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Goals: To determine the breast cancer distant recurrence in patients who had the Oncotype DX® assay and the correlation with adjuvant chemo-endocrine prescribing patterns in light of the Oncotype DX® recurrence score.

Methods: Retrospective single institution Australian (Sydney Adventist Hospital) case series of 71 patients who had Oncotype DX® assay testing following definitive surgery between 2012–2016. Histopathological data included tumour type, size, Ki67%, ER/PR/HER2 receptor characteristics and axillary lymph node metastasis. Patients were divided into Oncotype DX® low risk (RS < 11), intermediate risk (RS 11–25) and high risk (RS > 25). The type and duration of adjuvant treatment was recorded and patients were followed up after surgery for distant recurrence.

Results: Mean age at diagnosis was 56 years (range: 33–77 years). Invasive ductal carcinoma accounted for the majority (84%), with most tumours between 10–20 mm in size (47%), and of grade 2 (67%). 46% of the cohort were node positive. Low RS group accounted for 14% of the cohort, intermediate RS group 63% and high RS group 23%. In the high risk group all but one patient (94%) received chemotherapy. In the intermediate RS group 96% received endocrine therapy only, with only one patient receiving chemo-endocrine therapy (2%) and another declining chemo-endocrine therapy (2%). In the low RS group 100% received endocrine therapy and no adjuvant chemotherapy. The high risk RS group had the smallest mean tumour size (mean, standard deviation; 16.15 +/− 8.99 mm), greatest representation of grade 3 tumours (69%), lowest mean ER/PR% (ER%, P < 0.05 between high RS (72%) vs intermediate (85%) and low RS groups (89%); PR% P < 0.05 between high RS (35.1%) vs cohort (62.2%), intermediate (62.3%) and low RS groups (91%), greatest mean mitotic rate (P < 0.05 between high RS (15.81) vs cohort (9.26), intermediate (6.88) and low RS (6.5) groups) and greatest proportion of Ki67% > 14 (P < 0.05 between high RS (88%) vs cohort (71%), intermediate (66%) and low RS (66%) groups). The mean follow-up since initial surgery was 53.5 months (95% CI: 49.58–57.4 months). Four patients in total developed distant metastasis (5.6%), three from the intermediate risk RS group (6.7%) and one from the low risk RS group (1%).

Conclusion(s): This is the first Australian study reporting the experience of using the Oncotype DX® assay for breast cancer, highlighting that chemotherapy was rarely given in patients with low-intermediate RS, and always offered in high RS. This pattern of prescribing was associated with low rates of distant metastasis. National funding models need to be considered for molecular profiling assays such as Oncotype DX® which currently remain unfunded in Australia.

Conflict of Interest: No significant relationships.

Surgery/Sentinels/DCIS

PI24

Axillary reverse mapping in the prevention of lymphoedema: a systematic review of randomized trials

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Goals: This is a systematic review of randomized controlled trials (RCT) comparing the use of axillary reverse mapping (ARM) with conventional technique for axillary dissection (AD) in breast cancer surgery. The primary objective is to compare the post-operative lymphoedema rate in the respective study and control groups. Secondary objectives focus on the oncological safety of axillary reverse mapping quantified by intra-operative identification of ARM nodal metastasis and detection of axillary recurrence in the subsequent follow up period.

Methods: This review is written in line with the PRISMA protocol. Articles were retrieved from PubMed, EMBASE, CINAHL and Cochrane databases, using keywords “axillary reverse mapping” and “axillary lymph node dissection.” Non-RCT were excluded. Abstracts were screened independently by two reviewers. Data from eligible studies were retrieved for qualitative synthesis and pooled analysis.

Results: 73 publications were identified for initial screening. 68 articles were excluded from analysis according to the pre-defined systematic review protocol. 5 RCTs with 1696 subjects were included for analysis. 802 patients received ARM, 894 patients received AD. Pooled ARM node detection rate was 84.9% (Range 79.2–94.9%). There was a lower rate of post-operative lymphoedema in ARM group patients across all 5 RCTs. The pooled lymphoedema incidence in the ARM group was 4.8% (37/766) when compared to 18.8% (164/873) in the AD group (p < 0.0001).

Conclusion: Knowing the factors affecting sentinel lymph node metastasis can provide clues for the type of intervention, reconstruction and RT planning of patients to be operated directly or after neoadjuvant chemotherapy.

Conflict of Interest: No significant relationships.

PI23

Factors affecting sentinel lymph node metastasis in patients with breast cancer undergoing sentinel lymph node biopsy before or after systemic therapy

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Goals: The status of axillary lymph node (ALN) along with clinical and histopathological factors is considered an important prognostic factor in invasive breast cancer. The tendency to spread to SLN may differ depending on the biological, clinical and histopathological features of tumors. If we know the factors that affect SLNM, we may not need to perform SLNB in some groups. The aim of the study was to investigate the factors affecting SLNM in patients who underwent surgery and SLNB before (surgery group) or after (neoadjuvant group) systemic therapy in the light of current biological characteristics of tumors and patients.

Methods: The study included patients who were operated for breast cancer and underwent SLNB in the general surgery clinic of our institute between January 2017 and August 2019.

Results: The study included a total of 1,050 patients, 900 patients in the surgery group and 150 patients in the NAC group. In surgery group, multivariate analyses showed that grade III, LVI, Her2 (+) and TN increases the risk of metastasis. In neoadjuvant therapy group, multivariate analyses showed Pre-NAC clinical findings of LN metastasis and luminal A subtypes as effective factors.

Factors affecting SLNM in univariate and multivariate analyzes in surgery patients

|          | Univariate analyzes OR (95%CI) | P value | Multivariate analyzes OR (95%CI) | P value |
|----------|--------------------------------|---------|---------------------------------|---------|
| Age      |                                 |         |                                 |         |
| <40      | Reference                       | 1       |                                 | 1       |
| ≥40      |                                | 0.71    | 0.05                            | 0.89    | 0.09 |
| Grade    |                                 |         |                                 |         |
| I        | Reference                       | 1       |                                 | 1       |
| II       |                                | 2.13    | 0.02                            | 1.61    | 0.06 |
| III      |                                | 3.46    | 0.01                            | 3.15    | 0.01 |
| LVI      |                                 |         |                                 |         |
| No       | Reference                       | 1       |                                 | 1       |
| Yes      |                                | 7.23    | <0.001                          | 7.09    | <0.001 |
| Tumor size|                                 |         |                                 |         |
| ≤2 cm    | Reference                       | 1       |                                 | 1       |
| >2 cm    |                                | 2.17    | 0.02                            | 1.45    | 0.07 |
| Biological subtype |                 |         |                                 |         |
| Luminal A | Reference                       | 1       |                                 | 1       |
| Luminal B |                                | 1.15    | 0.08                            | 1.14    | 0.08 |
| TN       |                                | 4.41    | <0.001                          | 4.21    | <0.001 |

Conclusion: Knowing the factors affecting sentinel lymph node metastasis can provide clues for the type of intervention, reconstruction and RT planning of patients to be operated directly or after neoadjuvant chemotherapy.

Conflict of Interest: No significant relationships.
Pooled incidence of ARM lymph node metastasis was 5.7% (Range 0–8.5%). Axillary recurrence rate with median follow up of 37 months was 1.03% (8/778) in the ARM group, which was identical to 1.03% (9/870) in the AD group (p = 1).

**Conclusion(s):** ARM resulted in decreased incidence of lymphedema.

ARM node metastasis was identified in 5.7% of patients, however, there is no significant increase in axillary recurrence at 37 months post-operation.

**Conflict of Interest:** No significant relationships.

**P125**
Clinical significance of discordances in sentinel lymph node reactivity between radioisotope and indocyanine green fluorescence in cN0 breast cancer patients

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**Goals:** Both radioisotopes (RI) and indocyanine green fluorescence (ICG) are the standard tracer of detecting sentinel lymph node (SN) in SN biopsy (SNB). However, there is some discordances in the reactivity of SN between the two methods. In this study, we aimed to retrospectively evaluate the usefulness of combined method of RI and ICG and unveil the clinical significance of discordances in SN reactivity between RI and ICG in cN0 breast cancer patients.

**Methods:** Subjects comprised of consecutive 338 cN0 primary breast cancer patients who underwent SNB using RI and ICG concurrently, and who underwent axillary lymph node dissection (ALND). We defined SN that reacts to RI as SN( RI), SN that reacts to ICG as SN( ICG), and SN that reacts both RI and ICG as SN( RI+ICG). We estimated metastatic SN detection rate and concordance/discordance rate of each method. We also evaluated the correlation of discordances in SN reactivity with the post-operative N staging.

**Results:** Out of 338 patients, 331 patients (97.9%) had SN( RI) and 334 patients (98.8%) had SN( ICG). Combined method of SN( RI+ ICG) had a higher metastatic SN detection rate than others (SN( RI+ ICG): 99.7%, SN( RI): 91.7%, SN( ICG): 96.4%; p < 0.001). The discordance rate between SN( RI) and SN( ICG) of detecting metastatic SN was 38 cases (11.2%), and 11 cases were positive in SN( RI) only and 27 cases were positive in SN( ICG) only. Out of these, SN( RI) was not confirmed in 8 patients. In multivariate analysis, absence of SN( RI), ct2 stage (ct2–3), higher histological grade and histological special type were identified as risk factors of PN2–3.

**Conclusion(s):** Discordances in SN reactivity between RI and ICG attributes to the prevention of overcoming SN metastasis. Although absence of SN( RI) is rare, it is one of the significant signs of advanced axillary LN metastases and ALND should be considered for accurate nodal staging in such cases.

**Conflict of Interest:** No significant relationships.

**P126**
The effect of primary surgery in patients with stage IV breast cancer with bone metastasis only (protocol BOMET MF14-01); a multi-center, registry study

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**Goals:** More evidence shows that primary surgery for de novo metastatic breast cancer (BC) prolongs overall survival (OS) in selected cases. The aim of this study was to evaluate the role of locoregional treatment (LRT) in BC patients with de novo stage IV bone only metastasis (BOM).

**Methods:** The prospective, multicenter registry study BOMET MF14-01 was initiated in May 2014. Patients with de novo stage IV BC with BOM were divided mainly into two groups; those receiving systemic treatment (ST group) and those receiving LRT (LRT group). Patients who received LRT were further divided into two groups: ST after LRT (LRT+ST group) and ST before LRT (ST+LRT group).

**Results:** We included 505 patients in this study; 240 (47.5%) patients in the ST group and 265 (52.5%) in the LRT group. Median follow-up period was 34 months. Eight-five (32%) patients in the LRT group had received ST prior to primary breast surgery and 181 (68%) patients underwent breast surgery followed by ST. There were no differences between the three groups in terms of median follow-up time, tumor type and biological subtypes, hormone therapy, and intervention to metastatic site. However, the solitary bone metastasis rate was higher in the LRT group than in the ST only group (52% vs. 32%, respectively, p < 0.0001). One hundred and thirty-three patients (26.3%) died in the 34-month median follow-up; 85 (35.4%) in the ST group and 28 (10.5%) in LRT group. Local progression was observed in 39 (16.2%) of the patients in the ST group and 18 (6.7%) in the LRT group (p = 0.001). Hazard of death was 60% lower in the LRT group compared to the ST group [HR: 0.40 (95%CI, 0.30-0.54, p < 0.0001)].

**Conclusion(s):** In this prospectively maintained registry study, we found that LRT prolonged survival and decreased locoregional recurrence in the median three-year follow-up. Timing of primary breast surgery either at diagnosis or after ST had similar survival benefit compared to ST alone in de novo stage IV BOM BC patients.

**Conflict of Interest:** No significant relationships.