (RFI) and overall survival (OS). 5000 women provided 85% power to detect a 3% absolute non-inferiority (NI) margin for BCSS with 2.5% one-sided alpha. ***Results***: 5235 women were randomised between April 2014 and September 2018. 4347 (83%) women were aged 55-75 years, 4203 (80%) had undergone conservation surgery, 4576 (87%) had invasive disease, 1162 (22%) had node positive disease, 4330 (83%) had ER positive tumours. With a median of 5.7 years follow-up, 343 women have died; 104 of breast cancer (53 on annual arm; 51 on less frequent arm). BCSS at 5 years was 98.1% (95% CI 97.5-98.6%) on annual arm and 98.3% (95% CI 97.8-98.8%) on less frequent arm. Hazard ratio (HR) of 0.92 (95% CI 0.64-1.32) demonstrated NI of less frequent mammograms at the 3% margin (NI p0.0001) and the 1% margin (NI p=0.003). Five-year RFI was 94.1% (95% CI 93.1-94.9%) and OS was 94.7% (95% CI 93.8-95.5%) for the annual arm and 94.4% (95% CI 93.4-95.3%) and 94.5% (95% CI 93.5-95.3%) respectively for the less frequent arm. NI was demonstrated at the 2% level for both RFI (HR 1.03 (95% CI 0.83-1.28); NI p=0.006) and OS (HR 1.07 (95% CI 0.87 -1.33); NI p=0.008). ***Conclusion***: For patients aged 50 years or older and 3 years post diagnosis, less frequent mammograms were no worse than annual mammograms and therefore should be considered for this patient population.

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ENDOCRINE RESISTANCE

SOMETHING OLD, NEW OR BORROWED: OPTIMUM SECOND LINE THERAPY AFTER CDK4-6 INHIBITION

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Problem: Capecitabine is an old drug, used for metastatic breast cancer (MBC) treatment since the 1990s. Everolimus was borrowed from the renal cancer space in the 2010s. Although both agents are employed in everyday practice after progression on CDK4/6 inhibitors, several new agents have been trialled for this indication, generally combined with an anti-estrogen versus the same anti-estrogen alone, arguably a sub-optimal second line therapy compared to other standard options. ***Methods***: We assessed patients treated with CDK4/6 inhibitors for MBC at a single tertiary institution 2014-2024. Baseline patient, tumour demographic and treatment data were collated from medical and pharmacy records. Progression-free (PFS) and overall survivals (OS) for second-line treatments were calculated and the impact of patient factors and previous treatments appraised. ***Results***: 166 patients commenced a CDK4/6 inhibitor of whom 81 progressed and proceeded to next line therapy. Of these, 43 received capecitabine, 17 everolimus and exemestane, and 10 taxane-based treatment with PFS of 7.0, 8.0 and 9.0 months respectively. No patient stopped therapy due to toxicity. In contrast five patients on single agent endocrine therapy had a PFS of 3 months. These control periods for these low-cost standard treatments are comparable with PFS for capivasertib (Capitello 291 study – 7.2 months), alpelisib (BYLieve – 6.2 months) and elasestrant (EMERALD study – 2.8 months). No differences in second line PFS or OS were noted for ductal versus lobular cancer, HER2 null versus low, previous anti-estrogen versus not, or ribociclib versus palbociclib. However, PFS was longer for initially grade 1-2 versus grade 3 disease (11.0 v 5.0 months, p0.0001) and correspondingly for OS from initiation of second-line therapy (28.0 v 15 months). Interestingly, although patients with de novo metastases had longer PFS on CDK4/6 inhibitors than those that had relapsed (PFS 39.5 v 19.1 months, P=0.0089), the reverse was true on second line therapy (PFS 6.0 v 7.5 months, p=0.019). ***Conclusion***: Older low-cost treatment options appear equally efficacious and well-tolerated compared to more expensive recent developments. Invasive grade remains a central definer of response duration and survival throughout the disease course. Whether it should impact treatment choice remains to be defined.

HER2 POSITIVE BREAST CANCER

A MORPHOMETRIC SIGNATURE FOR HER2 ACTIVITY PREDICTS RECURRENCE RISK IN BREAST CANCER

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Introduction: Human epidermal growth factor receptor 2 positive (HER2+) breast cancer (BC) is a heterogenous disease. In this study, we hypothesised that the degree of HER2 oncogenic activity and hence response to anti-HER2 therapy is translated into morphological signature. We aimed to characterise the morphometric signature of HER2+ tumours and their prognostic/predictive value. ***Methods***: We developed a HER2-driven signature based on a set of morphometric features identified through digital image analysis and visual assessment in a sizable cohort of BC patients. HER2-enriched molecular subtype (HER2-E) was used for validation and pathway enrichment analysis was performed to assess HER2 pathway activity in the signature-positive cases. The predictive utility of this signature was evaluated in post adjuvant HER2+ BC patients. ***Results***: A total of 57 morphometric features were evaluated, of them 22 features were significantly associated with HER2 positivity. HER2 IHC score 3+/ oestrogen receptor (ER) negative tumours were significantly associated with HER2 related morphometric features compared to other HER2 classes including HER2 IHC 2+ with gene amplification and they showed the least intra-tumour morphological heterogeneity. Tumours displaying HER2 driven morphometric signature showed the strongest association with PAM50 HER2-E subtype and were enriched with ERBB signalling pathway compared to signature negative cases. BC patients with positive HER2 morphometric signature showed prolonged distant metastasis free survival (DMFS) post adjuvant anti-HER2 therapy (p=0.007) than those with negative signature. The clinico-morphometric prognostic index demonstrated an 87% accuracy in predicting recurrence risk. ***Conclusion***: Our findings underscore the strong correlation between HER2-E subtype and a set of HER2-driven morphometric features and emphasising their potential as predictors of response to anti-HER2 therapy. Furthermore, the study illuminates the morpho molecular interplay between oestrogen expression and HER2+ BC.

LOCOREGIONAL THERAPY

VARIATION IN PRACTICE AND PROVISION OF CONTRALATERAL SYMMETRISING MASTECTOMY AFTER UNILATERAL MASTECTOMY FOR BREAST CANCER: A UK NATIONAL PRACTICE SURVEY

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***Problem statement*:** Most women desire symmetry following breast cancer surgery. For women who do not want, or who are not suitable for reconstruction post mastectomy, this is may be achieved using an external prosthesis. However, these can be heavy and/or uncomfortable, achieve symmetry only when dressed, and may impact confidence when pursuing physical activities. Women also report feeling self-conscious or 'lopsided' and that asymmetry and dissatisfaction with body image may significantly impact quality of life. We aimed to survey current UK practice and provision of contralateral symmetrising mastectomy (CSM) as an alternative to breast reconstruction for women undergoing unilateral mastectomy for breast cancer. ***Methods*:** An online survey was developed and circulated via social media and the UK professional breast surgery associations to explore the existence and components of current pathways for women seeking CSM, and the information/support

provided. Simple descriptive statistics were performed to summarise the results and content analysis used for free text responses. ***Results*:** 51 units participated in the survey. Only 28% (n=14) reported having a formalised pathway for women seeking CSM. Pathways varied in their requirements for discussion at multidisciplinary team meetings, psychology and/or plastic surgery referral and/or inclusion of a cooling off period, but most had been developed exclusively by breast surgeons with little multidisciplinary involvement. Units without pathways reported managing patients on a case-by-case basis. Most units stated no requirement for a formal 'cooling off' period between index mastectomy and CSM but two-thirds would not perform the procedures simultaneously. Over 70% (n=36) only discussed CSM if specifically raised by the patient. ***Conclusions*:** There is significant variation in the practice and provision of CSM in the UK. In addition, our recently published systematic review (doi: 10.1245/s10434-023-14294-6) does not provide evidence indicating that women regret their decision for CSM but suggests surgeons' denial of flat symmetry as an option negatively affects women's experiences and outcomes. Evidence-based guidelines are urgently needed to support equitable and appropriate access to care and treatment options.

ONCOPLASTIC BREAST CONSERVATION SURGERY INCREASES SURVIVAL IN COMPARISON TO MASTECTOMY IN A WEST OF SCOTLAND POPULATION-BASED STUDY WITH LONG-TERM FOLLOW-UP

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***Problem statement*:** Recent evidence suggests potential survival advantage after breast conserving surgery (BCS), when compared to mastectomy (Mx). Survival outcomes following oncoplastic breast conservation surgery (OBCS) are lacking. We compared survival outcomes following conservation surgery and radiotherapy (BCS/OBCS+RTx) and OBCS+RTx with patients who underwent Mx with or without radiotherapy (Mx±RTx) in an observational population-cohort study. ***Methods*:** Patients diagnosed with primary invasive breast cancer between 01/01/2010 and 31/12/2019 across the West of Scotland were identified from a prospectively maintained National Cancer Registry database. Survival outcomes were analysed using Kaplan-Meier and prognostic factors adjusted for using Cox Regression analysis. ***Results*:** 14,182 eligible patients were included (BCS+RTx n=8537; OBCS+RTx n=360; Mx+RTx n=2953; Mx-RTx n=2332). Median follow-up was 7.27 years. Overall survival (OS) was 79.1%, and breast cancer-specific survival (BCSS) was 90.7%. Superior ten-year survival outcomes were observed amongst the BCS/OBCS+RTx group (OS: 81.2%; BCSS: 93.3%) compared to the Mx+RTx group (OS: 63.4%; BCSS: 75.9%) and the Mx-RTx group (OS: 63.1%; BCSS: 87.5%). After adjustment for patient demographics, socio-economic deprivation, mode of referral, tumour characteristics and treatment adjuncts, OS and BCSS were superior following BCS/OBCS+RTx compared to Mx+RTx (OS: HR 1.34, 95% CI 1.20-1.51; BCSS: HR 1.62, 95% CI 1.38-1.90) or Mx-RTx (OS: HR 1.57, 95% CI 1.41-1.75; BCSS: HR 1.70, 95% CI 1.41-2.05). Similar survival benefit was observed amongst a subgroup of patients treated with OBCS+RTx *(excluding patients receiving simple BCS)* compared to Mx+RTx (OS: HR 1.72, 95% CI 1.62-2.55; BCSS: HR 1.74, 95% CI 1.06-2.86) or Mx-RTx (OS: HR 2.21, 95% CI 1.49-3.27; BCSS: HR 1.89, 95% CI 1.13-3.14). ***Conclusion*:** OS and BCSS are improved following conservation surgery with radiotherapy when compared to Mx±RTx. This benefit is observed amongst patients receiving OBCS+RTx when compared to Mx±RTx. Findings should inform discussion of surgical treatment options with breast cancer patients.

CUMULATIVE RISK OF COSMETIC WORSENING FOLLOWING ULTRA-HYPOFRACTIONATED WHOLE BREAST RADIOTHERAPY WITH SIMULTANEOUS INTEGRATED BOOST: LARGEST REAL-WORLD DATA

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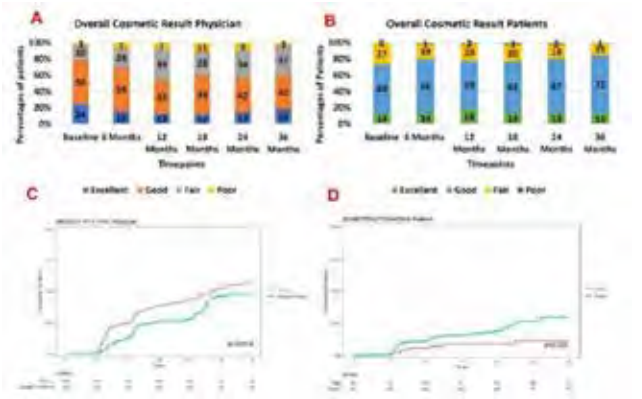
Problem statement: Large randomised trials showed safety of ultra-hypofractionated (uHFRT) regimens for early breast cancer. However, limited women in these trials had received tumor bed boost which was delivered sequentially. We report real-world data of worsening of cosmesis in a cohort uniformly treated with uHFRT with simultaneous integrated boost (SIB). ***Methods**:* 381 breast cancer patients who were treated with uHFRT (FAST/FAST-F) regimens from 2020 to 2022 were analysed. All patients received SIB either with electrons (n=221) or photons (n=160) The boost dose was 33 or 32 Gy in 5 fractions for FAST (n=80) and FAST-F (n=301) regimens respectively. Clinical visits were done every 6 months during which physician and patient rating of cosmesis was recorded. The scoring of cosmesis was done on 4-point scale: excellent (E=0), good (G=1), fair (F=2) and poor (P=3). Worsening of breast cosmesis was defined as shift of the scoring from any lower to higher number on the 4-point scale. Several clinical and dosimetric factors affecting the worsening of cosmesis were studied on univariate analysis for each type of rating using Grey's test. Kaplan Meier was used to analyse the cumulative incidence of worsening. ***Results***: The median follow up was 28 months (95% C.I. 26.68, 30.72). The cumulative 2-year risk of worsening of cosmesis was 37% by physician rating and 16% by patient rating. The worsening was more evident at 12 months as shown in Figure 1 (A, B). Among several factors that were studied, type of surgical cavity and breast PTV volume showed significant correlation with the physician rating and dose fractionation showed significant correlation with the patient rating as shown in Figure 1 (C D). Cumulative 2-year risk of worsening was 28% vs 44% (physician breast volume) and 8.6% vs. 18% (dose fractionation patient). Most (60%) of the oncoplasty patients had larger breast volume. ***Conclusion***: The study shows that worsening of cosmesis is more often reported by physician compared to patients. Women with large breast and treated with FAST-F experienced more worsening compared to other women. Majority of the women experienced worsening at 12 months after which it either improved or remained stable.



NEOADJUVANT THERAPY

PATHOLOGICAL COMPLETE RESPONSE RATE IN NEOADJUVANT CHEMOTHERAPY VERSUS CONCURRENT CHEMO-ENDOCRINE THERAPY IN HORMONE RECEPTOR POSITIVE, HER2 NEGATIVE BREAST CANCER

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Problem statement: The response rate to neoadjuvant chemotherapy(NACT) in hormone receptor positive(HR+) patients is low and pathological complete response(pCR) is seen in 5-10%(Joshi et al,

IJC, 2023). Neoadjuvant endocrine(NAET) therapy alone does not have good response either. Concurrent neoadjuvant chemo-endocrine therapy(NACET) is currently not standard of care. We are currently recruiting HR+, HER2 negative patients on randomized trial of CONcurrent versus SEQuential Chemo-Endocrine therapy (CONSEQuenCE) (CTRI/2018/09/015643). We evaluated the pCR rates of patients who are accrued on neoadjuvant treatment arm of the study. ***Methods***: Patients accrued on the neoadjuvant arm of the ongoing Ethics Committee approved CONSEQuenCE trial (after written, informed consent) between December 2018 and April 2024 were included in this analysis. All pre-menopausal patients received ovarian suppression with tamoxifen and all post-menopausal women received an aromatase inhibitor along with standard chemotherapy in NACET-arm(experimental) and chemotherapy alone in the NACT-arm(control). ***Results***: Out of 326, 161 were in the NACET-arm and 165 in the NACT-arm. The median age of the cohort was 45.5 years(25-80). The median cT at presentation was 5 cm(3-15 cm); 25(7.7%) were cN0, 194(59.5%) cN1, 93(28.5%) cN2, 14(4.3%) cN3; 295(90.5%) were histological grade-3. The Allred score for ER was low in 16/326(4.9%), moderate in 27/326(8.3%) and strong in 283(86.8%) patients. The PgR status was positive in 282(86.5%) and negative in 44(13.5%). 60% patients underwent mastectomy in both arms. The median ypT was 3(0-15) cm and 66.6% patients were ypN+. The overall pCR rate was 8.6%(28/319). The pCR rate was 7.5% in NACT-arm and 10.2% in NACET-arm (p=0.254). On univariate analysis, pCR was associated significantly with high histological grade(p=0.05), low-moderate Allred ER(p=0.001) and presence of lympho-vascular invasion(LVI)(p0.001). On Logistic Regression(excluding histological grade), low-moderate Allred ER(RR-0.126,0.037-0.428,p=0.001), smaller cT size(RR=2.517,1.015-6.242,p=0.046) and presence of LVI(RR=9.309,2.121-40.860,p0.001) were associated with higher pCR rate. ***Conclusion***: NACET increased the pCR rate by 36% (absolute 2.7%) in HR+, HER2-negative breast cancer patients as compared to NACT although it did not reach statistical significance because of overall low rate of pCR in this subset of patients. Concurrent NACET didn`t reduce effect of chemotherapy as feared in earlier studies and early institution of endocrine therapy may improve survival.

MOLECULAR ASSAYS

WHY HAVE HEALTH TECHNOLOGY ASSESSMENT BOARDS REACHED DIFFERING CONCLUSIONS ABOUT THE ABILITY OF TUMOUR GENE EXPRESSION TESTS TO PREDICT CHEMOTHERAPY BENEFIT FOR POSTMENOPAUSAL BREAST CANCER PATIENTS?

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Problem statement: Following the publication of the MINDACT and RxPONDER trial results, multiple clinical guideline committees have concluded that the MammaPrint and Oncotype DX tests can be used to identify postmenopausal women with low-genomic risk tumours who can safely avoid chemotherapy despite a significant recurrence risk arising from involvement of 1-3 axillary lymph nodes. As the EBCTCG has shown beyond reasonable doubt that women with ER-positive (and HER2-negative) tumours benefit from chemotherapy as a group, this conclusion implies that the tests can predict chemotherapy benefit, i.e. that the relative benefit of chemotherapy varies according to test score. Health Technology Assessment boards have however displayed less unanimity in their conclusions. ***Methods*:** We conducted a critical examination of three Health Technology Assessments conducted over a similar time frame that had access to the same evidence but reached differing conclusions. The Health Information and Quality Authority (Ireland) reporting in February 2023 found that Oncotype DX provides strong evidence for prediction whilst the evidence for MammaPrint was suggestive but too uncertain to recommend its use. The Sottish Health Technology Group report in October 2023 concluded that none of the tests should be used for women with lymph node involvement. NICE recommended in May 2023 that Oncotype DX should made be available for this patient group despite concluding that the evidence for prediction was uncertain, but did not find any evidence to support the use of MammaPrint. ***Results*:** We found that all three assessments used similar methods including the use of standardised tools to assess evidence quality and health economics assessments. The three boards however applied differing weightings (and in some cases interpretations) to the evidence and had differing opinions of its robustness. ***Conclusion*:** We consider that the differing conclusions between the boards can only be explained by subjective interpretation of imperfect evidence. It would help stakeholders to understand the variation in recommendations if agencies were more explicit about the weights they attached to competing evidence, and the risks and benefits accruing to patients from the provision or withholding of chemotherapy.

SCREENING

UPTAKE OF BREAST CANCER SCREENING WITH MAMMOGRAPHY AND ULTRASOUND IN CHINA: A MULTI-CENTRE POPULATION-BASED STUDY

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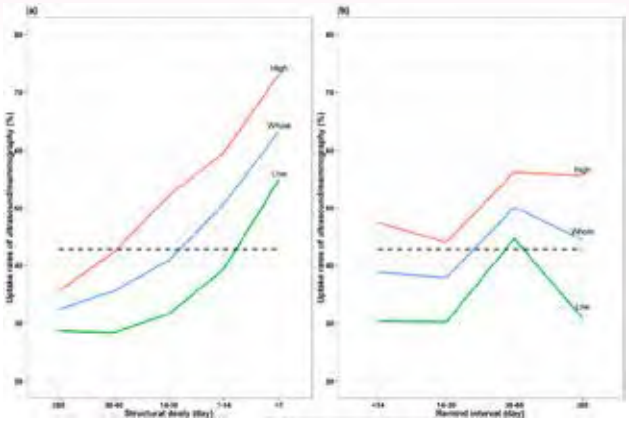
Problem statement: Optimal uptake rates of mammography or ultrasound are essential for breast cancer screening to yield mortality advantages. This study aimed to outline the process model of the breast cancer programme in China, identify multi-level factors influencing uptake, and for the first time, quantitatively adjust structural factors to enhance individual uptake rates. ***Methods*:** A total of 343,244 high-risk women for breast cancer under the framework of the Cancer Screening Program in Urban China were included. The logistic regression models were performed to identify the individual factors associated with the uptake of breast cancer screening, defined as whether the high-risk individual undertook mammography, ultrasound, or mammography plus ultrasound scans in designated hospitals within six months following the initial risk assessment. The linear regression models were adopted to explore the structural factors associated with the uptake rates in 332 randomly selected communities. The adjusted structural approaches were calculated for individuals in different uptake groups. ***Results*:** Uptake rates for ultrasound, mammography, and combined screening were 40.9%, 36.8%, and 34.9% respectively, showing a negative correlation with breast cancer mortality. (Pearson's coefficient: from -0.685 to -0.601). Multivariable regression models found that low uptake rates were associated with older age (ORmin=0.53, 95%CI: 0.5,0.57), and structural delay in initiating screening (βmin=-29.99, 95%CI: -39.21, -20.76). High uptake rates were associated with smokers (ORmax=1.08, 95%CI: 1.06,1.11), passive smokers(ORmax=1.46, 95%CI:1.42,1.51), drinkers (ORmax=1.07, 95%CI:1.05,1.09), individuals with benign breast cancer disease (ORmax=1,75, 95%CI:10.71,1.80), number of three-hypers(ORmax=1.12, 95%CI:1.08,1.15), delivery history(ORmax=1.61, 95%CI:1.56,1.67), family history of breast cancer(ORmax=1.32, 95%CI:1.29,1.34) and ovarian cancer(ORmax=1.09, 95%CI:1.07,1.11), and 30-60 days reminder interval for no-attenders(βmax= 8.71,95%CI: 3.18, 14.24). Using the uptake rate for mammography or ultrasound in the whole high-risk women as a benchmark, structural delays for low uptake individuals were recommended 7 days, 30-60 days for high uptake. Low uptake required reminders every 30-60 days, while high uptake did not. ***Conclusion*:** This study identifies the individual and structural factors associated with breast cancer screening, and quantitatively recommended adjusted structural approaches to enhance individual uptake rates for the first time, based on the principle of "timely screening with periodic reminder", which allows for maximum uptake rates with minimal resources.



POSTER PRESENTATION ABSTRACTS

ADJUVANT ENDOCRINE THERAPY

SUSHI DOMAIN-CONTAINING PROTEIN 3 IS A PREDICTOR OF ENDOCRINE THERAPY RESPONSE IN BREAST CANCER

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Problem statement: Over 70% of breast cancers (BC) are oestrogen receptor-positive (ER+), which harbour a favourable prognosis compared to ER-negative BC. However, a significant proportion of ER+ BC fail to respond to endocrine therapy (ET). ER has been reported to mediate Sushi domain-containing protein 3 (SUSD3) expression by binding to its upstream regulatory region in MCF7 breast cancer cells. Nonetheless, sufficient data about its immunohistochemical (IHC) expression is lacking which would validate the role of SUSD3 as an ER-responsive biomarker. Therefore, we aimed to characterise the expression of SUSD3 in ER+ BC and its prognostic and predictive significance. ***Methods***: Two well-characterised cohorts were used for SUSD3 investigation: the Nottingham cohort utilised for IHC staining (n=1173) and The Cancer Genome Atlas (TCGA) BC dataset (n=855) for extraction of transcriptomic data. Correlation to ER expression and survival outcomes in the ER+ BC cohort was carried out on the Nottingham cohort. Transcriptomic data were evaluated to demonstrate the association of *SUSD3* to *ESR1* expression, ER status, and patient outcomes in the TCGA cohort. ***Results***: SUSD3 showed IHC expression in 95% of ER+ BC, which achieved an area under the curve (AUC)=0.8 for correlation to ER+ status. A significant positive linear correlation between ER and SUSD3 was noted (r=0.5, p0.001). Transcriptomic analysis revealed a positive correlation to *ESR1* (r=0.65, p0.001). SUSD3 revealed a validated prognostic value in ER+ BC on both the proteomic and transcriptomic levels. ER+ BC expressing SUSD3 was associated with significantly more favourable breast cancer-specific survival and distant metastasis-free survival than ER+/SUSD3- on the proteomic level and prolonged overall survival and disease-free survival on the transcriptomic level. SUSD3 proved to be an independent prognostic biomarker in multivariate analysis, even when adjusted for progesterone receptor. ***Conclusion***: SUSD3, with its high expression in ER+ BC and its proven power as a prognostic and predictive biomarker, holds significant promise as a potential therapeutic target, which could improve the future of ER+ BC treatment.

BREAST IMAGING

RESIDUAL MICROCALCIFICATIONS AFTER NEOADJUVANT SYSTEMIC THERAPY FOR EARLY BREAST CANCER: IMPLICATIONS FOR SURGICAL PLANNING AND LONG-TERM OUTCOMES

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Problem statement: Residual microcalcifications on mammograms after Neoadjuvant Chemotherapy (NACT) pose a challenge in surgical decision-making. We evaluated the relationship between residual microcalcifications and pathological response, as well as its impact on recurrence and survival. ***Methods***: The study was a single-centre retrospective review of all patients who had NACT for breast cancer over five years between 1st January 2017 and 31st December 2021 at the National Health Service (NHS) Grampian Health Board in the northeast of Scotland. We excluded those who progressed to metastatic disease while on NACT. We performed logistic regression analysis between pathological response and residual microcalcifications, controlling for tumour size, nodal stage, grade, and receptor status. We evaluated overall survival (OS) and time to recurrence (TTR) based on the presence of residual microcalcifications, and computed hazard ratios (HR) for recurrence and death. ***Results:*** There were 22 (52.4%) patients with residual microcalcifications, absent in 6 (14.3%) and not stated in 14 (33.3%). The relationship between pathological response and residual microcalcifications gave a chi-squared value of 2.59 that was not statistically significant (p=0.763). The presence of residual microcalcifications decreased the likelihood of a pathological complete response, however, not significantly so, with an odds ratio (OR) of 0.554, 95% confidence interval [0.200, 1.533] p=0.255. Odds ratios for other predictors: T stage (OR=0.602, [0.201, 1.804] p=0.365), nodal status (OR=0.767, [0.183, 3.205] p=0.716), receptor status (OR=1.079, [0.550, 2.119] p=0.825) and grade (OR=1.504, [0.333, 6.795] p=0.596) were all not significant. Time to recurrence (TTR) was 70 months, [61, 79 months] among those with residual microcalcifications, and 52 months [39, 65 months] among those without residual microcalcifications (HR=2.599, [0.290, 23.264], p= 0.393). Overall Survival (OS) was 76 months [69, 83 months] in the present residual microcalcifications group, and 60 months [53, 66 months] in the absent residual microcalcifications group (HR=1.362, [0.123, 15.062], p= 0.801). ***Conclusion***: Residual microcalcifications are not a predictive marker of pathological complete response, nor are they indicative of improved oncologic outcomes. Consequently, excision of these residual lesions should remain the standard of care.

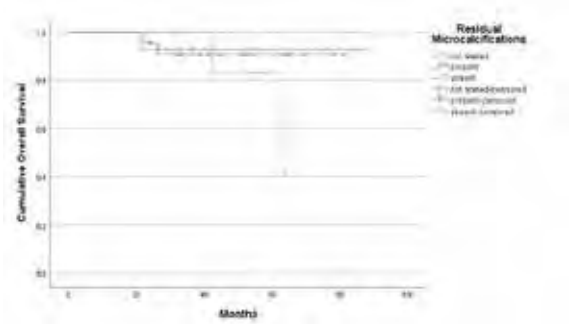

Figure 1: Overall Survival based on Residual Microcalcifications
Disclosure: YM – Member Organizing Committee World Congress on CoBrCa

LOCALIZATION OF NON-PALPABLE BREAST LESIONS

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Problem statement: For surgical excision of a non-palpable breast lesion, localization of the lesion is necessary, which is carried out by the breast interventional radiologist. Among the available techniques, the most commonly used is wire-guided localization (WGL). Other techniques (radioactive, magnetic, radar- or radiofrequency-based, and intraoperative ultrasound) have been developed over the last two decades with the aim of improving and optimizing outcomes. ***Methods***: We performed a systematic review on all localization techniques for non-palpable breast lesions. ***Results***: Today`s challenge is to precisely identify non-palpable lesions of the breast for an optimal therapeutic surgical result that also takes into account the best possible aesthetic outcome. Currently, for the localization of non-palpable lesions, the most used approach in conservative surgery is wire-guided localization (WGL). Most localization techniques showed overlap in oncological outcomes compared to guidewire, evaluating successful excision rate, positive margin rate, and reoperation rates as parameters. The Radio-Guided Occult Lesion Localization (ROLL) technique, although a valid alternative, is not without complications, including the possibility of diffusion of the radiotracer into healthy tissues. To overcome these drawbacks, radioactive Iodine 125 seeds were introduced. Thanks to technological advancements, alternatives such as radar reflectors, magnetic seeds and radio frequency markers have emerged. Intraoperative ultrasound has been shown to be a safe, noninvasive technique for localizing ultrasound-visible tumors with significantly higher and more reliable negative margin rates than other localization methods. ***Conclusion***: There is no perfect localization method for the excision of non-palpable breast lesions, but fortunately we have multiple techniques with different advantages and disadvantages that must be evaluated and adapted to the specific case of the patient, to the type of surgical intervention, always taking into account the available economic resources of the reference breast centre

DIAGNOSIS OF PRIMARY AND SECONDARY BREAST LYMPHOMA: SOME CASES FROM OUR INSTITUTE AND REVIEW OF THE LITERATURE

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Problem statement: Breast lymphoma is a rare neoplasm of the breast and can be primary or secondary to metastases due to extramammary localization. The radiological characteristics of breast lymphoma are similar to epithelial neoplasms of the breast and the differential diagnosis is not always clear. Lymphomas are divided into Hodgkin`s (40%) and non-Hodgkin`s (60%) and the prevalence of breast lymphoma varies from 0.04% to 0.5% among malignant tumors of the breast. The prevalence of primary breast lymphoma varies from 0.85 to 2.2% of malignant lymphomas as the breast contains small quantities of lymphoid tissue. ***Methods:*** We performed a systematic review of the literature for breast lymphomas, associating it with the same cases found in our breast diagnostic center. ***Results***: In the time interval from 2019 to 2024, 4 patients suffering from primary breast lymphoma were retrospectively identified in the radiological databases of the University Hospital of Catania. To be classified as primary lymphoma, patients must meet the following criteria: no history of previous lymphoma; selective breast involvement with or without ipsilateral axillary lymph nodes (documented with PET-CT or CT); a bone marrow biopsy negative for lymphoma cells. In the cases found, the mammography showed a limited opacity or with indistinct and slightly spiculated margins with an average size of approximately 5 mm. The mammogram also showed a diffuse increase in parenchymal density with trabecular thickening and in some cases skin thickening in the absence of associated microcalcifications. The ultrasound study revealed a rounded or oval hypoechoic lesion with limited margins with hypervascularity on color Doppler and associated dilated subcutaneous lymphatic vessels. Magnetic resonance imaging was performed on all patients, revealing lesions with spiculated margins, with heterogeneous enhancement and kinetic curves with rapid wash in and wash out. Histological diagnosis was achieved by breast core biopsy, revealing 3 cases of large B-cell lymphoma and one case of follicular lymphoma. ***Conclusion:*** Primary or secondary breast lymphoma is a rare neoplastic disease that does not present peculiar clinical signs and therefore can represent an occasional finding.

DCIS

HOW CAN WE PREDICT UPSTAGING TO INVASIVE BREAST CANCER AFTER A BIOPSY DIAGNOSIS OF DUCTAL CARCINOMA IN SITU?

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Problem statement: Around 20% of patients with biopsy-diagnosed pure ductal carcinoma in situ (DCIS) present an invasive lesion in the subsequent resection. To date, there are no reliable prognostic factors to predict upstaging to invasive carcinoma. ***Methods***: Archived biopsy slides of 260 patients with pure biopsy-diagnosed DCIS were evaluated. Nuclear atypia, predominant DCIS architecture, necrosis, calcifications, myxoid stroma, lobular cancerization and tumour-infiltrating lymphocytes (TILs) were assessed. Statistical analysis (SPSS version 27) comprised Chi square tests for categorical data and Mann-Whitney tests for continuous data. ***Results***: Ninety-five women (36.5%) underwent mastectomy and 165 (63.5%) underwent breast-conserving surgery. Fifty-one of 260 women (19.6%) were upstaged to (micro-)invasive carcinoma after surgical resection. Patient age, type of surgery and laterality were not significant linked with upstaging. Nuclear atypia, myxoid stroma, necrosis and lobular cancerization were not significantly associated with upstaging. Higher TIL levels showed a trend towards upstaging without being statistically significant (p=0.5). Predominant DCIS architecture was most often cribriform (138 cases; 53.9%) followed by solid architecture (66 cases; 25.7%). Twenty out of 66 DCIS (30.3%) with solid architecture were upstaged (p=0.01). Sixty DCIS (23.5%) did not contain calcifications, of which 21 (35%) showed upstaging after surgery (p0.001). In multivariate logistic regression analysis, DCIS with solid architecture and lack of calcification were significantly associated with upstaging: 8 out of 12 (66.7%) predominantly solid DCIS without calcifications were upstaged (p0.001). ***Conclusion*****:** Solid DCIS architecture and lack of calcifications are significantly associated with upstaging to invasive carcinoma. No information about patient presentation was collected yet. We plan to retrospectively collect these clinical data in the future, allowing us to investigate whether DCIS patients without histopathologically diagnosed calcifications more often present with a clinically palpable mass. TILs levels, assessed as percentages, showed too much overlap between both groups to be clinically useful for risk prediction for upstaging.

HER2 POSITIVE BREAST CANCER

MAKING OUTCOME-BASED PRICING A REALITY IN THE UK – A RETROSPECTIVE COMPARISON OF COST-BASED VS OUTCOME-BASED PRICING FOR TRASTUZUMAB EMTANSINE (KADCYLA) IN METASTATIC BREAST CANCER

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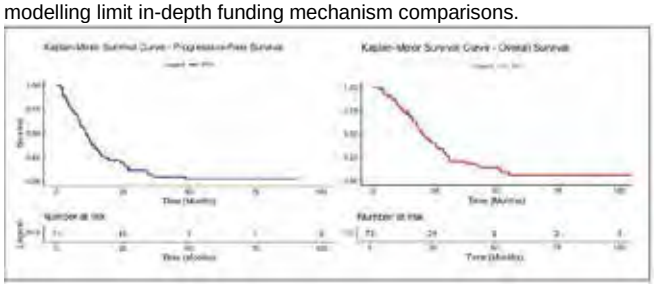
Introduction and problem statement: Medications are traditionally paid for through cost-based pricing (CBP), where total drug costs are directly related to volumes consumed. Discounted CBP (dCBP) refers to discounts negotiated on list prices, increasing cost-effectiveness. With rapidly increasing breast cancer drug prices and significantly constrained healthcare systems, new funding mechanisms must be considered. Outcome-based pricing (OBP) considers real-world medication effectiveness, linking prices to patient outcomes. Although common elsewhere, UK use is rare. ***Methods***: Using Kadcyla™, metastatic breast cancer (MBC) and the NHS South-East Scotland Cancer Network (SCAN) as examples, this study simulated OBP. Retrospective data collection and price modelling occurred, estimating and comparing funding modalities. The primary endpoint was estimated Kadcyla cost to SCAN using dCBP and two OBP scenarios (disease

control rate [DCR] and objective response rate [ORR] outcomes). The Kadcyla BNF list price/ml was used to guide costing for all models/scenarios. Considering list price discounting is usually confidential, deterministic sensitivity analysis with varying discount rates was applied to list prices, generating dCBP estimates. Response assessment occurred three months post-Kadcyla commencement. Chemotherapy records captured all eligible patients, treated with Kadcyla pre-August 2023. Data extracted included treatment commencement and discontinuation dates, number of treatment cycles, doses administered and response rates. ***Results***: 78 patients received Kadcyla for MBC, with a DCR and ORR of 79.5% (n=58) and 35.6% (n=26), respectively. Median progression-free and overall survival was estimated as 11.2 (n=71; 95%CI 9-14.3) and 19.8 (n=72; 95%CI 17.2-25.9) months, respectively (Figure 1). For CBP, total cost was estimated at £3,705,050 with vial-sharing (£47,501/patient; 95%CI: £36,048-£58,953). With non-vial-sharing, total cost was estimated at £3,921,334 (£50,274/patient; 95%CI: £38,333-£62,214). Using 30%, 50% and 70% discount rates, dCBP estimates were generated. For OBP (DCR outcome), total cost was £2,538,036 with vial-sharing (£39,657/patient; 95%CI: £26,702-£52,612) and £2,684,020 (£41,938; 95%CI: £28,394-£55,482) without vial-sharing. For OBP (ORR outcome), total cost was £1,475,126 with vial-sharing (£23,049/patient; 95%CI: £10,397-£35,701) and £1,564,529 with non-vial-sharing (£24,446/patient; 95%CI: £11,106-37,785). ***Conclusion***: Although OBP is theoretically feasible, this study identified practical concerns regarding implementation in existing NHS systems, including challenges around relevant data extraction. Confidential discount rates for traditional CBP modelling limit in-depth funding mechanism comparisons.



LOCOREGIONAL THERAPY

IMPACT OF OMITTING ROUTINE INTRAOPERATIVE FROZEN SECTION IN SENTINEL NODE BIOPSY FOR BREAST CANCER

Youmna Abdelaziz[1,2], Mary Gare[1], Buket Ertansel[1], Zena Rokan[1], Nadine Betambeau[1], Dibyesh Banerjee[1], Dibyesh Banerjee, Sarah Tang, Sarah Tang[1], Anup Sharma[1]
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Introduction: By following Z0011 and AMAROS criteria, completion axillary clearance (ANC) can be omitted without compromising outcomes. We describe the change in our intra-operative frozen section (FS) policy to allow MDT discussion and de-escalation of axillary surgery. ***Methods***: Patients who underwent SNB with routine FS at St George's Hospital between August 2021-July 2022 were studied. Patient and tumour characteristics, FS result, final histology and surgical management were recorded. A subsequent study was performed between April-October 2023 when the unit stopped routine FS. ***Results***: In the first study (n=199), 17 patients had involved nodes on FS (7 had macrometastases and on-table ANC). Two with micrometastases at FS were found to have macrometastases and required ANC later. Paraffin sections confirmed macrometastases in further 5 cases (negative FS) but none required ANC following MDT (multidisciplinary team meeting) discussion. The false negative US rate was 11% (22/200). The overall ANC rate was 4.5% (9/199) but the on-table conversion rate was 3.5% (7/199). Eighty-six patients had SNB without FS. Eleven patients had macrometastases (12.7%) and later ANC was performed in 3 cases (3/86, 3.5%) based on high-volume disease in the sentinel nodes, presence of ECS (extracapsular spread) and large primary tumour size. ***Conclusion***: Our ANC rate dropped from 4.5% to 3.5%. Omission of FS allows formal MDT discussion and de-escalation of axillary surgery. It also reduces costs and pathology workload. Conversely, completion ANC later can be technically challenging and difficult to fit in due theatre capacity. Some units advocate selective FS in cases of post-neoadjuvant chemotherapy and high-risk disease.

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RECONSIDERING THE NEED FOR INTRAOPERATIVE FROZEN SECTION IN SENTINEL LYMPH NODE BIOPSY FOR EARLY BREAST CANCER IN BAHRAIN

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***Problem statement*:** Intraoperative frozen section is routinely performed in sentinel lymph node biopsy (SLNB) for early breast cancer, to prevent a second operation for axillary lymph node dissection (ALND). However, it is associated with false-negative results, need for experienced pathologists, prolonged operative time and increased costs. Several trials have shown the oncological safety of avoiding ALND in early breast cancer with 1-2 positive sentinel lymph nodes (SLNs). The objective of this study was to assess the need for frozen section during SLNB in early breast cancer and to evaluate whether it changes the surgical management of the axilla. ***Methods*:** Clinicopathological data from patients with early stage clinically node-negative breast cancer who underwent SLNB with frozen section at our institution between October 2021 and September 2023 were collected from a pathology database and retrospectively analysed. Patients with history of neoadjuvant chemotherapy, cT3-4 tumours, ductal carcinoma in situ (DCIS), occult breast cancer and previous history of cancer were excluded. ***Results*:** A total of 147 patients underwent breast cancer surgery with SLNB using intraoperative frozen section. The sensitivity of frozen section was 84.6% and the false-negative rate (FNR) was 15.4%. 4.76% underwent immediate ALND. In the remaining cases, there were only 1 or 2 positive SLNs and ALND was omitted. Multifocal or multicentric disease was significantly associated with =3 positive SLNs (71.4% v 15%, P = 0.005). Patients with indication for ALND were also more likely to have tumours with LVI (85.7% v 17.1%, P = 0.001). ***Conclusion*:** There is no indication for ALND in most patients with early breast cancer. Routine frozen section is unnecessary during SLNB and permanent section alone may be sufficient. This will help avoid the disadvantages of frozen section, without compromising the overall standard of care.

AXILLARY RECURRENCE IN NON-STANDARD VS STANDARD AXILLARY LYMPH NODE DISSECTION IN N2-N3 HER2+ AND TRIPLE NEGATIVE BREAST CANCER PATIENTS THAT UNDERGO NEOADJUVANT SYSTEMIC THERAPY

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Obtaining 10 or more lymph nodes in axillary lymph node dissection (ALND) is the current recommendation for patients with cN2a-cN3c breast cancer despite evidence that axillary surgery is prognostic, HER2+ and Triple Negative (TN) subtypes have excellent pathologic complete response after neoadjuvant systemic therapy (NAST), and that adjuvant radiotherapy is given this subset of patients. Our primary objective was to compare axillary recurrence in patients with non-standard ALND (ns-ALND) vs those with standard ALND (s-ALND). Secondary objectives were to determine the proportion of low nodal burden (LNB) after NAST (ypN0-ypN1) and the factors associated with LNB. Retrospective cohort from January 2010 to December 2020. Inclusion criteria were HER2+ or TN subtypes with cN2a-cN3c that underwent NAST. We reported means and medians for continuous variables and frequencies and percentages for categorical variables. The Kaplan-Meier method and log rank test were used to identify statistically significant differences in axillary recurrences between the two groups. To identify factors associated with low nodal burden a binary logistic regression was performed. Of 337 patients, 275 went s-ALND

and 62 ns-ALND. There were 11 (3.3%) axillary recurrences (AR) with 9 (2.7%) in s-ALND group and 2 (0.6%) in ns-ALND group. Median axillary recurrence was not reached in either group and no statistically significant difference was found (p=0.92). Low nodal burden comprehended 292 (87%) patients. After adjusting for menopausal status, cN, histology, grade, and subtype, the only factor associated with low nodal burden was HER2+ subtype (OR 2.7, 95% CI 1.3–5.3, p 0.01). This analysis suggests that less extensive ALND could be achieved with safety in these subtypes after NAST despite initial nodal staging. It also raises the question whether these patients can undergo sentinel lymph node biopsy since 87% of the cohort had between 0 and 3 positive lymph nodes after NAST.

LOCO-REGIONAL TREATMENT IN METASTATIC BREAST CANCER

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Problem statement: Metastatic breast cancer at diagnosis has an incidence of 5%. Nowadays, thanks to novel therapies, metastatic patients can be candidates for surgery in very selected cases. The benefit in terms of overall survival is still controversial and is being investigated. ***Materials and methods***: Over the last 10 years at our Institute, 67 patients suffering from both oligo- and polymetastatic metastatic breast cancer have been treated with surgery and radiotherapy after a stability period of at least 12 months after first-line therapy. ***Results***: Of the 67 patients treated with surgery, 45 patients had oligometastatic disease, whilst 22 patients had polymetastatic disease in remission or stability. Based on molecular subtype, 41% were Luminal A; 27% were Luminal B; 27% were HER2+; 5% were Triple Negative. 92% of oligometastatic patients had Luminal subtypes. Amongst oligometastatic patients, 76% had bone metastases, 10% had bone and liver metastases, 3% had liver metastases, 7% had lung metastases, and 4% had single brain metastases. 22 patients with polymetastatic disease did not receive post-surgical radiotherapy. Oligometastatic patients received breast and axillary surgery along with radiotherapy to the breast or chest wall. 32% were treated with conservative surgery, whereas 68% with mastectomy (20% immediate reconstruction, 80% radical mastectomy). Only 13% of patients experienced disease progression 6 months after locoregional treatment. Median Overall survival after loco-regional treatment was 49 months. Patients with Luminal A cancers and bone metastases in less than two sites benefited more than other subtypes of locoregional treatment. ***Conclusions***: Locoregional treatments improved local control and quality of life in the majority of patients. Trials have shown conflicting results in terms of survival, although there is an increasing trend in favor of locoregional treatment. In our experience, the range of therapeutic options in the metastatic setting has been broadened. After 1 year of stable disease, surgical treatment of the primary tumor and radiation therapy are offered in selected cases for oligometastatic patients aiming curative approach.

Disclosure of interests: None

LONG TERM PATIENT REPORTED OUTCOMES FOLLOWING THERAPEUTIC MAMMAPLASTY OVER 17 YEARS

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***Problem Statement*:** Therapeutic Mammaplasty (TM) is a safe oncoplastic surgical technique aiming to extend the boundaries of traditional breast conserving therapy (BCT) by removing larger breast volumes to reduce and lift the breast, without compromising cosmetic or oncological outcomes. Several systematic reviews have emphasised the paucity of Patient Reported Outcome Measures (PROMs) following TM. This study aimed to assess long-term PROMs for women undergoing TM over 17 years in our centre. ***Methods*:** Eligible patients who underwent TM 2005-2021 were invited to participate by returning the BREAST-Q questionnaire (combination of BCT and Reduction/Mastopexy modules). Surveys were returned August-December 2023 (minimum 20-months post TM). Raw responses were transformed using Rasch conversion tables (0=worst;100=best) and descriptive summary statistics generated. ***Results*:** Of 247 patients who underwent TM, n=16(6.5%) subsequently received completion mastectomy, n=15(6%) developed recurrence/metastatic disease and n=22(8.9%) died. Questionnaires were returned by 105/194(54%) participants. Overall, patients reported median scores of 69(IQR 53.5-88) and 71.5(IQR 54-86) for satisfaction with breasts for BCT/breast reduction modules respectively. Median wellbeing scores were physical(chest wall) 82(IQR 66-100), physical(reduction) 72(IQR 59-82) and psychosocial 77(IQR 62-93) with lowest scores for sexual wellbeing 59(IQR 36-79). Comparison was made with published long-term PROMs for immediate breast reconstruction (IBR) (Johnson et al doi:10.1093/bjs/znad276) using a minimal clinically important difference in mean scores of 4-points for satisfaction with breasts/psychosocial/sexual wellbeing and 3-points for physical wellbeing. TM had better long-term satisfaction with breasts than all forms of IBR (TM 72.3(BCT)/74.5(reduction) vs Implant/expander 54.9;LD 59;Abdominal 67.6) and sexual wellbeing (TM 59 vs Implant/expander 44.7;LD 47.4;Abdominal 51.2). Psychosocial wellbeing was better than all IBR types but not significant for abdominal flaps (TM 78.1 vs Implant/expander 72.2;LD 73.3;Abdominal 77.6). TM physical wellbeing scores (80.6) were comparable to implant/expander (82.1)/LD (79.5) IBR, but significantly lower than abdominal flap IBR (87.8). ***Conclusions*:** TM has a long-lasting positive impact on quality-of-life following breast cancer treatment and overall, is better than IBR regarding satisfaction with breasts, sexual and psychosocial wellbeing, and comparable for physical wellbeing. With growing evidence suggesting BCT also confers a survival advantage over mastectomy, this data should further support that BCT should be offered preferentially where oncologically feasible.

DOES USE OF INTRAOPERATIVE INDOCYANINE GREEN (ICG) IMAGING REDUCE THE RISK OF MASTECTOMY SKIN FLAP NECROSIS (MFN) IN IMMEDIATE DEEP INFERIOR EPIGASTRIC PERFORATOR (DIEP) BREAST RECONSTRUCTIVE SURGERY?

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Problem statement: Patients undergoing immediate microvascular breast reconstruction with DIEP flaps are at risk of MFN. This complication can potentially cause patient morbidity, in the form of a requirement for further operations (Clavien Dindo III/IV) or delays to healing following surgery and a potential delay to adjuvant treatments such as chemotherapy or radiotherapy, which could affect the prognosis for their breast cancer. This study aims to evaluate the rate of MFN in patients undergoing immediate microvascular breast reconstruction before and after the introduction of ICG imaging (SPY-PHI Stryker Endoscopy) to our unit. Secondary outcome measures compared if ICG improved Getting It Right First Time (GIRFT) benchmarks. ***Methods:*** All patients undergoing immediate breast reconstruction with DIEP flaps from January 2022 to May 2024 were included in the audit. Prospective data was collected on MFN and re-operation or wound healing issues. 57 patients were included, with 11 undergoing bilateral breast reconstruction, giving 68 breasts in total. ***Results*:** The ICG was used in 31 cases. There were 37 controls. The groups were similar in age, BMI, mastectomy weight and comorbidities. The rate of MFN in the ICG group was 6.5% and in the non-ICG group the rate was 24.3% (Chi-square p = 0.046). With regard to GIRFT benchmarks, in the ICG group 16.7% of patients were re-admitted within 30 days of the index procedure, compared to 30.3% of the non-ICG group. Half of the readmissions in the ICG group and three-fifths of the readmissions in the non-ICG group were MFN related. No adverse effects of ICG were noted. It was also noted that the only incidences of MFN in the ICG group were the first 2 cases, suggesting there is a learning curve. ***Conclusion:*** The introduction of the ICG to our breast reconstruction service has significantly reduced the rate of MFN by 17.8% and helped to improve the service`s performance compared with the national GIRFT benchmarks. Following a short learning curve this technique has improved outcomes and demonstrated widespread applications in microvascular breast reconstruction including anastomosis patency, flap viability and mastectomy design.

SURGICAL MANAGEMENT OF THE NODE POSITIVE AXILLA WITH TARGETED AXILLARY DISSECTION IN BREAST CANCER: A SINGLE CENTRE EXPERIENCE OVER 6 YEARS OF PRACTICE

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Problem statement: Targeted axillary dissection (TAD) is a well-established method to evaluate residual disease after neoadjuvant chemotherapy (NAC) in patients with breast cancer. In recent years, TAD is increasingly utilised during upfront surgery (i.e. without undergoing neoadjuvant chemotherapy). TAD can reduce morbidity compared to axillary node clearance (ANC) which is standard of care in patients with stage positive lymph nodes. Our study aimed to evaluate the feasibility of TAD in breast cancer patients undergoing upfront surgery with minimal axillary disease who can avoid ANC. ***Methods***: Patients included were those who had abnormal nodes on ultrasound (1-3 nodes) with biopsy-proven axillary lymph node involvement undergoing primary surgery. These patients were counselled regarding axillary approach and offered either an ANC which is standard of care or a TAD. We identified 99 breast cancer patients who underwent TAD from November 2016 to June 2023. Patients who underwent TAD of the localised node also underwent sentinel lymph node biopsy using Technetium injection (Tc99) aiming for at least 3-4 lymph nodes. ***Results***: 99 patients were identified in the study group. 4 patients (n=4) who were initially planned for TAD were converted to axillary node clearance intraoperatively based upon clinical findings at surgery. The remaining (n=95) had 1-12 (median 5) lymph nodes removed. 89/95 patients' (93.6%) TAD nodes were pathologically proven malignant/ positive lymph nodes. 5/95 patients' TAD nodes were pathologically proven negative lymph nodes. After MDT discussion, 15/95 patients (15.8%) received a completion ANC, 76/95 patients (80.0%) were advised to have radiotherapy to the axilla postoperatively and 4/95 patients (4.2%) were advised no further treatment to the axilla as part of the POSNOC trial. No isolated axillary recurrences have been identified. ***Conclusion***: Our study demonstrated the feasibility of TAD in breast cancer patients with minimal axillary disease at presentation where NAC is not indicated who can avoid ANC. This reduced the number of patients undergoing ANC to 15.8%. This has a significant impact on the morbidity within this patient population.

Disclosure of Interest: The authors have no conflicts of interest to disclose.

POST MASTECTOMY RECONSTRUCTION PRACTICES AND OUTCOMES FOR OLDER WOMEN IN A UK TERTIARY CARE CENTRE

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Problem statement: Older women represent an under-studied subset of patients in breast cancer. In this audit, we review the indications and kind of reconstruction in this cohort within our institution. ***Methods***: A retrospective analysis of women above 70 years at University Hospitals Birmingham (UHBT) between 2015-23 for post-mastectomy reconstruction surgery. At baseline, we collected information regarding demographics, oncological features, we then identified the type of breast reconstructive surgery performed. ***Results***: Our cohort consisted of 25 patients (age Range: 70-84, mean 71.5). Invasive ductal carcinoma accounted for majority of tumours (n=8), followed by radiation-associated angiosarcomas (n=6), invasive lobular carcinoma (n=4), and ductal carcinoma in-situ (n=4), Malignant phyllodes n=1, Squamous cell n=1, metaplastic carcinoma n=1. Eight patients were classified as T1 (tumour size 20mm), eleven as T2 (20-50mm), and 7 as T3 (50mm). Majority (n=24) had no nodal involvement. While eleven patients received no adjuvant treatment, two had Neo- adjuvant and all others any combination of the three. Forty eight percent received resurfacing soft tissue coverage(n=12), Latissimus Dorsi flap(n=10), was commonly used procedure (TRAM for 2), followed by 2-stage expander/implant-based immediate delayed reconstruction (n=10), immediate breast reconstruction performed in three (DIEP, LD and implant -one each). Thirty-two per cent experienced short-term complications (n=8), 4 returned to theatre (16%). Eight patients experienced long-term complications, 6(24%) requiring revisional surgery. ***Conclusion***: Our cohort consisted of large number of locally advanced cancers requiring soft tissue coverage with autologous flaps technique used in most women. A cautious approach of tissue expansion utilised as immediate delayed two stage reconstruction. Our findings, however, are limited by its small sample size and highly selected cohort of patients.

IMPLANT RECONSTRUCTION: TO MESH OR NOT TO MESH?

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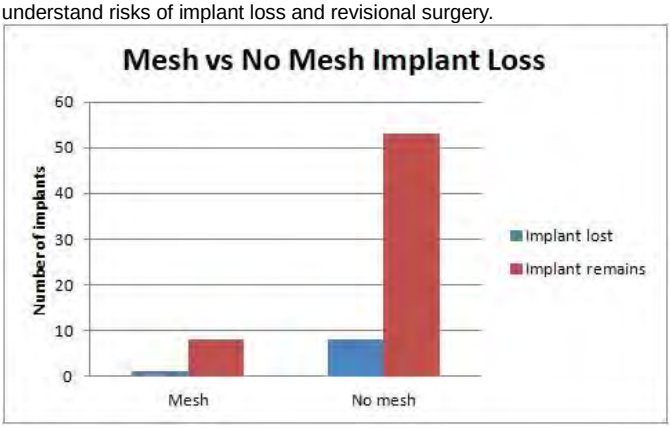
Problem statement: The lifetime risk of breast cancer in women is ~12% (1). Implant based reconstruction accounts for ~50% of breast reconstructions in the U.K (2). Mesh is commonly used as an adjunct to pre-pectoral implant reconstruction. The Association of Breast Surgery and BAPRAS Guidelines note possible reduced capsular contracture in use of mesh but similar rates of implant loss and re-operation despite two randomised trials noting increased complications following mesh based reconstruction (2). The Edinburgh Breast Unit has largely moved away from mesh based reconstruction and we wanted to assess outcomes following this move. ***Methods:*** Data on all patients undergoing their first implant based reconstruction was gathered over a 12 month period (01/11/22 - 31/10/23). Rates of complication were noted and comparison between mesh based and non mesh based reconstruction made up to 01/03/24. ***Results***: Seventy new implants were placed in the collection period. The average patient age was 41 (26-68) and average BMI 24.6 (17.3-43.3). 60% implants were placed following risk reducing surgery (n=42). An increased size implant compared to excised tissue was observed in 86% cases (average implant size 397cc, range 120-725cc). Eight implants were lost due to complications over follow up (12.9%). Of these, only one patient had no risk factors for implant loss (risk factors included: smoking, radiotherapy, diabetes, raised BMI). Seven implants placed with no mesh (n=59) and one placed with mesh (n=9) were lost (p=0.95). Twelve cases involving implants placed with no mesh developed wound healing issues compared to one case in those placed with mesh (p=0.65). At follow up, further surgery was required in 17 cases ((cosmesis (n=8); infection (n=5); removal of implant not due to infection (n=2); haematoma (n=1); axillary node clearance (n=1)). Of those with infective complications (n=14) S. aureus was isolated in six cases. ***Conclusion:*** In this audit there was no difference in complication rates between implants placed with mesh vs. without. The main risk factors for implant loss are well understood and include smoking and previous radiotherapy. Careful patient selection can reduce implant loss but it is crucial that patients understand risks of implant loss and revisional surgery.



ONCOLOGICAL AND COSMETIC OUTCOMES OF LOCAL PERFORATOR FLAPS IN ONCOPLASTIC BREAST SURGERY; SINGLE CENTRE EXPERIENCE IN UK

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Problem statement: Local perforator flaps have emerged as novel volume replacement technique with acceptable oncological clearance, preservation of cosmesis, enabling larger excisions, still amenable to re-excision of margins and no scars visible on breast. The technique is recently been adopted in our institution, we aimed at finding the

effectiveness of procedure in terms of oncological clearance, post operative complications and patient's satisfaction using Breast Q. ***Methodology***: This study enrolled 20 female patient treated for breast cancer using LPF(Local perforator Flap) from Dec 2020 to Aug 2023 at Breast unit, Leighton Hospital. Post operatively , patients were assessed at regular intervals to check recovery and results. Cosmetic outcomes and patient satisfaction were evaluated using 2 scales from BREAST-Q BCT domain version 2.0. Patients who had lost to follow, expired, subsequently underwent a mastectomy, or did not consent to participate in the study were excluded. ***Results***:

Total patients	20		
Mean Age	53.50 (42-65)		
BMI	<30	12	
	>30	8	
ASA Grade	1	2	
	2	14	
	3	4	
Smoker	Yes	2	
	no	18	
Indication of surgery	Primary surgery	15 (75%)	
	Part of re-excision	4 (20%)	
	Correction of deformity(post cancer)	1 (5%)	
Specimen weight	120 336	0-277	
Tumour size on radiology	61.5	43-80mm	
Tumour size on	<2 cm	0	
Histopathology	2-5cm	10 (50%)	
(1 had CPR after NACT)	>5cm	9 (45%)	
Axillary treatment	SLNB	12 (60%)	
	Axillary clearance	2 (10%)	
NACT	2	1 cPR, 1 pPR	
Radiotherapy	15	75%	
Re-excision of margins	5	25%	
Post-op	Minor (antibiotics oral/IV	6 (30%)	
complications	Major (re-operation)	2 (10%)	
BREAST-Q©			
	Study specific questionnaires used	SUM SCORE	EQUIVALENT RASCH TRANS SCORE (0-100)
	Post-operative satisfaction with breast(median)	31	59
	Physical well-being chest (median)	16	66
	Satisfaction with information-breast surgeon	48	100

Conclusion: BREAST-Q is a validated survey tool which suggested that in terms of 'Post-operative satisfaction with breast ' and 'Physical well-being', patients were somewhat satisfied. Rate of re-excision was slightly higher which could be attributed to small sample size. Our early experience with this innovative procedure has been satisfactory with minimal perioperative morbidities making it suitable for partial breast reconstructions, particularly in multifocal and in large tumours for larger excision volume.

ARE WE PERFORMING DIFFERENT TYPES OF OPERATION IN OUR OLDER BREAST CANCER PATIENTS COMPARED TO OUR YOUNGER BREAST CANCER PATIENTS?

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Problem statement: NABCOP has shown that older breast cancer patients receive different treatment to younger women. Emerging data suggests a survival benefit to breast conservation. GIRFT and BADS are encouraging day case surgery. When women with invasive breast cancer over 70 have surgery: Is this group being conserved? Are they having oncoplastic breast surgery (OBS)? What are the day case rates? We have defined OBS here as local perforator flaps, mini -LD, mammoplasty (all types) +/- contralateral symmetrisation or mastectomy (Mx)/immediate whole breast reconstruction i.e. We are looking at immediate whole breast or partial breast reconstruction. ***Methods***: All patients diagnosed with invasive breast cancer at HHFT in 2019 and 2023 were identified. A retrospective database was created. Chi² was used to determine significance.

Results:

Types of operation and Chi² analysis

	2019		2023	
	<70 years n=342	>70 years n= 110	<70 n= 284	>70 n=147
Mastectomy Rate	56/342 (16.3%)	32/110 (29%)	34/284 (12%)	35/147 (23.8%)
OBS rate	89/342 (26%)	18/110 (16.4%)	99/284 (34.9%)	32/147 (21.8%)
Day Case Rate (all operations)	229/342 (67%)	69/110 (63%)	241/284 (84.9%)	93/147 (63.3%)
p value Mx <70 v > 70	<0.00856		<0.024	
p value OBS <70 v > 70	<0.0045		<0.0278	

P value OBS 2019 v2023 0.0253.

P value Mx 2010 v 2023 0.41

Conclusion: There is a significant difference in the type of surgery we undertake in women over 70. Older women are more likely to have a mastectomy and less likely to have oncoplastic surgery. 20% of our patients are having OBS are over the age of 70. In a recent analysis of ten published oncoplastic series only 10% of all women included were over 65 years (Chia et al (Br J Surg. 2023 Oct; 110(10): 1309–1315). Our HES (Hospital Episode Statistics) data (12 months to April 2024) shows that 32% of all breast conserving operations for cancer are oncoplastic (all ages). This is in the top quartile nationally. It is likely that the OBS rate we see in our older patients tracks this. OBS is well tolerated in older women and is often possible as a day case and yet there is a disparity of provision to this group.

POST-CHEMOTHERAPY AXILLARY CONSERVATION SURGERY - UTILITY OF PRE-OPERATIVE AXILLARY ULTRASOUND AND INTRA-OPERATIVE FROZEN SECTION

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Problem statement: The safety of axillary conservation in breast cancer patients rendered clinically axillary lymph node (ALN) negative after pre-operative systemic chemotherapy is under scrutiny. We previously validated low axillary sampling (LAS) in post-chemotherapy setting with FNR of 10%1. Pre-operative axillary ultrasound (aUS) is only 50% sensitive and 70% accurate in identifying ALN in upfront setting2. Intra-operative frozen section (ioFS) for ALN has false negative rate (FNR) of 5% in upfront setting3. We evaluated the accuracy of aUS and ioFS to identify ALN status in the post-chemotherapy setting. ***Methods***: Histologically proven, non-metastatic breast cancer patients (excluding those with N3- supraclavicular or internal mammary- nodes) who are clinically ALN negative post-chemotherapy and are a part of a randomized trial, "Post-chemotherapy Axillary Conservation Surgery (PACS)4" were included in this analysis. Accrual period was January 2023 to April 2024. LAS ioFS negative patients were randomized to undergo LAS-alone (experimental-arm) versus a complete ALND (control-arm). ***Results***: A total of 232 patients were accrued on the study, of which 169 were ALN negative on ioFS. Sixty-three patients had positive ALN on ioFS and hence underwent complete ALND. Out of 169 ioFS negative patients, 88 were randomized to LAS-alone and 81 to ALND arm. The median age of the cohort was 46.5 (27-70) years. At presentation, 110 patients had locally advanced (T3/4, N2/3) and 59 early (T1/2, N0/1) breast cancer; the median cT size was 5 cm (1.3-13); 39 were cN0, 103 cN1 and 27 cN2; 42.9% were HR positive, 37.1% HER2 positive and 20% triple negative. 56% (89/159) patients had overall pathological complete response (primary and axilla both). Post-chemotherapy, pre-operative aUS was done in 192/233 patients of which 32 patients had suspicious/indeterminate nodes on aUS. On ioFS,

11 patients who were deemed node negative had positive nodes on final histology. The sensitivity of aUS and ioFS was 32 and 85%, specificity 91% and100% and FNR 27% and 6.5% respectively. ***Conclusion***: Post-chemotherapy axillary conservation is feasible in 70.7% (164/232) patients. With 100% specificity and 6.5% FNR, ioFS can be effectively used to assess LAS-ALN. However, aUS (without FNAC) failed to meet adequate FNR and accuracy.

RESULTS OF THE INFLUENCE TRIAL: A STUDY COMPARING INDOCYANINE GREEN(ICG) FLUORESCENCE COMBINED WITH A STANDARD TRACER VERSUS ICG ALONE FOR SENTINEL NODE BIOPSY IN EARLY BREAST CANCER

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***Problem statement*:** Use of fluorescence mapping for sentinel lymph node biopsy (SNB) has a high rate of identification (98%), with studies showing levels of concordance over 90%, and comparable performance parameters between ICG and standard tracers. This randomised multicentre study aims to evaluate the accuracy and safety of ICG as a sole tracer agent for SNB in early breast cancer. ***Methods*:** A total of 100 patients with unilateral clinically node negative, biopsy proven invasive breast cancer (≤5cm) scheduled for sentinel lymph node biopsy, were recruited in two cohorts. Cohort 1 received ICG alone (n=25) or combined with radioisotope (RI) [Technetium99] (n=25); Cohort 2 received ICG alone (n=25) or combined with blue dye (n=25) for sentinel lymph node localisation. ***Results*:** Amongst evaluable patients (n=97), the overall sentinel lymph node identification rate was 96.9% (ICG alone = 97.9%; ICG + RI = 100%; ICG + blue dye = 92%). Node positivity rates were 17% for ICG alone, 18% for ICG + RI in cohort 1. Cohort 2 had 12% for ICG alone and 20% for ICG + blue dye. There were no significant differences (p0.05) in performance of ICG alone or combined with a standard tracer. ICG alone was shown to be non-inferior in terms of procedural and nodal detection rates. ***Conclusion*:** These results confirm high sensitivity for fluorescence localisation of sentinel lymph nodes with comparable performance to combined methods (with blue dye or RI). The fluorochrome ICG is reliable as a sole tracer and avoids potential drawbacks of blue dye and RI including staining, allergic reactions, availability, and costs.

CHEST WALL PERFORATOR BASED FLAPS FOR PARTIAL BREAST RECONSTRUCTION AFTER BREAST CONSERVATION SURGERY - A CASE SERIES

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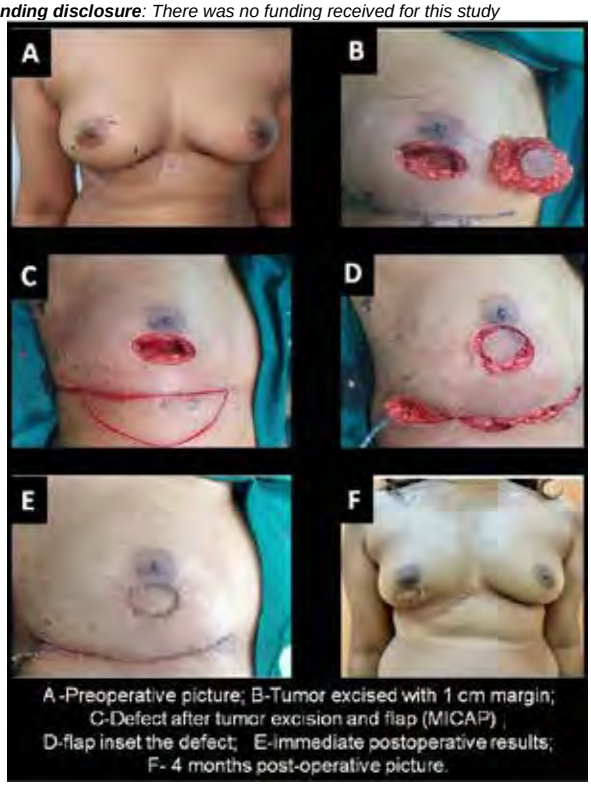
Problem statement: The cosmetic results after standard breast conservation surgery (BCS) are not predictable and depend on tumour size and breast volume. Perforator based flaps are a newer technique for partial breast reconstruction after breast conservation surgery in patients with small to medium size breasts. There is not much literature on these flaps beings used in Indian population, hence there was a need to understand the outcome of these reconstructions. In our study we report our experience with perforator flap reconstruction with regards to complications, cosmesis and patient satisfaction. ***Methods***: All women who underwent breast conservation surgery with chest wall perforator flap reconstruction at Ruby Hall Clinic, Pune, India from June 2021 to May 2024 were included in this study. Cosmetic outcome and satisfaction were assessed through an informal questionnaire using 4 point Likert scale. These were filled by patients 1-month post-surgery. ***Results***: A total of 42 patients underwent BCS + perforator flap reconstruction. Twenty-four patients underwent LICAP flap reconstructions,5 underwent MICAP flaps, 3 underwent AICAP flaps, 2 underwent TDAP flaps ,5 underwent LTAP flaps and 1 underwent SAAP flap. Two patients had flaps based on LICAP and LTAP together. The median tumour size was 3.15 cm. The mean operative time was 147.5 minutes and mean hospital stay was 2.23 days. Three patients had minor complications- minimal flap necrosis, hematoma and nipple dimpling, which were managed conservatively. There were no major complications. Median follow up was 19 months. Forty of the patients (95.2%) were very satisfied with the cosmetic outcomes. ***Conclusion***: Perforator flaps is an excellent technique for filling defects post BCS in small to medium sized breasts. Such patients can avoid mastectomy and have good cosmetic results.

List of Abbreviations:

- *·AICAP: Anterior intercostal artery perforator*
- *·LICAP: Lateral intercostal artery perforator*
- *·LTAP: Lateral thoracic artery perforator*
- *·MICAP- Medial intercostal artery perforator*
- *·SAAP- Serratus anterior artery perforator*
- *·TDAP: Thoracodorsal artery perforator*

Declaration of conflicts of interest: *The authors declare no conflicts of interest.*
Funding disclosure: *There was no funding received for this study*



A -Preoperative picture; B-Tumor excised with 1 cm margin; C-Defect after tumor excision and flap (MICAP) ; D-flap inset the defect; E-immediate postoperative results; F- 4 months post-operative picture.

EXPLORING THE LANDSCAPE OF LOCOREGIONAL THERAPY DE-ESCALATION IN EARLY BREAST CANCER: A SYSTEMATIC REVIEW

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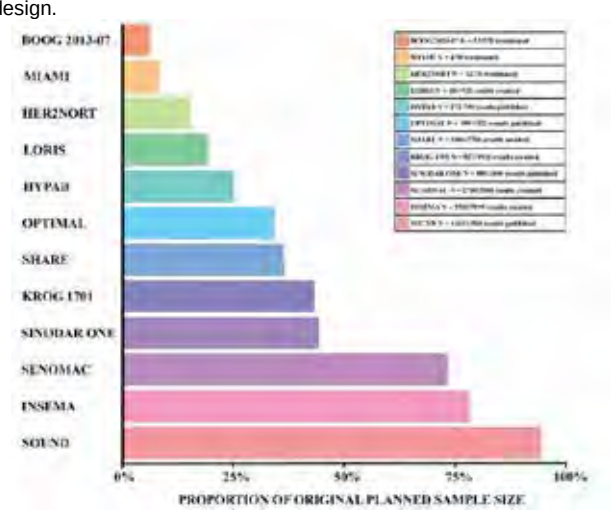
Problem statement: De-escalation of locoregional treatment in early breast cancer aims to reduce treatment-related morbidity whilst maintaining optimum oncological outcomes but robust evidence from clinical trials is essential to change practice. This systematic review aimed to describe the current landscape of de-escalation trials. ***Methods:*** This systematic review was prospectively registered on PROSPERO. Databases and trial registries were searched for interventional clinical trials involving locoregional de-escalation in early breast cancer published 2019-2024, or in progress, due to commence, or recently terminated. RCTs and prospective cohort studies were included. Non-interventional studies were excluded. Descriptive and methodological information was extracted. Mixed-methods analysis was performed. ***Results***: 114 trials (56 (49%) RCTs, 58 (51%) cohort studies) including 99,998 participants were included. Most studies were multicentre (n=81, 71%) and based in Europe or North America (n=87, 76%). RCTs were large with 62% (n=32) aiming to recruit 1000 participants whereas most cohort studies (n=51, 88%) reported sample sizes of 500 patients. Median trial duration was 9 years (range: 1-27, IQR: 6). Of the 62 surgical studies, 52% (n=32) evaluated de-escalation of axillary treatment with over a third (n=22, 35%) assessing reduction of surgery following completion of neoadjuvant therapy. Radiotherapy

(RT) trials (n=52) were more likely to focus on de-escalating treatment to the breast (n=49, 94%) in older patients (RT 50, n=27, 52% vs. surgery n=6, 10%) and/or use biomarker stratification (RT n=12, 23% vs. surgery n=3, 5%, p=0.004). Primary outcomes were mostly oncological (n=94, 82%) and often based on recurrence (n=64, 56%) with patient-reported outcomes used in a minority of studies (n=7, 6%). Most studies were powered at 80% for either non-inferiority or based on a pre-defined acceptability threshold, but few studies described how this margin was selected. Less than 10% (n=10) reported involving patients in trial design.



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***Conclusion*:** De-escalation studies should be robust, timely and patient-focused but few current trials achieve these aims. Innovative studies designed in collaboration with patients will be essential to support future personalisation of locoregional treatments.

***Declaration of interest**: Professor Stuart A McIntosh has received institutional research funding from Novartis and speaker honoria from MSD, Roche, BD, and AstraZeneca. Nil other interests.*

BORDERLINE PHYLLODES TUMOUR IN 10-YEAR-OLD PREPUBERTAL FEMALE PRESENTING WITH NON-TENDER DISCRETE BREAST LUMP: A CASE REPORT.

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Problem statement: Phyllodes tumours represent an extremely rare source of paediatric breast masses characterised by stromal overgrowth. A handful of cases of paediatric phyllodes have been reported in the literature, however, to our knowledge, no dedicated paediatric pathway exists to date. This case highlights the lack of specific guidelines and various psychosocial considerations in patients of such a young age. ***Methods***: A 10-year-old prepubertal female of African descent presented to the symptomatic breast unit with a 6-7 week history of an enlarged non-tender well-circumcised mass in her left breast. Examination of her right breast and both axillae were unremarkable. Ultrasound of her left breast showed a mass measuring at least 8.2 x 4.7cm with internal vascularity. It was reported as a possible juvenile fibroadenoma. ***Results***: An excisional biopsy under general anaesthetic was performed, the specimen measured 8.0 x 8.0 x 5.5cm in size and weighed 199 grams. A well-circumscribed epithelial-stromal neoplasm was identified with histopathological analysis reporting a borderline phyllodes tumour. ***Conclusions***: Paediatric breast tumours are a rare occurrence with phyllodes tumours accounting for a minority of cases. Accurate diagnosis of phyllodes tumours in the paediatric population is challenging due to the lack of an established paediatric pathway and diagnostic difficulty in differentiating phyllodes from benign fibroadenomas.

ONCOLOGICAL OUTCOMES OF LARGE VOLUME PARTIAL BREAST RESECTIONS RECONSTRUCTED WITH LATTISSIMUS DORSI FLAP OR THERAPEUTIC MAMMOPLASTY

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Problem statement: Breast conservation surgery (BCS) is equivalent to mastectomy. Oncoplastic restoration of breast is necessary in most BCS. The oncoplastic procedure are chosen as per suitability of tumour location, breast/tumour ratio and degree of ptosis (Joshi et al, IJSO 2024). Latissimus dorsi (LD) flap or therapeutic mammoplasty (TM) are often selected for cosmetic restoration in large volume resection. We evaluated the oncological outcomes of these patients. ***Methods***: We retrospectively analysed a prospectively maintained database of patients who have undergone BCS and reconstruction with either LD flap or TM with contralateral symmetrisation between January 2013 to December 2021. The surgical decision was made after multidisciplinary discussion and rest of the neo/adjuvant treatment was as per standard Institutional protocols. Clinico-pathological data was collected from electronic medical records and analysed in SPSS-V25. ***Results***: A total of 280 patients underwent eBCS during the study period. The oncoplastic techniques used were either LD flap (166, 59.3%) or TM with contralateral symmetrisation (114, 40.7%). The median age of the cohort (n=280) was 43 year (25-77). 162 (57.9%) patients had early breast cancer (cT1,2; cN0,1) and118 (42.1%) locally advanced; 264 (94.3%) were invasive ductal carcinoma; 233 (83.2%) were histological high grade. The median cT size was 4 cm (1-20); 229 (81.6%) were cN1, 46 (16.6%) were cN2 and 5 (1.8%) cN3; 187 (66.8%) were ER/PgR positive, 41 (14.6%) HER2 positive. 144 (51.4%) had surgery first and 136 (48.6%) were operated post chemotherapy. The margin positive rate was 5% (14/280), all were revised. The median and mean volume of resection was 327 and 478 cm3 (22-3528) respectively. At a median follow-up of 40.1 months, 57 recurrences were observed (12 local, 41 distant, 4 local and distant). The 5-year disease-free and overall survival were 79.6% and 88.6%. On univariate analysis (Log Rank test), ER/PgR negative status (p 0.008) and cN2/3 stage (p 0.048) and on multivariate Cox Regression, younger age (HR 0.96, 0.92-0.99, p 0.011) were associated with worse DFS. ***Conclusion***: “Extreme” BCS with appropriate oncoplastic procedure is oncologically safe. Negative margin status was achieved in all cases and local recurrence rate was 5.7%.

SHOULD WE ADOPT NO CANCER ON INK? AN AUDIT OF MARGIN RE-EXCISION RATES AGAINST ASCO AND ABS GUIDELINES

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Problem statement**:* Ideal margin width remains controversial with discrepancy between guidelines. American Society of Clinical Oncology (ASCO) recommend “no cancer on ink” for invasive disease and to aim for margins ≥ 2mm for pure ductal carcinoma insitu (DCIS), whilst Association of Breast Surgery (ABS) recommend a margin of 1mm for invasive and insitu disease. The UK National Margins Audit 2 (2023) presented a re-operation rate of 16.9%. American Society of Breast Surgeons (ASBrS) “toolbox” aims for re-operation rates ≤10%. Regional Cancer Alliance guidelines have adopted the ASCO position, although until present our multidisciplinary team (MDT) adheres to ABS recommendations. ***Aim: to establish margin re-excision rate and audit against ABS and ASCO guidelines to determine the impact of adopting ASCO guidelines. ***Methods***: In a UK symptomatic breast unit, we retrospectively identified patients undergoing Breast Conserving Surgery (BCS) for invasive breast cancer or insitu disease in 2023, and re-excisions in the following 4 months. For re-operations, we ascertained: reported margin width, specimen weight, tumour size on imaging and histology, multifocality, and neoadjuvant treatment. This data was audited against ABS and ASCO standards. ***Results***: 170 BCS procedures were performed, of which 20 patients underwent margin re-excision (11.7%). 17 patients underwent further BCS, and 3 underwent mastectomy. 4 patients required a third operation. 2 patients had received neoadjuvant systemic therapy and 3 were multifocal. 90% (18/20) of re-excisions were for invasive disease with/without associated DCIS, only 2 patients had pure DCIS. All patients undergoing re-excision fulfilled ABS guidelines, however 8 patients did not fulfil ASCO

guidelines and may have avoided re-operation. Limitations include relatively small numbers and a low rate of pure DCIS. ***Conclusion***: Our re-excision rate of 11.7% is lower than the UK average and heading towards the ASBrS ≤10% target. Adoption of ASCO guidelines would have reduced re-excision rates by 40%, translating to a margin re-excision rate of 7%. This would reduce variation in regional practice and allow more reliable comparison at a Cancer Alliance level. Reduced re-operation rates also confer benefits to patients (shorter recovery time, reduce delay to adjuvant treatments) and health systems (improved theatre utilisation and fewer MDT discussions).

DELAYED POST-BIOPSY TO SURGERY INTERVAL TENDS TO INCREASE AXILLARY NODAL METASTASIS, ESPECIALLY IN EARLY BREAST CANCER PATIENTS

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Problem statement: Delayed between diagnosis and breast cancer surgery may cause concerns of tumor progression. Tumor size and lymph node metastasis have been the most powerful prognostic factors for breast cancer treatment. Therefore, we aimed to evaluate the effect of time to surgery on the proportion of metastatic axillary lymph nodes controlled by tumor size. ***Methods***: Cross-sectional study of primary breast cancer patients treated between October 2021 – December 2022 at Division of Head Neck and Breast Surgery, Siriraj Hospital, Thailand. We examined the association between lymph node status and time to surgery stratified by primary tumor size. ***Results***: 424 breast cancer patients ages 25 to 97 years old (mean 60.95) have tumor size of 17±13.38 mm. and 20.8% have axillary lymph node metastasis. Means time to surgery was 7 ± 3.11 weeks. Population has early breast cancer up to 79% of cases that did not have lymph node metastasis, and 58% are T1 lesions. The proportion of positive lymph node patients stratified by tumor size in T1 lesions are 10.6%, T2 lesions are 34.56%, and T3 lesions are 43.75% respectively. Every cluster of time to surgery in T2 and T3 tumors have lymph node involvement at the time of surgery. However, no significant difference between the time to surgery and the proportion of axillary nodal metastasis staging. There was a significant finding among patients with T1 tumors. We found that lymph node involvement was first found in 4th week after diagnosis (more than 3 weeks waiting time to surgery). The difference is statistically significant between time to surgery and axillary nodal metastasis in this group (p-Value = 0.022); nodal staging gradually turned more advanced while increasing the time to surgery. There were more N2 and N3 nodal staging in the group whom delayed surgery. Either subtype of breast cancer, pathological grading, and lympho-vascular/perineural invasion showed no significant add-on difference in lymph node metastasis staging, by time to surgery. ***Conclusions***: Increasing time to surgery demonstrated a significant association with more advanced N staging and has to be a concern for proper action in early breast cancer, particularly in small-size tumors (T1).

PIONEERING BREAST CANCER EDUCATION IN EGYPT: INSIGHTS FROM THE FIRST ADVANCED ONCOPLASTIC BREAST SUREGRY SKILLS COURSE BY THE EGYPTIAN GROUP OF BREAST SURGEONS

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Problem statement: Breast cancer (BC) is the most prevalent malignancy among women in Egypt, with an incidence rate of 35.8 per 100,000. BC in Egypt typically occurs approximately ten years earlier than in the UK, where screening programs have significantly reduced the mastectomy rate to 27%. In contrast, 56.8% of Egyptian BC patients present with stage 3 disease, and 62% undergo mastectomy. Unlike the UK, where breast surgery is specialized, general surgeons primarily perform these procedures in Egypt. ***Methods***: In response to these challenges, a nationwide clinical screening program was initiated in July 2019, involving 10.8 million participants across 3,538 primary healthcare units. This program invited all women over 18 years, resulting in an 80% diagnosis rate at stages 1 and 2, which is double the pre-program rate. Additionally, we conducted a specialized training course on breast conservation surgery (BCS) featuring didactic lectures, video presentations, live surgeries, and multidisciplinary team (MDT) discussions. The faculty included experts from Egypt and the UK, and participants comprised Egyptian surgeons along with two from Libya and one from Yemen. ***Results***: The screening program significantly improved early-stage BC diagnosis rates, with 80% of cases now identified at stages 1 and 2. Furthermore, 5% of detected cases involved women under 35 years. Feedback from the BCS training course indicated high satisfaction with the content and structure, highlighting its effectiveness in enhancing surgical skills and knowledge among general surgeons. ***Conclusion***: The nationwide screening program and specialized BCS training course have significantly advanced BC management in Egypt. These initiatives have improved early detection rates and surgical outcomes, promoting the oncological safety and superior patient outcomes associated with BCS. Future plans involve expanding training regionally to further align Egyptian breast cancer care with global standards and enhance patient outcomes through specialized surgical training.

ADVANCING BREAST RECONSTRUCTION: LICAP FLAP OPTIMIZATION TO ACHIEVE SUPERIOR NIPPLE AND BREAST SYMMETRY

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Breast conservative therapy has demonstrated superior patient-reported outcomes and survival rates compared to mastectomy. However, achieving optimal nipple and breast symmetry with lateral chest wall perforator flaps (CWPF) remains a significant challenge. This study investigates the optimization of the lateral intercostal artery perforator (LICAP) flap technique to address issues of nipple lateralization and breast asymmetry. ***Problem Statement***: Conventional LICAP flap procedures involve patient positioning and incisions on the back, leading to longer operative times and subsequent breast and nipple lateralization. The modified LICAP flap technique addresses these issues, resulting in improved outcomes. ***Methods***: Our study involved a detailed analysis and further modification of the LICAP flap technique in a cohort of 64 patients undergoing partial breast reconstruction. Key modifications included precise preoperative planning in both standing and supine positions, with the medial limb of the double lazy S incision adjusted to a more vertical orientation, away from the lateral boundary of the breast. Intraoperative adjustments involved initiating the flap laterally and dissecting towards the breast in a plane deep to the mastectomy plane, avoiding interruption of lateral breast tissue unless included in cancer resection. Enhanced surgical flap placement was achieved by flipping the flap over itself to avoid subcutaneous thickening. Patients were evaluated over a minimum of 6-month postoperative period to assess nipple position, breast symmetry, and overall aesthetic outcomes. ***Results***: The modified LICAP flap technique demonstrated significant improvements in achieving nipple and breast symmetry. Quantitative assessments revealed a substantial reduction in nipple malposition and enhanced breast contour symmetry. ***Conclusion***: The optimization of the LICAP flap technique significantly enhances partial breast reconstruction outcomes. The modifications not only address critical issues of nipple malposition and breast asymmetry but also reduce the need for secondary interventions, offering improved aesthetic results and higher patient satisfaction.

IS COMPLETION AXILLARY NODE CLEARANCE OF ANY VALUE TO GUIDE ADJUVANT TREATMENT CHOICE? - OUTCOMES OF AN AUDIT

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Problem statement**:* The current standard of care is to perform axillary node clearance (ANC) following positive sentinel lymph node biopsy (SLNB) despite the emerging evidence supporting the de-escalation of axillary surgery in breast cancer. Although completion ANC is used to inform adjuvant treatment plan or candidacy to Abemaciclib, it is associated with up to 20% risk of lymphedema, a life-changing consequence. We aimed to evaluate the likelihood of escalating adjuvant therapy based on nodal status following further axillary surgery. ***Methods**:* Patients who underwent axillary surgery between September 2021 and August 2023 were retrospectively reviewed aiming to include cases who had ANC following positive SLNB without prior chemotherapy. Data regarding tumour characteristics and adjuvant treatment was collected. This audit aimed to assess the outcomes of completion axillary surgery and the effect on cancer staging, adjuvant treatment and eligibility to Abemaciclib. ***Results: Out of 355 patients who had SLNB, 60 had completion ANC following positive SLNB. 44 patients (73%) did not have further positive nodes, nevertheless, 43/44 (98%) were still offered adjuvant chemotherapy and 10/44 (23%) received adjuvant chemotherapy before completion ANC. N staging did not change from N1 to N1+ in 83% of cases (50/60), subsequently, having no indication for escalating adjuvant treatment. Only 10 patients (17%) received Regional Nodal Irradiation (RNI) and/or extended endocrine treatment after being upstaged to N2 or N3. From 47 patients who were candidates for Abemaciclib therapy, 57% (27/47) were already eligible for Abemaciclib before completion ANC. ***Conclusion***: Further axillary surgery after a positive SLNB is unlikely to upstage the disease with minimal effect on adjuvant treatment decision. An individualized multidisciplinary discussion should be undertaken considering risk-to-benefit ratio of completion ANC on the patient and the health system.

LATE TOXICITY AFTER ADJUVANT WHOLE BREAST ULTRA-HYPOFRACTIONATED RADIOTHERAPY WITH SIB: A MATCHED PAIR ANALYSIS BETWEEN OPEN CAVITY AND ONCOPLASTIC SURGERY

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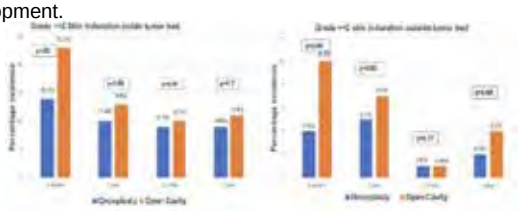
Purpose: To compare late toxicity of Ultra hypo-fractionated radiotherapy (uHFRT) following breast conservation surgery with either open cavity (OC) or oncoplasty (OP). ***Materials and methods***: All patients received uHFRT whole breast RT with Forward planned Intensity Modulated RT(F-IMRT) or inverse planned Volumetric Modulated Arc Therapy (VMAT). Tumor bed (TB) boost was given simultaneously using electrons or photons. The OP patients were matched with OC patients using propensity score matching in 1:2 ratio. Skin induration inside & outside TB, atrophy and breast edema were assessed at 6 monthly intervals after RT up to 3 years using RTOG late toxicity grading. For dose volume correlation, V90/V95/V100/V103 were collected for planning target volume (PTV) of breast and TB. Statistical analysis was conducted by categorizing toxicities into two groups: ≤grade 1 and ≥grade 2. Dosimetric correlation with toxicity groups was studied using Mann-Whitney U test. Associations of type of cavity, RT technique and dose fractionation regimen with toxicity were obtained using Chi-square test. ***Results***: Between March 2020 & January 2021, 339 patients [OP=137 /OC=202)] received adjuvant RT [FAST-F= 266/FAST=73, (F-IMRT=202/VMAT =137)]. The median follow-up was 33 months [IQR 30- 40 months]. Majority of the patients had tumors of size ≤ 5cm (96.4%) and were node negative (58.4%). Patients with ≥grade 2 skin induration inside TB had a significantly higher median breast PTV V100 of 663.5cc (532.5-872.5 cc), compared to 560.4cc (421.6–733.7 cc) those with ≤grade 1 toxicity (p=0.004). Similar trend for skin induration outside TB [≥grade 2=760.9cc (689.5- 888.0cc) vs ≤grade 1= 562.2cc (429.7- 729.1cc), p= 0.001] was seen. At 2 years there was no significance of irradiated breast volume due to resolving trend of toxicities. There was also no difference in toxicities when comparing RT dose fractionation and technique [Figure 1]. ***Conclusion***: ≥Grade 2 skin induration, atrophy and breast edema occur at 6 months but eventually improve by 2 years post-RT. Irradiated breast volume correlated with skin induration at 6 months, but there was no difference at 2 years. The study implies that there is no significant impact of type of surgery, dose fractionation and RT technique on late toxicity development.



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FLUORESCENT-GUIDED SURGERY IN ECTOPIC BREAST SURGERY: NODAL STAGING

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Problem *statement*: Ectopic Breast Tissue (EBT) affects 2-6% of females and can rarely undergo malignant transformation (0.3%). Lymphnode staging should apply the same principles as in orthotopic breast carcinoma by means of SNB in early breast cancer. Lymphoscintigraphy and blue dye have been suggested as possible methods to identify the lymphatic region at risk, however, confusion persists in the localisation of the nodal region to be staged (axilla, inguinal) in case of abdominal EBT. We present the first case of real time nodal staging mapping using fluorescent indocyanine green (ICG) in a patient with breast cancer in abdominal EBT. ***Methods***: A 64yo post-menopausal female presented with 9 month history of 3 cm irregular lump in the left upper abdomen. First, sarcoma diagnosis was ruled out. Imaging of the ortothopic breasts was normal. US scan of the abdominal wall showed a 30mm Ill-defined mass. Core biopsy demonstrated a G2 invasive mammary cancer (8, 5, HER2neg) with DCIS. The patient underwent complete excision of the abdominal EBT and nodal staging mapping using ICG only. ***Results***: ICG injection at the level of the EBT was performed at the time of surgery as per departmental/local practice (2mls 0.5%). Fluorescence-guided camera was used to follow the lymphatic drainage real time, which confirmed direct nodal drainage into the ipsilateral axilla. No drainage into the ipsilateral inguinal area was identified. Axillary SNB was performed. Pathology confirmed the presence of 30mm G2 invasive solid papillary carcinoma in accessory breast tissue associated with associated DCIS (whole tumour diameter 57mm). One SN was identified which was negative for metastasis. ***Conclusion***: Nodal staging in breast cancer arising from accessory abdominal breast tissue is highly controversial. Radionuclides and blue dye have been employed, alone or in combination, for nodal staging. We present the first case of real time nodal mapping using ICG alone in order to identify the draining nodal site and detect the sentinel node. This report may serve as an example for future cases of ectopic abdominal breast cancer in which SNB biopsy is indicated.

RADIATION THERAPY FOR CONTRALATERAL INTERNAL MAMMARY LYPMH NODES

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Problem statement: Based on the TNM classification, metastasis to internal mammary lymph nodes (IMLN) on the opposite side to the primary tumor is classified as distant metastasis. There remains controversy over whether contralateral IMLN metastasis should be considered distant metastases or locoregional spread. Furthermore, the role of definitive radiation therapy as a local treatment remains unclear. ***Methods***: We retrospectively evaluated the data of patients who underwent definitive radiation therapy for contralateral IMLN metastasis at our institution between October 2018 and March 2024. Treatment outcomes were analyzed. ***Results***: From October 2018 and March 2024, one patient received definitive radiation therapy for contralateral IMLN metastasis. The patient was diagnosed cT4dN3bM0 StageIIIC invasive ductal carcinoma which subtype is triple negative. The patient received 3 cycles of dose-dense epirubicin and cyclophosphamide and 1cycle of dose-dense doxorubicin and cyclophosphamide followed by 4 cycles of dose-dense paclitaxel. After these systemic therapies, mastectomy and axillary lymph node dissection was performed. Pathological stage was ypT3N1aM0 StageIIIA.
Post mastectomy radiation therapy (PMRT) 50 Gy in 25 fractions was performed. After 18 months from the PMRT, contralateral IMLN metastasis was diagnosed by CT scan, and confirmed that is single recurrence by FDG-PET/CT. The patient received 70 Gy in 35 fractions definitive radiation therapy for IMLN metastasis. The patient had multiple bone metastasis after 2 months from the radiation therapy and treated with Atezolizumab and Nab-Paclitaxel. ***Conclusion:*** In this small case report, we could not support the theory that contralateral IMLN metastasis should be treated with curative intent rather than as a stage IV disease.

MOLECULAR ASSAYS

PREDICTION OF HER2 POSITIVE BREAST CANCER PATIENTS RESPONSE TO ANTI-HER2 THERAPY USING mRNA LEVEL

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Introduction: HER2-positive (HER2+) breast cancer (BC) constitutes 10-15% of BC cases. To date, HER2+ status evaluated through immunohistochemistry (IHC) (score 3+) or IHC 2+ with evidence of HER2 gene amplification, determines the eligibility to anti-HER2 therapy. However, about 40% of HER2+ BC patients experience recurrence following adjuvant anti-HER2 therapy, raising concerns about the reliability of current HER2 assessment methods and their ability to define HER2 positivity. MammaTyper® assay (Ref CC01010, Cerca Biotech GmbH) is a RT-qPCR BC subtyping platform based on the mRNA expression of ERBB2, ESR1, PGR, and MKI67. This study aims to evaluate the accuracy of the MammaTyper® assay in predicting the response of HER2+ patients to therapy. ***Material and methods***: A well characterised HER2+ BC cohort of 256 cases, diagnosed at Nottingham University hospitals between 2006-2018, was included. The cohort was divided into 2 groups: a treated group (n=143) who received adjuvant anti-HER2 therapy, and a non-treated group where the patients were diagnosed before approval of anti-HER2 therapy and received chemotherapy only (n=113). Tumour clinicopathologic characteristics were matched between the two groups. ***Results***: MammaTyper® assay identified 221/256 (86.3%) cases as HER2+, 11.7% (30/256) as HER2 low and 2% (5/256) as HER2 negative. Using MammaTyper® assay, HER2+ patients treated with anti-HER2 therapy had significantly prolonged DFS and DMFS (HR=0.56, p=0.006 and HR=0.57, p=0.012, respectively) with less risk of recurrence compared to those who were treated with chemo only, while the IHC-defined HER2+ patients had less significant results (HR=0.62, p=0.023 and HR=0.66, P=0.04, for DFS and DMFS, respectively). Conversely, MammaTyper® HER2 negative patients did not show survival difference between the group of patients who were treated with trastuzumab and those who were treated with chemotherapy only (p0.05). ***Conclusion***: Compared to the semi-quantitative IHC approach, MammaTyper® assay is more accurate in defining and identifying HER2+ BC patients that would benefit from anti-HER2 therapy.

THE IMPACT OF ONCOTYPE DX TESTING ON ADJUVANT CHEMOTHERAPY DECISION MAKING IN BREAST CANCER WITH SENTINEL LYMPH NODE MICROMETASTASIS

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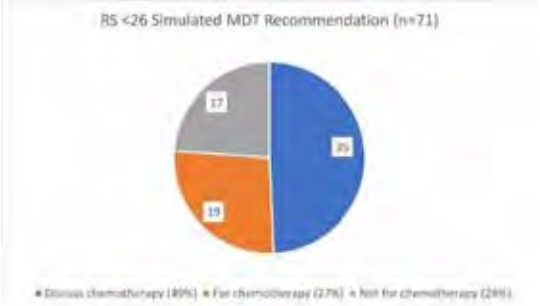
Problem statement: Oncotype DX testing has reduced the use of adjuvant chemotherapy in early breast cancer but there is a relative dearth of literature on patients with sentinel lymph node micrometastasis(SLNmi). Presence of SLNmi does not change axillary management, however many MDTs(Multi-Disciplinary Team) would consider this as a more aggressive biology. The aim of this study was to evaluate the real-world use of Oncotype DX testing on adjuvant chemotherapy decision-making in patients with SLNmi. ***Methods***: This retrospective cohort analysis of a prospectively maintained database included ER positive, HER2 negative patients with SLNmi who underwent Oncotype DX testing between 2016-2022 at a tertiary care hospital. A 3-member simulated MDT panel, who were blinded to the Oncotype recurrence score(RS), made recommendations on adjuvant chemotherapy based on clinicopathological data and PREDICT scores. The simulated MDT recommendations were then compared to the Oncotype RS. A RS of 25 was used to identify patients who would benefit from adjuvant chemotherapy, based on the TAILORx trial. ***Results***: 77 patients were included. Median age was 58 years(range 33-79). 53(69%) of patients underwent breast conservation. Most tumours were ductal(71%) and Grade 2(68%). 39% of cancers had lymphovascular invasion. Median tumour size was 23mm (range 4-77mm). The PREDICT score was 2% in 34 patients(44%), 3-5% in 26 patients(34%) and 5% in 17 patients(22%). Median number of SLNs excised was 2(range 1-5); median size of SLNmi was 0.75mm(range 0.2-1.9mm). The median Oncotype RS was 16(range 0-45). 6 patients had RS25, all had a recommendation for chemotherapy by the simulated MDT. Of the 71 patients with RS ≤25, the simulated MDT recommended chemotherapy in 19(27%), a personalised chemotherapy discussion in 35(49%), and no chemotherapy in 17(24%) (Image 1). Thus, 76% of these patients had a change in management due to the Oncotype DX test, avoiding a recommendation for chemotherapy or a discussion regarding possible chemotherapy.



Discussion: This real-world analysis found that Oncotype DX aids optimal adjuvant treatment decision making in patients with SLNmi, changing the recommendation to give chemotherapy in up to 76% of the cohort. Making treatment decisions on adjuvant chemotherapy using clinicopathological data alone leads to overtreatment.

NEOADJUVANT THERAPY

MANAGEMENT OF A LYMPH NODE POSITIVE AXILLA AFTER NEO-ADJUVANT CHEMOTHERAPY FOR BREAST CANCER- A SINGLE CENTRE EXPERIENCE.

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Problem statement: There is varied utilisation of neoadjuvant chemotherapy (NACT) and endocrine therapy in breast cancer patients in the UK. The purpose of NACT is to downstage locally advanced and inflammatory breast cancer. It can facilitate breast conservation and downstaging of axillary metastases to achieve de-escalation of surgery in selected patients. NACT allows for in vivo assessment of the efficacy of NACT. ***Methods***: 208 patients were identified from prospective database of breast cancer patient who received neoadjuvant therapy between April 2018 and March 2023. 26.4% (n-30) of these patients had axillary metastases on preoperative needle core biopsy. Overall, 12.5% (n-26) underwent immediate reconstruction. The aim of this study was to review the axillary management of these patient. ***Results***: The median age of the patients was 55 (range 25-77). The average tumour size was 30.44mm on MRI scan. 78 patients underwent sentinel node biopsy (SNB) and 10 patients had axillary node clearance (ANC). 43.5% (n-34) had triple negative cancers. 12.8% (n-10) were HER2 receptor +ve. There was complete pathological response (CPR) in 44.8% (N- 35), partial response in 53.8% (n-42) and no response in 1 patient. The average number of nodes retrieved were 3.3. Adjuvant radiotherapy to axilla was given to 15.6% (n-20) patients. None of the patients who had positive node(s) on SNB underwent completion ANC as agreed in the breast MDT. 1 triple negative patient developed distant and one ER +ve patient developed local breast recurrence. None of the patients had axillary recurrence. ***Conclusion***: There is wide variation in the surgical management of lymph node positive patients undergoing NACT in the UK. There is emerging trend for de-escalation of surgery in the form of breast conserving surgery and SNB or targeted axillary dissection (TAD). There is multidisciplinary guidance from ABS on surgical management of breast and axilla after NACT. There were variations in the management of axilla of our cohort of patients. Our study indicates that performing SNB/TAD followed by adjuvant radiotherapy to axilla is safe, as there were no axillary recurrences in our cohort of patients. Trials like ATNEC and NSABP B51 will hopefully clarify these controversies.

PATHOLOGICAL COMPLETE RESPONSE RATE AS A PROGNOSTIC FACTOR ACROSS MOLECULAR SUBTYPES OF BREAST CANCER- INSIGHTS FROM REAL WORLD DATA!

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Problem statement: Pathological complete response (pCR) is considered a surrogate endpoint for predicting patient-level outcomes in breast cancer. The pCR rate varies from 5-65% depending upon stage, molecular subtype, number of chemotherapy cycles. Risk adapted strategies to change maintenance chemotherapy improve outcomes in triple negative (TN) and HER2neu+ve patients. We aimed to understand the prognostic role of pCR. ***Method***: A prospectively maintained database of non-metastatic breast cancer patients operated post-chemotherapy between January and December 2017 was evaluated retrospectively. Clinico-pathological and follow-up details were obtained from hospital electronic medical records. Data was analysed in SPSS-V29. ***Results***: A total of 710 patients underwent surgery post-chemotherapy. The median age was 46.9 (21-74) years. At presentation, 87 (12.3%) were cT1+T2, and 623 (87.7%) cT3+T4. Pre-chemotherapy lymph node stage was cN0, cN1, cN2, and cN3 in 70 (9.9%), 372 (52.4%), 243 (34.2%) and 25 (3.5%) patients respectively. The median cT size was 5.5 (2-22) cm. 31.1% (221) patients received both lines of chemotherapy first whereas 68.9% (489) had surgery between two regimens of chemotherapy. Overall pCR rate was 22.8% (162/710). The pCR rate in HR+ve HER2neu-ve, HR+ve HER2neu+ve, HR-ve HER2neu+ve and TN subtypes was 9% (19/211), 16.5% (22/133), 36.1% (39/108) and 33.9% (77/227) respectively (excluding the 31 patients where HER2 FISH test was not available for equivocal IHC). The post-chemotherapy residual median pT size was 2.2 (0-16.5) cm and 48.2% (342/710) patients had persistent positive nodes. At a median follow up of 64 months, overall DFS was 69.1% (65.5-72.7%). On multivariate cox regression analysis, age (HR-0.98, 0.97-0.99, p=0.019), higher cT-stage (HR-2.56, 1.42-4.56, p=0.002), higher c-N stage (HR-2.62, 1.29-5.35, p=0.008) and pCR (HR-6.20, 3.42-11.22, p0.001) significantly predicted DFS. At 5 years, DFS was significantly better in patients with pCR compared to patients without pCR across HR+ve HER2neu+ve (90.2 vs 54.2%, p=0.03), HR-ve HER2neu+ve (64.5 vs 91.7%, p=0.001) and TN (93.2 vs 59%, p0.001) molecular subtypes but not across the HR+ve HER2neu-ve (88.2 vs 69.5%, p=0.09). ***Conclusion***: pCR is an independent prognostic factor in TN and HER2neu+ve breast cancers. However, in HR+ve breast cancer, it does not help in prognosticating and pCR rates continue to be dismal.

EMERGING TECHNOLOGIES FOR MONITORING BREAST CANCER RESPONSE TO NEOADJUVANT CHEMOTHERAPY: A SCOPING REVIEW

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Problem statement*:** Neoadjuvant chemotherapy (NACT) is increasingly being used in early breast cancer treatment, and treatment responses are highly variable. Accurate de-escalation of surgery is only achievable if there is accurate in vivo monitoring of tumour response to NACT, and current methods are inadequate. This scoping review provides an overview of the emerging technologies in development that aim to predict, monitor and diagnose breast cancer response to NACT. ***Methods: Embase, Medline, Pubmed and Cochrane were searched to 26/1/24. Studies using human tissue or human subjects investigating the ability to detect changes in breast cancer after/during a course of NACT were included. There were no limits to what constituted a 'novel technology'. Excluded were methods of assessing or optimising the diagnostic accuracy of mammogram, ultrasound or magnetic resonance imaging (MRI) as these are established techniques. ***Results*:** 2478 unique studies were identified from searches, of which 1163 did not meet inclusion criteria, leaving 1315 for analysis. The number of studies relating to existing technologies in routine clinical use were: 246/1315 (19%) MRI and 64 (5%) mammogram/ultrasound. Studies related to existing technologies in routine clinical use but not for monitoring response in NACT were digital breast tomosynthesis (5/1315;1%), computed tomography (8/1315;1%), gene panel tests (129/1315;10%), positron emission tomography (148/1315;11%) and core biopsy of tumour site (44/1315;3%). 116/1315 (8%) developed clinical nomograms based on routine clinical investigations. 489/1315 (37%) studies correlated various established biomarkers with pathological response, of which 424/489 (87%) investigated baseline markers only. There were 65/1315 (5%) studies relating to novel technologies which included 37 investigating circulating DNA/RNA, 17 investigating Diffuse Optical Imaging and 11 elastography. A Technology Readiness Assessment for clinical practice was performed, which identified all were between TRL1 (Basic Principles) and TRL4 (Bench Scale Research). ***Conclusion*:** The majority of research activity is focused on optimising existing technologies which may never provide the step change in diagnostic accuracy required to advance surgical de-escalation. Research activity should be focused on identifying effective novel technologies and driving translation into the clinical environment.

USING RAMAN SPECTROSCOPY TO DIFFERENTIATE TREATMENT RESPONSE AFTER NEOADJUVANT CHEMOTHERAPY IN EARLY BREAST CANCER

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Problem statement: Current methods of assessing tumour response to neoadjuvant chemotherapy (NACT) in early breast cancer are inaccurate and limit the potential for surgical de-escalation. Raman spectroscopy is a vibrational spectroscopy with unique sensitivity and specificity to detect the biochemical differences in biological tissue. We report the preliminary results from a proof of principle study designed to determine the ability of Raman spectroscopy to differentiate treatment responses after NACT. ***Methods*:** Formalin fixed paraffin embedded breast tissue specimens from surgical resection after neoadjuvant

chemotherapy were obtained from a release of diagnostic archive from the Royal Devon and Exeter Hospital Tissue Bank (CRF566 STB76/CTB68). Specimens were sectioned and mounted for Raman analysis and adjacent H+E slides for pathological diagnosis. After deparaffinisation of Raman sections, a Raman microspectrometer (InVia) with 830nm laser excitation at 50X magnification obtained spectral maps of areas with corresponding validated histopathological diagnosis of adjacent H+E sections. Machine learning techniques were used for data analysis. ***Results:*** Samples from n=50 patients were analysed with ~55000 spectra, ~45000 of which remained after pre-processing. Provisional data analysis utilising machine learning approaches (support vector machine SVM) looks encouraging. In an initial two class model (tumour vs benign) including full Raman spectra (i.e. all features), in 5-fold validation testing 90% overall accuracy was achieved. When the classification model data was reduced to include limited number of spectral features (between 5-10) to avoid overfitting, only a slight reduction in classification performance was observed with an accuracy of ~86%. Classification models were then expanded to 3 class models (tumour, benign and complete pathological response) where classification performance of 75% was achieved. It is expected improved performance will be achieved when the modelling is fully optimized. ***Conclusion:*** This is the first reported study to investigate the potential for Raman spectroscopy to differentiate treatment response after NACT. Clinical applications such as needle probes and transcutaneous measurements are concurrently under development, allowing the translation of these findings to be realised. Raman spectroscopy has the potential to be an adjunct to imaging modalities to monitor treatment response in vivo, facilitate de-escalation of precision surgery and guide adaptive, tailored care to patients.

NEOADJUVANT ENDOCRINE THERAPY: A SINGLE CENTRE STUDY EXAMINING THE USE OF NEOADJUVANT ENDOCRINE THERAPY IN ER +VE BREAST CANCER PATIENTS

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***Problem Statement*:** ER +ve, HER2 -ve breast cancer commonly do not respond well to neoadjuvant chemotherapy. ER +ve breast tumours are generally highly responsive to endocrine treatment. Neoadjuvant endocrine therapy (NAET) may be used in ER+ve HER2-ve patients to downstage locally advance and large breast cancer to allow breast conserving surgery, and unfit patients requiring perioperative optimisation. This study aims to review the use of NAET at Diana, Princess of Wales Hospital in treating ER +ve breast cancer over a 5 year period. ***Methods*:** A total of 37 patients with ER +ve breast cancer who received NAET were identified from the local cancer database between August 2018 and March 2023. Data collection included age, radiological size, type of tumour, receptor status (ER, PR, HER2), duration of NAET, progression on NAET, type of surgery, clinical and pathological response, and nodal positivity among other parameters. The Mann Whitney U test was used to determine cancer progression pre-operatively as well as recurrence post-operatively and the Kruskal Wallis test was used to correlate duration of NAET to tumour response. ***Results*:** Average age of patients was 70.5 years (range 55-90). Symptomatic patients comprised 75.6% and screen detected cancers were 16.2%. Average tumour size on imaging was 21mm (7.3-87) and mean duration of NAET was 5.3 months (1-36). 59.46% (n = 22) of patients had breast conserving surgery (BCS) and 40.54% (n = 15) had mastectomy. Average tumour size on resection was 30mm (7-88). Mann Whitney U test showed increased duration of NAET was associated with progression of cancer (P 0.029). The duration of NAET was not significant for recurrence (P 0.86). ***Conclusion*:** This study showed that the use of NAET is a safe and effective option for postmenopausal women with ER +ve HER2 -ve breast cancer managed by the multidisciplinary team.

PRECISION ONCOLOGY

LABEL-FREE IMPEDIMETRIC BIOSENSOR BASED ON DNA CHARACTERIZATION FOR HUMAN SAMPLES WITH BREATS CANCER

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Breast cancer (BC) is the most prevalent cancer among women and ranks second among the most common cancers worldwide. Therefore, early detection is essential for a better prognosis and treatment of the disease. Rapid and low-cost molecular analysis are especially required for specific diagnoses and treatment decision making; One way to achieve this goal is through the development of biosensors that allow the identification of specific molecular markers or the detection of deoxyribonucleic acid (DNA) and specific sequences in a quick, economical and simple way. Electrical bioimpedance spectroscopy (EbiS) has been used as a detection technique for the diagnosis and monitoring of human pathologies, and stands out for being a safe, fast, reusable, and easy technique. ***Method***: This study performs DNA characterization based on multifrequency EbiS measurements; DNA quantification without modifications, with the aim of exploring bioimpedance spectra, depending on the molecular concentration and structural components of total DNA from patients with breast cancer. Total human DNA was extracted from blood samples of breast cancer patients, the concentration, quantity and purity of the DNA was quantified with a spectrophotometer by optical density at 260-280 nm. Bioimpedance spectroscopy measurements were performed with the ScioSpec ISX3 spectrometer controlled by a personal PC in a frequency range of 100 Hz to 1 MHz in 126 logarithmically spaced steps. As a result, it was obtained that the sensitivity analysis for said integrated parameter seems relevant for the calibration of electrical impedance spectroscopy measurements to estimate DNA concentrations without labeling, indicating that the EBIS technique has a potential sensitivity in a certain frequency range to discriminate between different concentrations of DNA.
****Disclosure of Interest**: Precision oncology*

MODULATORS OF RESPONSE TO TRASTUZUMAB-BASED CHEMOTHERAPY IN HER2-POSITIVE BREAST CANCER

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HER2-positive breast cancer (BC) is an aggressive subtype with high recurrence rate. In this study we investigated modulators of response to trastuzumab based therapy in HER2-positive BC patients. ***Methods***: Five independent gene expression datasets were analysed to identify genes involved in trastuzumab efficiency in HER2-positive trastuzumab-sensitive and resistant cell lines. Differential gene expression analysis was performed using DESeq2 in R software. The top 10 differentially expressed genes related to trastuzumab response were identified and the gene with highest enrichment in trastuzumab-sensitive cell lines were selected for further analysis. mRNA expression was assessed in large BC cohorts, including METABRIC and TCGA, and the combined multicentric cohort, while protein expression was validated using the Nottingham BC cohort. The prognostic and predictive significance of TAF10, were evaluated. ***Results***: Analysis of *TAF10* mRNA expression in the TCGA cohort revealed significantly higher levels in BC tissues compared to matched normal tissues (p0.001). No significant correlation was found between *TAF10* mRNA expression and tumour clinicopathological parameters across the TCGA, METABRIC, and multigene assay cohorts. However, *TAF10* mRNA expression was significantly associated with hormone receptor-positive and HER2-positive tumours, particularly the HER2-enriched (HER2-E) molecular subtype (p0.001). High *TAF10* mRNA expression correlated with prolonged 5-year and 20-year breast cancer-specific survival (BCSS) in both the TCGA and METABRIC cohorts (p0.008 and p0.001, respectively). Multivariate Cox regression confirmed *TAF10* mRNA as an independent predictor of better survival. At the protein level, high nuclear TAF10 expression in HER2-posirtive BC cases was significantly associated with favourable tumour characteristics such as lower grade, smaller size, and better nodal status (p0.001), and was an independent predictor of longer BCSS and distant metastasis-free survival (DMFS) when adjusted for other clinicopathologic parameters. Furthermore, high TAF10 protein expression levels predicted better response to trastuzumab based chemotherapy compared to patients with low TAF10

expression. In chemotherapy only treated HER2-positive patients, high TAF10 expression had no predictive role. *TAF10* mRNA showed significant correlation with low *AKT3*, *KRAS*, *PIK3CA*, *mTOR* and *RICTOR* mRNA expression which are known genes for resistance to trastuzumab therapy. These findings underscore the potential of TAF10 as a prognostic and predictive biomarker in HER2-positive subtypes.

HEMATOLOGICAL AND BIOCHEMICAL MARKERS INFLUENCING BREAST CANCER RISK AND MORTALITY: PROSPECTIVE COHORT STUDY IN THE UK BIOBANK BY MULTI-STATE MODELS

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Background: Breast cancer is the most common cancer and the leading cause of cancer-related death among women. However, evidence concerning hematological and biochemical markers influencing the natural history of breast cancer from in situ breast cancer to mortality is limited. ***Methods***: In the UK Biobank cohort, 260,079 women were enrolled during 2006–2010 and were followed up until 2019 to test the 59 hematological and biochemical markers associated with breast cancer risk and mortality. The strengths of these associations were evaluated using the multivariable Cox regression models. To understand the natural history of breast cancer, multi-state survival models were further applied to examine the effects of biomarkers on transitions between different states of breast cancer. ***Results***: Eleven biomarkers were found to be significantly associated with the risk of invasive breast cancer, including mainly inflammatory-related biomarkers and endogenous hormones, while serum testosterone was also associated with the risk of in-situ breast cancer. Among them, C-reactive protein (CRP) was more likely to be associated with invasive breast cancer and its transition to death from breast cancer (HR for the highest quartile = 1.46, 95 % CI = 1.07–1.97), while testosterone and insulin-like growth factor-1 (IGF-1) were more likely to impact the early state of breast cancer development (Testosterone: HR for the highest quartile = 1.31, 95 % CI = 1.12–1.53; IGF-1: HR for the highest quartile = 1.17, 95 % CI = 1.00–1.38). ***Conclusion***: Serum CRP, testosterone, and IGF-1 have different impacts on the transitions of different breast cancer states, confirming the role of chronic inflammation and endogenous hormones in breast cancer progression. This study further highlights the need of closer surveillance for these biomarkers during the breast cancer development course.

CHARACTERISATION OF PLEOMORPHIC LOBULAR CARCINOMA: AN IMAGE ANALYSIS-ASSISTED STUDY

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***Problem statement*:** Invasive lobular carcinoma (ILC) of the breast has unique morphological, genetic, and clinical characteristics compared to invasive ductal carcinoma of no special type (IDC-NST). However, ILC has diverse variants with distinct morphological and behavioural characteristics. The pleomorphic variant of ILC (pILC) is associated with aggressive behaviour compared to the classic variant (cILC). However, histological diagnosis of pILC is challenging and can lead to significant differences in interpretation among pathologists. This study aims to improve the diagnostic features of pILC using image analysis techniques. ***Methods*:** Whole slide images of 90 cases of histologically reviewed and confirmed pILC were examined. Visual assessment was carried out to refine architectural, nuclear, and cytoplasmic features. The QuPath image analysis software was utilised for nuclear measurements, including nuclear size and variability, which were then compared to reference cells of normal ductal cells and small lymphocytes in a set of cases. Furthermore, a comparative analysis was performed between pILC, cILC, and IDC-NST. ***Results*:** The visual examination identified two different types of pILC: apocrine and non-apocrine. Apocrine pILC comprised 20% of cases and had round nuclei and pale vesicular chromatin patterns with prominent nucleoli. The non-apocrine variant showed significant variation in nuclear size and shape. Compared to cILC, pILC cells displayed a mean nuclear area of 1.6 to 2.0 times larger and were associated with higher levels of nuclear size and shape variability and more abundant cytoplasm. The mean area of pILC cells ranged from 2.8 to 4.9 times that of resting lymphocytes, 2 to 3.6 times that of normal ductal cells, and 0.9 to 1.6 times that of pleomorphism score-matched IDC-NST. ***Conclusion*:** The diagnosis of pILC relies on both nuclear size and size variability, which differs between both pILC subtypes. Considering the surrounding normal cells as reference cells improves the objectivity of assessment.

INTEGRATION OF MULTI-OMICS DATA FOR PERSONALIZED TREATMENT IN TRIPLE-NEGATIVE BREAST CANCER

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Problem statement: Precision medicine is envisaged to provide tailored therapy based on the characteristics of tumor cells. Triple-negative breast Cancer (TNBC) is further characterized by higher tumor heterogeneity and aggressiveness, apart from having no targeted treatments because there is an absence of estrogen, progesterone receptors, and Human epidermal growth factor receptor 2 (HER2) amplification. There remains a dearth of literature on how multi-omics data integration can be translated to identify the most effective personalized treatment for TNBC. ***Methods***: The present work studied a large cohort of TNBC patients using multi-omics analysis. Genomics next-generation sequencing (NGS), transcriptomics RNAseq, proteomics mass spectrometry, and metabolomics liquid chromatography-mass spectrometry (LC-MS). These datasets were incorporated using various bioinformatics tools to determine these molecular processes and targets for intervention. Advanced algorithms arising from machine learning (ML) helped create mathematical models to predict patients' responses towards specific therapies. ***Results***: When combining the data, new biomarkers and therapeutic targets that are not noticeable can be identified if only one-layer processing is done. Some observations revealed the presence of distinct mutational signatures and differentiation in pathway dysregulation involving TNBC subtypes that predicted distinct drug response profiles. In silico analyses of drug response were highly accurate in predicting patients' response to targeted treatments with in vitro and in vivo experiments. ***Conclusion***: Based on the present study, the combined approach of multi-omics analysis could significantly transform the understanding of TNBC toward the development of precision medicine. Hence, we help bridge the vast array of molecular data and clinical translational applications to offer a framework for developing better-targeted therapies. Future studies and trials on the multiplex of multi-omics approaches are necessary to establish their utility in the clinical setting for TNBC patients.

PREVENTION

SHOULD WE BE MARKING THE AXILLA WITH DELAYED SENTINEL NODE TRACERS IN RISK REDUCING MASTECTOMIES (RRM)?

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Problem statement: Patients who undergo RRM are at increased risk of breast cancer (BC) due to a genetic mutation or history of BC. It is not standard practice to perform SLN in RRM but post-operative histopathology may reveal unexpected invasive BC in this patient group despite normal preoperative imaging. The aim of this study was to assess the incidence of unexpected invasive disease in patients undergoing RRM. ***Methods***: A retrospective analysis of all female patients who underwent RRM at our institution over a 40-month period was performed. Patients undergoing unilateral RRM concurrently with contralateral therapeutic mastectomy for BC were also included. Analysis of pre-operative imaging, genetic status, post-operative histopathology and further axillary surgery were recorded. [ST1]. ***Results***: In total 85 risk reducing mastectomies were performed in 65 female patients. Of these, 39 patients had deleterious genetic mutations

and 26 patients had primary or previous BC without genetic mutation. A total of 9 patients (10.6%) were found to have unexpected pre or invasive cancer in their mastectomies. Of these patients, 4 had invasive disease (4.7%) and 5 (5.9%) had pre-invasive disease. ***Conclusion***: We found a 4.7% incidence of unexpected invasive breast cancer in RRMs. These patients may benefit from delayed sentinel node tracer techniques to improve accuracy at the time of their subsequent sentinel node biopsy and to avoid the additional morbidity associated with 4 node sampling.

PATIENT PARTICIPATION IN BRIEF LIFESTYLE INTERVENTION AND UNDERSTANDING OF MODIFIABLE RISKS FACTORS IN BREAST CANCER: AGREEABLE AND EFFECTIVE?

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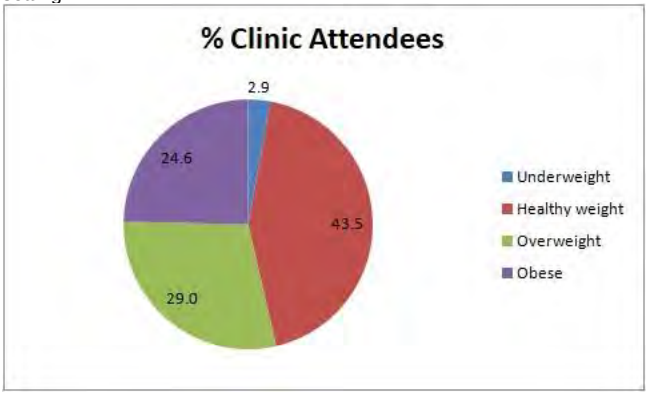
[2]*Edinburgh Breast Unit, NHS Lothian, Edinburgh, UK*

Problem statement: Breast cancer affects 2.3 million women a year and is the most common cancer worldwide(1). Modifiable risk factors including obesity, alcohol excess, hormone exposure and childbirthing/breastfeeding can play a role in the multifactorial development of the disease. Overweight/obesity is particularly associated with oestrogen receptor positive breast cancer in postmenopausal women(1). Worldwide, over 2.5billion adults are overweight and the WHO recognise it poses severe threat to public health(2). In addition, alcohol shows a dose-response relationship with breast cancer risk(3). General Medical Council (GMC) guidance states we 'must support patients in caring for themselves to empower them to improve and maintain their health...supporting patients to make lifestyle changes (4).' The Edinburgh Breast Unit New Patient Clinic was identified as a primary location to assess patient acceptance of BMI calculation and a brief lifestyle intervention in line with these guidelines. ***Methods:*** Between 8-12th January 2024, all clinic attendees (N=134) were asked to fill out a form describing their understanding of risk factors in breast cancer and whether they would consent to BMI calculation. 74 patients returned completed forms. BMIs were taken (n=73) a brief lifestyle intervention was performed, discussing risk factors associated with breast cancer. A follow up survey was sent two weeks later (n=72). ***Results***: 98.6% of initial survey respondents agreed to BMI calculation (average BMI 26.8 (18.4-49.4)). 56.6% of calculated BMIs were in the overweight or obese category. Initially, 52.1% patients named one or more risk factors for breast cancer. 32.9% named obesity/overweight. 6.8% named alcohol. Of those who returned the follow up survey (N=22) 100% named one risk factor for breast cancer and 82% named more than one risk factor. 77% stated they knew there was a link between BMI and breast cancer.
Conclusion: This brief intervention in line with GMC guidance found that a brief lifestyle intervention in an outpatient setting was accepted by the majority of patients and can lead to sustained understanding of lifestyle risk factors in breast cancer.
As patients were agreeable to the intervention, members of the unit have been encouraged to continue providing lifestyle advice in the outpatient setting.



A CASE REPORT OF MALE BREAST CANCER 29 YEARS AFTER TOTAL BODY IRRADIATION FOR ACUTE LYMPHOBLASTIC LEUKAEMIA

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Problem statement: Due to the differences in surveillance, education and understanding of breast cancer in men and women, reports of radiation-induced male breast cancers (MBC) tend to present at a later stage with more advanced disease. We present a 51-year-old male with breast cancer secondary to total body irradiation (TBI) for acute lymphoblastic leukaemia (ALL) 29 years prior. He presented to a triple assessment breast clinic with a palpable mass in his left breast which was later diagnosed as a grade 2 invasive ductal carcinoma (IDC). ***Methods***: We searched the literature to find cases reported of MBC following childhood TBI or chest wall radiation, particularly looking for those who had childhood ALL. We defined childhood radiation exposure as exposure to chest wall radiation at the age of 25 or under. ***Results***: To the best of our knowledge, there are only 20 case reports of MBC following childhood radiation exposure, including our case and four other cases with ALL. The average gap between radiation exposure and first presentation was 24.9 years with the shortest being 11 years and the longest 42 years. The average age at presentation was 37.5 years old. Our patient was the second oldest at presentation and had the fifth longest gap. Fifteen of the patients had IDCs and one had a high-grade ductal carcinoma in situ meaning they all presented with later-stage disease. All patients were oestrogen receptor positive and all except for one were progesterone receptor positive. Two patients were HER2 positive. Only two had a family history of breast cancer or solid tumour cancers. However, all 20 had undergone TBI or chest wall radiation as a child/young adult demonstrating a potential link between youth radiation exposure and MBC. ***Conclusion***: With advancements being made in oncology and radiotherapy currently, cases like this should be seen less in the future. In the meantime, male patients undergoing childhood radiotherapy should be counselled better on their future risk of MBC. Breast clinicians must report such cases to further broaden the database on secondary male breast cancers in order to aid further education and research.

SCREENING

USE OF A WIRELESS RADAR LOCALISATION DEVICE TO STREAMLINE PATIENT CARE

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Problem Statement: Localisation of breast lesions often requires multiple visits from the time of biopsy to surgery, which may be associated with increased costs for patients and providers. Following a successful pilot study, we evaluated the ability of SCOUT®, a wireless radar localisation device inserted at the time of biopsy, to streamline patient care and improve the patient pathway. ***Methods***: SCOUT is a radar-based localisation system that is used to detect, identify, and precisely localise breast lesions and axillary pathological lymph nodes. This pilot study included 20 patients with unilateral or bilateral impalpable R4/R5, U4/U5 breast lesions. Following a successful trial, the procedure was adopted into routine clinical practice. Patients were excluded if they had DCIS, dense breasts, or multifocality. Following patient consent, SCOUT reflectors were deployed at the time of biopsy with device position confirmed on post-biopsy mammogram (Figure 1). Patients were referred to surgery following multidisciplinary team discussion of results. Study measures included lesion characteristics. ***Results***: A total of 240 devices have been placed to date. All patients were successfully repatriated to surgery without the need for a subsequent localisation visit. No device migration was observed. No clinically significant SCOUT-related artefacts were detected in MRI images. The depth and range of tumours localised varied from 10-50mm. Most lesions were Grade 2 and Grade 1, consistent with screen

detected cancers; DCIS was reported in 60% of cases. Nodal involvement was present in less than 10% of all cases. ***Conclusion***: This pilot study highlights SCOUT's ability to save precious clinical time and provide clinicians with precise lesion localisation and important characteristics. The increased efficiency associated with SCOUT alleviated the need for subsequent localisation visits from screening to surgery and aligns with the device's intended use for placement at biopsy, serving dual function as a biopsy site marker and wire-free localisation. This single-step biopsy and localisation can help eliminate redundant procedures and increase cost savings for providers by reducing radiology time and costs for consumables (e.g., needles, markers), as well as healthcare costs incurred by patients.

THE IMPACT OF BREAST DENSITY NOTIFICATION ON ANXIETY IN SOUTH AUSTRALIAN WOMEN UNDERGOING BREAST CANCER SCREENING

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Problem statement: High mammographic breast density is an independent risk factor for breast cancer and also can make it harder to detect breast cancer on a mammogram. There is growing awareness of breast density, however the mental health impacts of being notified of high breast density have not been fully investigated. This project aimed to investigate the impact of notification of high breast density on anxiety using the State and Trait Anxiety Inventory (STAI) tool. ***Methods***: Women attending The Queen Elizabeth Hospital Breast/Endocrine outpatients department for mammographic breast cancer screening were consented to the study (n=100/120 invited; response rate 83%). The women had participated in a previous study assessing their general knowledge of breast density [1] and at that time had indicated they wanted to know their own breast density. Breast density was assessed using Volpara software and participants were notified of their breast density by letter. The STAI questionnaire to assess state and trait anxiety was administered. Results were analysed by Mann-Whitney U test. ***Results***: Of the 100 participants, 66% received a letter notifying them they had low density (Category A or B), and 34% had high density (Category C or D). Trait anxiety scores were not different between women with low (mean±SD; 35.19±12.51) and high (37.62±11.44) breast density (p=0.26). Similarly, state anxiety scores were not different between women with low (35.17±13.60) and high (36.65±13.03) breast density (p=0.51). Severe persistent anxiety, indicated by a trait anxiety score of 45 or above, was observed in 20% and 23% of women who received a letter notifying them of low and high breast density respectively, and was not significantly different between the two groups. ***Conclusion***: Breast density notification was not associated with elevated anxiety in this cohort, however many women had underlying severe anxiety. When notifying women of their breast density, the information should be provided in a manner that is considerate of the people being notified and their range of experiences and situations.

REDUCING AXILLARY SURGERY IN ELDERLY PATIENTS WITH SMALL BREAST CANCERS

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Problem statement: Sentinel lymph node biopsy (SLNB) plays a crucial role in staging early breast cancer, but its necessity in older patients with favourable tumour types is debated amid efforts to minimise surgery. This study aims to assess prevalence of positive SLNB in elderly patients with small breast cancers and guide criteria for omission of SLNB. ***Methods***: A cohort study was conducted at the Queen Elizabeth Hospital, King's Lynn for all patients diagnosed with breast cancer 2021 - 2022. Inclusion criteria were: females over the age of 70 with grade 1 or 2 invasive cancer, tumour size less than 20mm on preoperative imaging, oestrogen receptor (ER) positive and human epidermal growth factor receptor 2 (HER2) negative, and normal preoperative axillary ultrasound. In total 45 women fit the inclusion criteria. ***Results***: Among the 45 patients, 10 had positive SLNB. Median age for SLNB-positive patients was 81 (IQR 77.5-83) with median preoperative tumour size of 17.5mm (IQR 15.5-18.75). SLNB-negative patients (n=35) had median age 74 (IQR 70.5-78.5) and median preoperative tumour size 14mm (IQR 9-15.5). All SLNB-positive cases had non-specific tumour (NST) breast cancer. There was a statically significant difference found in patients with larger preoperative (p value = 0.0001) and surgical (p value = 0.02) tumour size and a positive SLNB result. Linear probability and logistic regression analyses indicated a linear relationship between tumour size and SLNB positivity, with a 3.4% increase in the likelihood of positive SLNB for every 1mm increase in preoperative tumour size (95% confidence interval: 1.4% to 5%). Only one SLNB-positive patient underwent initial axillary clearance due to clinical suspicion; there were no subsequent axillary clearance surgeries. ***Conclusion***: Tumour size, both preoperative and surgical, significantly correlated with SLNB positivity. This suggests that in elderly patients with biologically favourable breast cancers, tumour size should guide SLNB omission decisions. A cut off between 15-20mm would seem to be supported by our data: patients with a larger tumour size should not be spared SLNB. Pre-operative ultrasound accuracy for both tumour size and nodal status remains paramount.
The authors declare that they have no conflicts of interest related to this study.

LARGE VOLUME EXTENSIVE SAMPLING (LVES) AS FIRST LINE BIOPSY TECHNIQUE IN SELECTED GROUP OF CASES IN BREAST SCREENING PROGRAMME

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Problem statement: Complex sclerosing lesion(CSL) usually presents as parenchymal distortion(PD) on mammograms, is most often benign, but can be associated with malignancy(0-36%). NHS Breast Screening multidisciplinary working group guidelines recommend large volume extensive sampling(LVES) rather than surgical excisions in the management of breast lesions with indeterminate malignant potential (B3). PD diagnosed on tomosynthesis, with no corresponding ultrasound finding, is subgroup with low outcome of malignancy and likely due to CSL. At our unit, we have extended the use of LVES as first line biopsy technique in this subset of cases, with the aim to help obviate the need for additional biopsy. ***Methods***: It is retrospective observational study. Time frame July2019-July2023. Multidisciplinary(MDT) outcomes, Scottish Breast Screening IT system (SBSS) and clinical portal were used to audit LVES cases. ***Results***: There were 264 cases of LVES over 4years and in 41cases(15.5%) LVES was offered as first line sampling technique, at the discretion of the assessing radiologist. PD was the most common indication (38casess-93%) and this was confirmed as CSL on pathology in 23 cases (64%). 5cases of PD were due to benign fibrocystic changes, and this was appropriate management as per local protocols. There were 10cases with malignant biopsies. Of these, 3cases were graded suspicious (M5U5) and should have had conventional biopsy. Other 7cases were cancers presenting as distortions and potentially could have been diagnosed by standard biopsy techniques. There were 3cases with no PD but LVES was offered as first line. On review of cases, one was known papilloma and two cases were further areas of microcalcification in breast with B3 diagnosis (recommended by MDT). LVES was offered as second line biopsy in 223 cases. In this group 110 cases (49%) had PD and we could have negated the need for additional biopsy, if LVES was offered upfront. Bruising/haematoma were documented in 20/41 cases (49%) with significant haematoma reported in 8cases (20%). In 2cases this impacted patient management as resulted in delayed surgery. ***Conclusion***: LVES can be safely offered as first-line diagnostic sampling technique in defined subset of cases, when CSL is the working diagnosis, obviating the need for two procedures.

SYMPTOM MANAGEMENT

ANTIBIOTIC PROPHYLAXIS AGAINST SURGICAL SITE INFECTION FOR ELECTIVE BREAST SURGERY

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[2]*Department of Surgery - College of Medicine, Majmaah University, Riyadh - Ksa, Saudi Arabia*

Problem statement: To assess the effect of antibiotics administration on prevention of post breast surgery SSI.
The generally reported incidence of surgical site infection (SSI) following clean surgery is in the order of 1-5%. Although considered clean, the reported incidence of SSI in elective breast surgery is significantly higher. It varies according to type of breast operation performed, and the incidence can be as low as 1.4% in minor breast operations, reaching up to 36% for major breast procedures. ***Methods***: Medline; EMBASE; CINAHL; Cochrane central library; WHO search engine, Clinical Trials and references of the retrieved articles were searched from the period between 1990 to 2016, with no language restriction. Randomized controlled trials that have compared the effects of prophylactic antibiotic administration and timing on the surgery site infection post breast surgery. ***Results***: Ten studies were included in this review with (2853) Participants. Pooling of the results illustrated that antibiotic prophylaxis significantly reduced the risk of surgery site infection OR 0.64 95% CI. [0.49-0.84]. The subgrouping of minor versus major surgeries showed that the antibiotic prophylaxis for minor surgeries has no effect OR 0.69, 95%CI. [0.38-1.27], while it showed a statistically significant effect on major surgeries OR. 0.63 95%CI. [0.45-0.89]. The third comparison is between short versus extended antibiotic administration with no statistically significant effect OR. 0.94 95% CI. [0.43-2.07]. ***Conclusion***: It is advised to use the preoperative antibiotic prophylaxis in major elective breast surgery for both benign and malignant breast condition. Extended perioperative prophylaxis is not recommended.
OR: odds ratio.
CI: confidence interval.

GYNAECOMASTIA REFERRAL PATHWAY - TIME FOR A CHANGE

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Problem statement: Men with breast lumps are referred frequently to breast clinic. The most common "lump" is gynaecomastia. Rarely require any intervention but malignancy needs to be excluded. They are frequently referred to breast clinics, though most do not require surgery. This study aimed to assess the current referral pathway for gynaecomastia from primary to secondary care, following the guidelines of the Association of Breast Surgeons (ABS). ***Methods***: The study reviewed male patient referrals from primary care in Suffolk to the Ipswich Breast Centre over three years. Data collected included demographics, investigations, and confirmed cases of true gynaecomastia among the referred patients. ***Results***: Out of 54 men referred from Suffolk general practices to the breast unit, 76% were diagnosed with true gynaecomastia. However, complete pre-referral diagnostic workups were not conducted for all patients. Specifically, testosterone levels were tested in one-third of the patients, while oestradiol, lactate dehydrogenase (LDH), and serum human binding globulin (sHBG) were tested in only three patients. Prolactin, alpha-fetoprotein (aFP), and beta-human chorionic gonadotropin (βHCG) were tested in 22% of the patients. ***Conclusion***: To reduce referrals to secondary care, we plan to introduce a gynaecomastia infographic for Suffolk`s primary care. Primary and secondary care need to work together to improve compliance with referral guidelines. We will also be reviewing blood test results and correlate them with findings to assess the need for this "expensive" pre-assessment workup. We hypothesize that implementing this nationwide could lead to more appropriate referrals to specialists and better management of gynaecomastia. Further research is needed to validate this hypothesis.

USAGE OF BRACKETED MAGSEED (TWO OR MORE) FOR BREAST WIDE LOCAL EXCISION IN MULTIFOCAL OR MULTICENTRIC BREAST CANCER(MFBC/MCBC) COMBINED WITH PARTIAL BREAST RECONSTRUCTION USING PERFORATOR FLAPS

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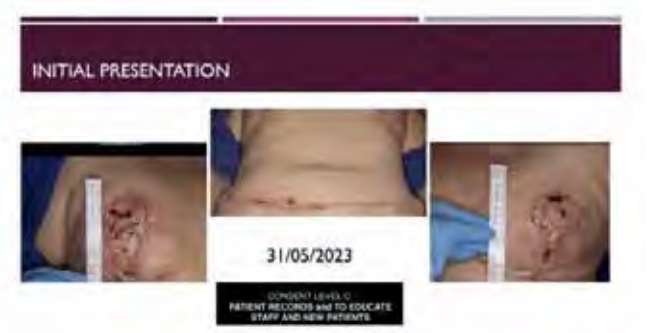
Problem statement: Breast Conservative Surgery has become a valid option for multifocal or multicentric breast cancer (MFBC/MCBC) with the emerging modalities of localisation of impalpable breast lesions. Different localisation Techniques e.g. Magseeds allow accurate resection. Thus, reduction of re-excision rates is achieved. Larger excision volumes are required in the context of MFBC/MCBC. Chest wall perforator flaps (CWPF) permitted partial breast reconstruction of such larger excisions with good aesthetic outcomes. ***Methods***: A single institute retrospective review was conducted for all patients with MFBC/MCBC who underwent partial breast reconstruction using CWPF after imaging guided localisation of the lesions using Bracketed Magseeds between November 2021 and November 2023. ***Results***: Bracketing of breast cancer using two or more magnetic seeds was performed in 14 patients. Perforator flaps has been used in the form of 6 LICAPS (Lateral Intercostal artery perforator), 2 MICAPS (Medial Intercostal artery perforator) and 6 AICAP (Anterior Intercostal artery perforator) flaps. En-bloc resection has been successfully performed in all patients. Re-excision of Margins has been performed in 2 patients and 1 patient went for completion Mastectomy and Immediate reconstruction. ***Conclusion***: Bracketed Magseeds localisation extends the percentage of patients who can be offered breast conservative surgery MFBC/MCBC with or DCIS (Ductal Carcinoma In Situ). Combining this technique with CWPF reconstruction allows to include patients with small to medium sized breasts which will not be applicable to perform other techniques of volume displacement like therapeutic mammoplasties to minimise aesthetic defects and asymmetry.

POSTOPERATIVE COMPLICATIONS FOLLOWING BREAST AUGMENTATION MASTOPEXY SURGERY ABROAD AND ITS IMPACT ON NATIONAL HEALTH SERVICE. (CASE REVIEW)

Akram Girgis[1], Annette Trengove[1], Angela Volleamere[1], Ricardo Pardo Garcia[1], Phil Walker[1], Panos Pikoulas[1]
Breast Surgery, Royal Bolton Hospital NHS Foundation Trust, Bolton, Greater Manchester, UK



Problem statement: The number of patients who seek aesthetic medical procedures abroad has been increasing and became to attention during the COVID era. The service and the postoperative care they received had been questioned, especially when postoperative complications occurred. ***Methods***: A female patient attended our service after she undertook bilateral breast reduction, abdominoplasty, and bilateral blepharoplasty outside of the NHS. She presented with severe surgical site infection, wound dehisence and tissue loss. ***Results***: The patient remained under the care of Royal Bolton Breast Service from 27/05/2023 to 16/10/2023. The resource required to treat this patient included a four night inpatient hospital stay, six consultant appointment and eighteen nurse-led clinic appointments. The cost of managing the post-operative complications from this surgery was £12,800. ***Conclusion***: Aesthetic surgical procedures of the breast carry a risk of post-operative complications. When they are performed outside of the NHS , and particularly outside of the U.K.; management of complications can be particularly challenging due to the absence of the responsible surgeon and details of the surgery. Managing these patients impact NHS resources and can have a negative effect on patients` physical and psychological well-being.

IDENTIFYING RESEARCH PRIORITIES FOR IMPROVING INFORMATION AND SUPPORT FOR PATIENTS UNDERGOING BREAST CANCER SURGERY: A UK PATIENT-CENTRED PRIORITY SETTING PARTNERSHIP

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Sonia Patton[5], Lesley Turner[5], Patricia Fairbrother[5], **Stuart McIntosh**[1], Shelley Potter[3,4]
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Problem statement: To use robust consensus methods with individuals with lived breast cancer experience to agree the top 10 research priorities to improve information and support for patients undergoing breast cancer surgery in the UK. ***Methods:*** Research uncertainties related to information and support for breast cancer surgery submitted by patients and carers were analysed thematically to generate summary questions for inclusion in an online Delphi survey. Individuals with lived breast cancer experience completed two Delphi rounds including feedback in which they selected their top 10 research priorities from the list provided. The most highly ranked priorities from the survey were discussed at an in-person prioritisation workshop at which the final top 10 was agreed. ***Results***: The 543 uncertainties submitted by 156 patients/carers were categorised into 63 summary questions for inclusion in the Delphi survey. Of the 237 individuals completing Round 1, 190 (80.2%) participated in Round 2. The top 25 survey questions were carried forward for discussion at the in-person prioritisation workshop at which 17 participants from across the UK agreed the final top 10 research priorities. Key themes included ensuring patients were fully informed about all treatment options and given balanced, tailored information to support informed decision-making and empower their recovery. Equity of access to treatments including contralateral mastectomy for symmetry was also considered a research priority. ***Conclusion***: This process has identified the top 10 research priorities to improve information and support for patients undergoing breast cancer surgery. Work is now needed to develop studies to address these important questions.

TRIPLE NEGATIVE BREAST CANCER

NAVIGATING SYNCHRONOUS BREAST AND COLON CANCER: MULTIDISCIPLINARY MANAGEMENT OF LOW ESTROGEN RECEPTOR-POSITIVE TUMOR - A CASE REPORT.

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Problem statement: Multiple primary malignancies are increasingly reported, but synchronous malignancies (within 6 months) remain rare. The link between breast and colon cancer is well-established, though management guidelines for synchronous cases are lacking. Breast cancers typically show strong ER-positive staining or none, complicating treatment for low ER expression (1-10%). We present a successfully treated case of simultaneous breast and colon cancer, highlighting these challenges. ***Methods***: A 76-year-old lady presented with a right breast lump. Mammogram showed BIRADS4, 2.6*1.7 cm mass in the right breast at 10 o'clock, with bilateral axillary lymph node enlargement, and bilateral microcalcifications. The biopsy revealed invasive ductal carcinoma, Nottingham grade II/III, ER-positive expression 5% of cells, progesterone receptor-negative, HER2/neu-negative. Abdominal CT showed focal thickening of the proximal sigmoid colon with multiple adjacent lymph nodes and fat stranding. A circumferential malignant-looking fungating mass lesion at the distal sigmoid was found on colonoscopy. The biopsy showed high-grade dysplastic glands with a desmoplastic reaction. Hence, the choice was made to address the colon cancer first, followed by the breast cancer. The patient`s case was discussed with both breast and GI surgeons before proceeding with colectomy. Our decision was taken based on the following points: (1) The time of recovery from colon surgery is expected to be short as the surgery offered was laparoscopic. (2) Our thinking at that time was that the patient may end up having stage III colorectal cancer requiring adjuvant chemotherapy and we thought we could use CMF (Cyclophosphamide/Methotrexate/Fluorouracil). We thought this would be an appropriate option post-colon surgery as well as neoadjuvant therapy for breast cancer. ***Results***: The patient underwent a laparoscopic sigmoidectomy, revealing moderately differentiated sigmoid adenocarcinoma (pT2N0). She then received 4 cycles of Doxorubicin and Cyclophosphamide, and 2 cycles of Docetaxel for breast cancer. A month later, she had a successful modified radical mastectomy with omental flap reconstruction, with no residual invasive carcinoma and negative lymph nodes. ***Conclusions***: Addressing colon cancer first while treating the ER-low breast cancer as triple negative underscores the complexities of managing synchronous cancers and highlights the need for individualized treatment strategies.

INFLAMMATORY BREAST CANCER- SINGLE CENTER EXPERIENCE IN BANGLADESH

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Problem statement: Inflammatory breast cancer (IBC) was first described in 1924 as a rare and aggressive form of invasive cancer accounting for 5% of all cases of breast cancer. However, we found the incidence of IBC to be more frequent than described in literature. IBC has a higher incidence among individuals with highly pigmented skin, e.g., those of African, South Asian, and Arabic descent. Patients may present with breast lump, redness and swelling. ***Methods***: Period of study was from January 2021 – January 2022. Total number of cases were 25. Retrospective data from the breast unit of a private hospital in Dhaka was collected from electronic patient records to describe the clinical characteristics and incidence of IBC. ***Results***: Out of 240 breast cancer patients seen over the span of one year, total number of cases of IBC were 25. Incidence of IBC was found to be 10.04%. Median age at presentation was 47 years. All the patients were married. 40% were menopausal. 80% of tumours were Infiltrating ductal carcinoma grade II and 16% were triple negative. 92% of patients presented with breast lump and 64% had clinically palpable lymph nodes. 16% patients had distant metastasis. ***Conclusion***: We have encountered a significant number of IBC patients in the span of one year. IBC is often misdiagnosed and treated as mastitis or dermatitis as clinicians are less familiar with it than with the more common types of breast cancers. Clinical suspicion and low threshold for core/skin biopsy is important in these cases. A national strategy is required to facilitate research into this aggressive disease.

Notes

CoBrCa

Industry

Upcoming events with Novartis
Save the date!

National Nurse Network Meeting

Thursday 19 September – Friday 20 September 2024

19 Sep, 16:00 – 20 Sep, 15:00

Hyatt Regency Birmingham

Breast cancer-focused event created specifically for oncology nurses including keynote speaker and dinner on the evening of the 19 September

Novartis Contact – Marisa Thomas, marisa.thomas@novartis.com

Unravelling the Evolving Landscape of Breast Cancer Treatment Challenges

Wednesday 20 November 2024

19:00 – 21:15

A 'Hub and Spoke' meeting with the London Hub broadcast out to multiple spokes across the UK

Interaction and Q&A between the spokes and the hub. ***Would you like a Spoke in your area?***

Novartis Contact – Jake O'Leary, jake-1.oleary@novartis.com

Non-Medical Prescribers (NMPs) and Aspiring NMPs Breast Cancer Study Day

Friday 29 November 2024

10:00 – 16:30

The Mercure Hotel, Manchester

Created specifically for non-medical prescribers and advanced clinical practitioners within the breast cancer field

Novartis Contact – Gaynor Goodier, gaynor.goodier@novartis.com
Loretta Sansum, loretta.sansum@novartis.com

NOVARTIS | Reimagining Medicine

UK | FA-11246799 | August 2024

Industry Symposia

Wednesday, September 11, 2024

12:00-13:00 **Industry Lunch Symposium**
Treatment approaches to high risk early breast cancer
Lilly sponsored symposium.
Lilly products will be discussed at this symposium. **Hall A**

Lunch boxes will be provided to session participants

Case study and panel discussion
Alistair Ring, *London, UK*
Mark Verrill, *Newcastle upon Tyne, UK*
Suzanne Frank, *Manchester, UK*

Thursday, September 12, 2024

07:30-08:30 **Breakfast Industry Symposium:**
What is the true utility of genomic testing in Early Breast Cancer?
A closer look at intrinsic subtyping and Prosigna
Supported by Veracyte **Hall A**

Light refreshments will be served prior to the session from 7:00

Chairperson: **Lesley Fallowfield,** *Sussex, UK*

07:30-07:50 The development of and clinical utility of PAM50 and intrinsic subtyping, and a comparison of the available technologies
Matthew J. Ellis, *Houston, TX, USA*

07:50-08:10 How will the OPTIMA trial answer many of the outstanding questions around the utility of genomic testing? What effect will the implementation of PREDICT 3 have on the use of GEP testing?
Stuart McIntosh, *Belfast, UK*

08:10-08:30 How well do healthcare professionals and patients understand the information provided by genomic test reports?
Lesley Fallowfield, *Sussex, UK*

07:30-08:30 **Breakfast Industry Symposium:**
Sharing clinical experience with eligible women with HR+/HER2- advanced breast cancer – interactive case studies and panel discussions **Hall B**
This promotional symposium has been organised and funded by Novartis Pharmaceuticals UK Ltd.
Novartis products will be discussed at this symposium and prescribing information will be available from a Novartis representative during the symposium

Light refreshments will be served prior to the session from 7:00

Chairperson: **Marina Parton,** *London, UK*

07:30-07:50 Case Study – an older adult with advanced breast cancer
Alistair Ring, *London, UK*

07:50-08:10 Case Study – an advanced breast cancer patient with cardiac co-morbidities
Olga Oikonomidou, *Edinburgh, Scotland, UK*

08:10-08:30 Case Study – an advanced breast cancer patient with visceral metastasis
Mark Verrill, *Newcastle upon Tyne, UK*

UK/ August 2024/ FA-11253796-1

12:30-13:30 **Pre-lunch Industry Symposium:**
Push the paradigm: Advances in treating HER2-expressing metastatic breast cancer **Hall A**

12:30-12:50 How I manage HER2-positive metastatic breast cancer
Javier Cortes, *Madrid, Spain*

12:50-13:10 Recent advances in HER2-expressing metastatic breast cancer treatments
Olga Oikonomidou, *Edinburgh, Scotland, UK*

13:10-13:30 Panel discussion and questions from the audience
Javier Cortes, *Madrid, Spain*
Olga Oikonomidou, *Edinburgh, Scotland, UK*

Sponsored by Daiichi Sankyo UK and AstraZeneca UK. This is a promotional symposium organised and funded by Daiichi Sankyo UK and AstraZeneca UK, at which Daiichi Sankyo and AstraZeneca products will be discussed within their UK Marketing Authorisations. UK/ADC/07/24/0032 | July 2024

12:30-13:30 **Pre-lunch Industry Symposium:**
Clinical utility of the 7-gene predictive DCIS test to accurately stratify risk and predict radiation benefit vs. clinicopathologic tools alone
Supported by PreludeDx **Hall B**

12:30-12:45 The development of DCISionRT for recurrence risk and prediction of RT benefit in DCIS patients, and discussion of other DCIS assays and ClinPath nomograms
Pat Whitworth, *Nashville, TN, USA*

12:45-13:00 Avoiding under- and over-treatment in DCIS. Clinical data and clinical utility
Frank A. Vicini, *Farmington Hills, MI, USA*

13:00-13:15 Utilization of DCISionRT and management of patients in Australia, and future opportunities and developments
Bruce Mann, *Melbourne, Australia*

13:15-13:30 Panel Discussion Q&A
Anita Skandarajah, *Melbourne, Australia*
Pat Whitworth, *Nashville, TN, USA*
Frank A. Vicini, *Farmington Hills, MI, USA*
Bruce Mann, *Melbourne, Australia*

Friday, September 13, 2024

07:30-08:30 **Breakfast Industry Symposium:**
The Great Axillary Debates: How do you surgically de-escalate?
Supported by Endomag **Hall B**

Light refreshments will be served prior to the session from 7:00

Moderator: **Bruce Mann,** *Melbourne, Australia*

07:30-08:00 To clip or not to clip?
For: **Michael Alvarado,** *San Francisco, CA, USA*
Against: **Andreas Karakatsanis,** *Uppsala, Sweden*

08:00-08:30 All physicians should be offering delayed SLNB for high risk DCIS patients
For: **Alastair Thompson,** *Houston, TX, USA*
Against: **Anushka Chaudhry,** *Swindon, UK*

List of Supporters

CoBrCa would like to thank the supporters. It is with the support of the industry that CoBrCa can continue in its mission to promote research and education and to disseminate new knowledge.

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Bronze

AGENDIA MAMMAPRINT + BLUEPRINT | EXACT SCIENCES | GILEAD Creating Possible

MENARINI group | Stemline A Menarini Group Company | Roche

List of Exhibitors

Main Exhibition Area

ABS Association of Breast Surgery

AGENDIA MAMMAPRINT BLUEPRINT

APIS Assay Technologies Ltd.

Daiichi-Sankyo

AstraZeneca

DILON TECHNOLOGIES

endomag

EXACT SCIENCES

GC Aesthetics

GILEAD Creating Possible

Lilly

MENARINI group

Stemline A Menarini Group Company

MERITMEDICAL

Motiva

NOVARTIS

PRELUDE DX

SIEMENS Healthineers

solventum

synapse MEDICAL part of unipharmedtech

veracyte

Poster Area

BREAST CANCER NOW The research & support charity

Exhibition Floorplan

1 - Novartis
2 - Siemens Healthineers
3 - Dilon Technologies
7 - Apis Assay Technologies Ltd
8 - ABS (Association of Breast Surgery)
9 - GC Aesthetics
10 - Novartis Medical
11 - Motiva
12 - Veracyte
13 - Endomag
14 - AstraZeneca
15 & 16 - Merit Medical
17 - AstraZeneca
18 - Menarini Stemline
19 - Agendia
20 - Solventum
21 - Exact Sciences
22 - Lilly
23 - PreludeDx
25 - Gilead
26 - Synpase Medical

Industry Profiles

www.associationofbreastsurgery.org.uk

The **Association of Breast Surgery** was established in 2010 and is the voice for breast surgery in the UK. ABS members include surgeons, trainees, nurses and allied health professionals working as part of the Breast MDT. The ABS runs an annual conference and a number of courses and events throughout the year. It offers regular research grants and travel bursaries. Its Clinical Practice & Standards committee produces guidance for the use of UK healthcare professionals.

www.agendia.com

Agendia is a leading provider of innovative solutions in precision oncology, specializing in early-stage breast cancer. They offer reliable biological insights for personalized treatment decisions, using advanced genomic assays like MammaPrint® and BluePrint®. These assays help clinicians quickly identify the most effective treatment plan, reducing the risks of over- and under-treatment.
Founded in 2003 in Amsterdam, Agendia is headquartered in Irvine, California, with a state-of-the-art laboratory. Led by world-renowned scientists and oncologists, Agendia is dedicated to advancing genomic insights through ongoing research. Notably, their FLEX Study is the world's largest Real-World Evidence-based Breast Cancer database, aiming to revolutionize precision in breast cancer management. With cutting-edge technology, research, and innovation, Agendia strives to shape the future of precision oncology and make a significant impact in the fight against breast cancer.
Disclaimer:

www.apisassay.com

APIS is leveraging systems biology and multi-OMICs biodata for validation and translation of biomarkers into clinical utility. Our breast oncology product portfolio is expanding: The APIS Breast Cancer Subtyping Kit is a reproducible RT-qPCR based IVD product (in certain territories) and RUO product for detecting standard (HER2, ER, PR, Ki67) and novel proliferative biomarkers. The APIS ESR1 Mutations Kit is a qPCR assay for the sensitive detection of eleven key mutations within the oestrogen receptor gene. Coming soon – the APIS PIK3CA Mutations Kit is a qPCR assay for detection of the 5 most prevalent mutations in the PIK3CA gene.

Daiichi Sankyo UK and **AstraZeneca** UK: Combining collective expertise to push the boundaries of what is possible in cancer care. Our collaboration is based on a shared commitment to support patients.
The CoBrCa Conference 2024 is supported by the pharmaceutical industry through sponsorship and the purchase of exhibition space. Sponsoring companies have no influence or involvement in the preparation of this event.
UK/ADC/07/24/0016 | July 2024

breastcancernow.org

We're Breast Cancer Now, the research and support charity. We're here for everyone with breast cancer.
Alongside funding life-saving research and provide information and support, we work closely with healthcare professionals to make sure everyone affected by breast cancer gets the best treatment and care, when they need it.
Why? Because our vision is that by 2050, everyone diagnosed with breast cancer will live and be supported to live well. But to make that vision a reality, we need to act now.

www.dilon.com

Dilon Technologies® Inc., is a commercial stage women's healthcare company which develops, manufactures, and sells innovative medical devices for detecting and assessing cancerous tumors, hemostasis, as well as portable video laryngoscopes while expanding its footprint across hospitals to broaden its offering into Biosurgery. Based in Newport News, Virginia, Dilon strives to improve the quality of care by providing a wide range of innovative medical device technology that benefits patients around the world. Dilon's portfolio includes HEMOBLAST® Bellows, the only combination powdered surgical hemostat that contains collagen, thrombin and chondroitin sulfate, MarginProbe®, a groundbreaking technology for accurate margin assessment in breast cancer surgery, the Navigator™ 2.0 and 3.0 gamma probe Systems, for radio-guided lymphatic mapping and tumor localization that is sterilizable and autoclavable, TrueView™ Pro 100, a specimen radiography system (SRS) that uses advanced radiography and automated software to precisely identify tumor lesions in resected or biopsied breast tissue, and the CoPilot®, an innovative, portable, and easy to use video laryngoscope.

www.endomag.com

At **Endomag**, we believe everyone deserves a better standard of cancer care – that's why we design our unique magnetic technologies with both the clinician and patient in mind. Many leading hospitals across the world use our solutions to help breast cancer patients avoid surgery when it isn't needed, and experience better outcomes when it is.
Our Magseed® marker is a tiny, non-radioactive seed, ideal for accurately marking tumours and lymph nodes, while the Magtrace® lymphatic tracer is the world's first, long-lasting, non-radioactive dual tracer for lymphatic mapping. Paired with the Sentimag® localisation platform, they have now been widely proven across over 100 clinical studies, featuring more than 20,000 patients.
The Sentimag® platform has already helped 450,000+ women worldwide to access more precise and less invasive breast cancer treatment. Are you ready to join the magnetic revolution?

www.exactsciences.com/uk

A leading provider of cancer screening and diagnostic tests, **Exact Sciences** gives patients and health care professionals the clarity needed to take life-changing action earlier. Building on the success of the Oncotype DX Breast Recurrence Score® test and the Cologuard® stool DNA-based colorectal cancer screening test[1], Exact Sciences is investing in its pipeline to develop innovative solutions for use before, during, and after a cancer diagnosis. We serve patients in more than 90 countries and our Oncotype DX® test is the most commonly used genomic assay in the NHS for adjuvant chemotherapy treatment decision-making.
To learn more, please visit our product website www.oncotypeiq.com/en-gb.
You can reach our Customer Support Team at europeansupport@exactsciences.com | 020 3031 8087.

[1] *Not available in the UK*

www.gcaesthetics.com

GC AESTHETICS®
The **QUALITY** you Expect
The **OPTIONS** you Need
The **PEACE OF MIND** you Demand
GC Aesthetics® is an established global medical device company focused on Aesthetic, Revision and Reconstruction procedures. With more than 40 years of experience, surgeons and patients in more than 70 countries with systems in place to ensure the safety of our products through pre-clinical testing, clinical studies and excellent global post-market surveillance use GCA®.
GCA® is A Confident Choice for Life™ supported by a 10-year prospective and multi-centric clinical study and an average of 17 years of extended long-term high patient satisfaction data. We provide the most comprehensive implant portfolio in the industry with breast, face, body implants and skin expanders to give surgeons quality surgical options.
Much more than a European manufacturer of high-quality implants, we are proud to support our surgeons and patients by integrating and developing solutions that are designed to support the best outcome for women´s breast enhancement journey.
A Confident Choice for Life™

www.gilead.com

Gilead Sciences, Inc. is a biopharmaceutical company that has pursued and achieved breakthroughs in medicine for more than three decades, with the goal of creating a healthier world for all people. The company is committed to advancing innovative medicines to prevent and treat life-threatening diseases, including HIV, viral hepatitis and cancer. Gilead operates in more than 35 countries worldwide, with headquarters in Foster City, California.

www.lilly.com/uk

Lilly is a medicine company turning science into therapies to make life better for people around the world. We've been pioneering life-changing discoveries for nearly 150 years, and today our medicines help more than 51 million people across the globe. Harnessing the power of biotechnology, chemistry and genetic medicine, our scientists are advancing new discoveries to address some of the world's most significant health challenges: redefining diabetes and obesity care; advancing the fight against Alzheimer's disease; providing options for debilitating immune system disorders; and transforming the management of difficult-to-treat cancers. With each step toward a healthier world, we're motivated by one thing: making life better for millions more people. That includes delivering innovative clinical trials that reflect the diversity of our world and working to ensure our medicines are accessible and affordable.

www.menarinistemline.co.uk/

At **Menarini Stemline**, we are committed to developing a broad pipeline of innovative, transformative therapies in Oncology & Haematology and making a difference in cancer patients' lives. We invest in developing precision medicine through our pipeline of investigational drugs and partner with cancer experts and research institutions globally. Stemline is part of the Menarini Group, a leading international pharmaceutical and diagnostics company.

www.merit.com/merit-oncology

Founded in 1987, **Merit Medical Systems**, Inc. is a leading manufacturer and marketer of proprietary disposable medical devices used in interventional, diagnostic and therapeutic procedures, particularly in cardiology, radiology, oncology, critical care and endoscopy. Our Merit Oncology is the new standard of care in wireless localization. We help healthcare providers achieve better patient outcomes through clinical and cost effective care and drive progress through innovation, knowledge sharing and the latest scientific research. The SCOUT® Radar Localization system has been clinically demonstrated to drive value and improve patient outcomes. SCOUT is proven to improve radiology workflow and significantly reduce OR delays. This can mean more successful surgeries, optimized breast conservation strategies, and enhanced outcomes for women.

www.establishmentlabs.com

Establishment Labs® Holdings Inc. (NASDAQ: ESTA) is a global medical technology company focused on improving patient safety and aesthetic outcomes, initially in the breast aesthetics and reconstruction market by designing, developing, manufacturing and marketing an innovative portfolio of silicone gel-filled breast implants, branded as Motiva Implants®, the centerpiece of the MotivaImagine® platform.
Motiva Implants® are produced at two FDA compliant state-of-the-art facilities in Costa Rica and currently sold in over 80 countries through exclusive distributors or the Company's direct salesforce. In March 2018, Establishment Labs® received approval for an investigational device exemption (IDE) from the FDA to initiate the Motiva Implants® clinical trial in the United State. After more than a decade on the market, from 2010 to 2023, and 3 million implants sold, Motiva Implants® have consistently reported rates of less than 1 % device-related complications leading to reoperation.

www.novartis.com/uk-en

At **Novartis UK**, our purpose is to reimagine medicine to improve and extend people's lives.
We use innovative science and technology to address some of society's most challenging healthcare issues and we work together with the system to implement solutions that drive access for UK patients.
From research to delivery, we are a valued partner in the healthcare ecosystem, supporting in times of crisis and beyond, to build solutions that provide better care and access opportunities for every patient in the UK.

www.preludedx.com

PreludeDx is the leading personalized breast cancer diagnostics company dedicated to improving outcomes for patients diagnosed with DCIS (Ductal Carcinoma in Situ). The company provides patients and physicians with evidence-based tools to improve patient outcomes and reduce the cost to the healthcare system by helping to ensure women are not over or under treated. For women diagnosed with DCIS, PreludeDx provides a patented molecular test (DCISionRT®) that predicts a woman's personal likelihood or risk of developing DCIS recurrence in 10 years and invasive breast cancer in 10 years with or without adjuvant radiation therapy after breast conserving surgery.

www.roche.co.uk

At **Roche UK**, we focus our energy and investment in developing tests and treatments that change lives and give us more quality time with the people we love. And, together with others, we're solving healthcare's greatest challenges; helping to achieve better results by connecting early diagnosis to targeted treatment and ongoing support.
Healthcare matters to all of us. That's why we work hard to ensure that all our new medicines are made available to those who need them through the NHS - wherever they live, whatever their circumstances.
In 2020, more than 820 million Roche diagnostic tests were used to confirm, rule out or manage health conditions and over 712,000 patients benefited from our medicines and diabetes monitoring and insulin delivery system. During this period, we contributed £1.26 billion to the UK economy, supporting over 21,000 jobs.
Proud of what we do, we're here because we care. In the UK we employ over 2,000 brilliant specialists who work together to transform the lives of patients and their loved ones.

That's what makes us who we are. That's what makes us Roche UK.

www.siemens-healthineers.co.uk

At **Siemens Healthineers**, we pioneer breakthroughs in healthcare. For everyone. Everywhere. Sustainably. As a leader in medical technology, we want to advance a world in which breakthroughs in healthcare create new possibilities with a minimal impact on our planet. By consistently bringing innovations to the market, we enable healthcare professionals to innovate personalised care, achieve operational excellence and transform the system of care.

www.solventum.com/en-gb/home/medical

At **Solventum**, we enable better, smarter, safer healthcare to improve lives. We're a new company with a long legacy of creating breakthrough solutions for our customers' toughest challenges. Rooted in a history of diverse expertise with over 70+ years of expertise, we are a leader in the advanced wound care market (based on data from BCC Research report) and estimate that our products treat more than 1.6 million hard-to-heal wounds annually.
Our solutions are designed to accelerate healing, prevent complications and lower the total cost of care. With industry-leading products, education and support, Solventum helps you improve patient outcomes — and lead the way in healthcare.

www.synapsemedical.ie

Synapse Medical UK has solidified its position as the premier provider of Diagnostic Imaging services in both Ireland and the UK. With a widespread presence across these regions, our company boasts a team of dedicated employees, including a proficient group of Clinical Sales Specialists. Our commitment is steadfast when it comes to ensuring that our customers not only meet but exceed their expectations in terms of service. Synapse Medical UK are delighted to invite you to stand No: 24 to witness first hand, our new innovative diagnostic imaging products.

www.veracyte.com and follow the company on Twitter (@veracyte)

Veracyte is a global diagnostics company whose vision is to transform cancer care for patients all over the world. We empower clinicians with the high-value insights they need to guide and assure patients at pivotal moments in the race to diagnose and treat cancer. Our high-performing tests enable clinicians to make more confident diagnostic, prognostic, and treatment decisions for some of the most challenging diseases such as thyroid, prostate, breast, bladder and lung cancers, as well as interstitial lung diseases. We help patients avoid unnecessary procedures and speed time to diagnosis and appropriate treatment. In addition to making our tests available in the U.S. through our central laboratories, our exclusive license to a best-in-class diagnostics instrument (the nCounter Analysis System) positions us to deliver our tests to patients worldwide through laboratories that can perform them locally. Veracyte is based in South San Francisco, California.

CoBrCa

PUSH THE PARADIGM: Advances in treating **HER2-Expressing Metastatic Breast Cancer**

Thursday 12th September 2024 | **12:30-13:30** | **Hall A**

Join **Dr Javier Cortes** and **Dr Olga Oikonomidou** as they explore the management of HER2-expressing metastatic breast cancer, including recent treatment advances, management of brain metastases and discussion of real patient case studies

SPEAKERS

Dr Javier Cortes,
Consultant Medical Oncologist, Spain

Dr Olga Oikonomidou,
Consultant Medical Oncologist, UK

AGENDA

Time	Topic	Speakers
12:30-12:50	How I manage HER2-positive metastatic breast cancer	**Dr Javier Cortes,** Spain
12:50-13:10	Recent advances in HER2-expressing metastatic breast cancer treatments	**Dr Olga Oikonomidou,** UK
13:10-13:30	Panel discussion and questions from the audience	**Dr Javier Cortes** and **Dr Olga Oikonomidou**

Sponsored by Daiichi Sankyo UK and AstraZeneca UK. This is a promotional symposium organised and funded by Daiichi Sankyo UK and AstraZeneca UK, at which Daiichi Sankyo and AstraZeneca products will be discussed within their UK Marketing Authorisations.

UK/ADC/07/24/0038 | August 2024

Daiichi-Sankyo | AstraZeneca

SAVE THE DATE

We are pleased to announce that in 2026, the World Congress on Controversies in Breast Cancer (CoBrCa) will again be held jointly with the Australasian Society for Breast Disease (ASBD) and Breast Surgeons of Australia and New Zealand (BreastSurgANZ) as AIBC.

2nd Australasian International Breast Congress (AIBC)

Australasian Society for Breast Disease

World Congress on Controversies in Breast Cancer (CoBrCa)

BREAST SURGEONS of Australia & New Zealand

Brisbane, Australia, October 8-10, 2026

9th World Congress on Controversies in Breast Cancer (CoBrCa)
Date and place to be announced shortly. Stay tuned.

Follow us on:

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