Results: Fifteen patients with advanced HER2-positive ILC were identified, median age 59 years, 67% ER-positive, 80% grade 2, 27% pleomorphic. Nine patients had been previously treated for early HER2-positive ILC, of whom 6/9 received adjuvant trastuzumab. Patients received a median of two lines of treatment for advanced disease (range 1–7), including trastuzumab (86.70%), TDM1 (40%), pertuzumab (20%) and lapatinib anti-HER2 TKIs (tyrosine kinase inhibitors) (33.3%). Median overall survival was 51.3 months (95%CI 8.8–not reached); similar to that reported with dual HER2 targeting in the CLEOPATRA trial. Thirty-four patients with early HER2-positive ILC were identified, median tumour size 24 mm, median two involved nodes (range 0–16), 76% ER-positive, 68% grade 2, 21% pleomorphic. Seven of 34 patients (20.6%) received NAC, with trastuzumab in 5/7 (71.4%). Among 5/7 NAC patients who underwent surgery, pCR was noted in 3/5 (60%). Five patients received primary endocrine therapy, with trastuzumab in 1/5 (20%). Twenty-one patients received adjuvant chemotherapy, with trastuzumab in 18 (85.7%). Nine of 34 patients relapsed (26.5%) after a median disease-free interval of 111.3 months (95%CI 111.2–not reached), with locoregional (4/9; 44.4%), bone-only (2/9; 22.2%), bone and visceral disease (2/9; 22.2%) or brain-only disease (1/9; 11.1%). The 5-year overall survival rate for the early disease cohort was 78% (95%CI 59–89%).

Conclusion: In this single-institution study, we report outcomes for patients with HER2-positive ILC comparable with those expected for HER2-positive IDC, despite incomplete exposure to all anti-HER2 therapies.

Reference

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Clinical Outcomes in Triple-negative Lobular Breast Cancer: a Single-institution Experience

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Purpose: Invasive lobular carcinomas (ILC) are characterised by loss of the cell adhesion molecule, E-cadherin, most commonly due to somatic CDH1 mutations. These are typically oestrogen receptor (ER)-positive/HER2-negative luminal tumours, which have a similar prognosis to that expected for luminal invasive ductal carcinomas (IDC). However, approximately 15% of ILC will be ER-negative; either at the time of breast cancer diagnosis or at metastatic relapse due to loss of ER expression. Previous studies have suggested that patients with triple-negative ILC have a superior prognosis to matched controls with triple-negative IDC, despite different clinical features, including higher rates of leptomeningeal disease, ovarian and peritoneal metastases [1].

Methods: Retrospective collection of clinical data from all patients with triple-negative ILC diagnosed between 2004 and 2014 at the Royal Marsden Hospital. Primary end point; median overall survival in patients with metastatic triple-negative ILC, secondary end points include median disease-free interval (DFI) after treatment of early disease, rate of response to neoadjuvant chemotherapy (NAC) and patterns of disease relapse.

Results: Twenty-three patients with advanced triple-negative ILC were identified, median age 48 years, all female. Eleven patients had been previously treated for early triple-negative ILC; 76 for early (54/76) or advanced (2/76) ER-positive ILC. Nineteen of 23 patients received a median of two lines of palliative chemotherapy (range 0–6) and the median OS was 18.32 months (95% CI 13.0–32.8). Sixteen patients with early triple-negative ILC were identified, median tumour size 3 cm, 43.8% grade 3, 62.5% axillary node-positive (median two nodes, range 0–35). Three received NAC (no pathological complete response but imaging responses in 2/3) and nine received adjuvant chemotherapy. Eleven of 16 patients relapsed (68.8%), most commonly with locoregional (3/11; 27.3%), bone-only (2/11; 18.2%) or brain-only disease (2/11; 18.2%). Median DFI was 28.5 months (95%CI 15–78.8) and the 5-year overall survival rate for the cohort was 52% (95%CI 23–74%).

Conclusion: In our institution we report a high rate of relapse after treatment for early triple-negative ILC, but the median overall survival from metastatic disease is similar to that expected from triple-negative IDC.

Reference

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The GOLD (Geriatric Oncology Liaison Development) Service and its Impact on Oncology Outcomes in Breast Cancer Patients: a Retrospective Analysis

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Purpose: Outcomes for older patients with cancer are poorer than their younger counterparts. The GOLD service is a recent development in oncology. Patients older than 65 years, with comorbidities, polypharmacy or poor performance status regardless of tumour type are referred to the GOLD clinic for optimisation before starting or during systemic treatment and/or radiotherapy. The aim of this retrospective analysis is to review the impact of the GOLD assessment on breast cancer patients.

Methods: We reviewed all patients who were referred to the GOLD clinic between March 2016 and May 2018. We analysed tumour type, age, type of treatment, reason for referral and outcome. The primary end point was whether patients were able to start or continue planned treatment.

Results: In total, 456 patients were seen in the GOLD clinic. The most common tumour types were gastrointestinal (137; 30%) and lung (53; 12%). Only 19 (4%) had breast cancer: median age 77 years. At the time of referral, 11 (58%) had or were due chemotherapy [five (26%) adjuvant, three (10%) neoadjuvant, three (10%) palliative], five endocrine therapy [two (10%) adjuvant, three palliative (15%)] and one adjuvant radiotherapy (5%). Reasons for referral: comorbidities 47%, functional decline 31%, optimisation (15%) and recent admission (10%). Seventeen (89.4%) patients were able to start or continue their treatment following a GOLD review. The four most common actions were (1) change in medication: 11 (57%); (2) general practitioner instructions: nine (47%); (3) AHP referral: four (21%) and (4) oncology instructions: three (15%). All but one patient completed their planned treatment.

Conclusion: A small number of breast cancer patients were referred to the GOLD service compared with other tumour types. Most patients were able to start/continue the proposed treatment with optimisation. A retrospective review of patients who were not referred will help further define which patients will benefit from this service.

Current UK Practice of Management of Pregnancy-associated Breast Cancer

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Purpose: With the trend towards delayed child-bearing, the incidence of pregnancy-associated breast cancer (PABCs) is rising and remains an important clinical problem. The aim of this national retrospective study was to describe the current practice of PABCs and any variation in the provision of care and adherence to treatment.

Methods: All oncological units in the UK are eligible for inclusion and encouraged to participate. Trainees from eight units entered through the Breast Cancer Research Collaborative initiative. A trainee lead with a supervising consultant with a special interest in breast cancer was identified to coordinate the study. Trainees registered the study locally at each institution. A questionnaire was developed by members of the collaborative steering group including trainees across surgical, clinical oncology, medical oncology and gynaecological specialties. Each centre collected information on current PABCs practice (including baseline characteristics, surgical, medical

oncology, clinical oncology and obstetric management) over the last 5-year period.

Results: Three units have completed data collection ($n = 10$ PABCs diagnosed during pregnancy). The mean gestational age at diagnosis was 20.9 weeks. Most (60%) underwent surgical resection (40% mastectomies, 10% BCS) during pregnancy. Eighty per cent of the patients received anthracycline-based chemotherapy during pregnancy; of those 30% received chemotherapy in the neoadjuvant setting. Seventy per cent of patients also received taxanes. Toxicities seen were similar to those in non-pregnant patients. All chemotherapy was administered after the second trimester. All ER-positive cancer patients were given adjuvant tamoxifen. None of the patients breastfed postpartum. For early stage PABCs, 25% of patients received adjuvant radiotherapy during pregnancy, with the remainder receiving radiotherapy after delivery.

Conclusion: Our preliminary data confirm the multidisciplinary nature of our Breast Cancer Trainees Research Collaborative Group. We continue to work with our collaborative group to complete data collection. The authors would like to encourage other institutions across the UK to join the workforce.

Managing Osteonecrosis of the Jaw Related to Denosumab in Patients with Breast Cancer

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Purpose: Bone metastases in breast cancer are associated with a median reduction in survival of 2 years and significant morbidity and impairment of quality of life. Denosumab is used for the prevention of skeletal-related events such as pathological fractures and spinal cord compression. Adverse events include osteonecrosis of the jaw (ONJ). We reviewed adverse events associated with denosumab use at a single centre.

Methods: Breast cancer patients treated with denosumab between January 2016 and December 2017 were identified retrospectively using an electronic chemotherapy prescribing system (Chemocare). Patient records were reviewed for adverse events and patient morbidity associated with denosumab.

Results: In total, 112 patients were treated with denosumab. Of these, 12 patients (10.7%) experienced adverse events that resulted in stopping treatment. Toxicities included deteriorating dental health or poor wound healing following dental surgery, diarrhoea, poor renal function and hyper/hypocalcaemia. Specifically, four patients (3.6%) stopped treatment due to symptoms associated with ONJ. They were all referred to maxillofacial services and restorative dentistry as required.

Conclusion: Medication-related osteonecrosis of the jaw (MRONJ) is associated with significant morbidity. The real-life incidence of MRONJ is probably underestimated. Currently, no national guidelines are available specifically for managing MRONJ in cancer patients. We have developed local guidelines that aim to develop a multidisciplinary approach with key areas to optimise management of patients, e.g. primary care, oral and maxillofacial services, speech and language therapy, pain specialists, dieticians and psychoncology support. We aim to audit our practice before and after the implementation of guidelines.

A Retrospective Audit on Outcomes Following Implementation of Neoadjuvant Treatment of HER2-positive Breast Cancer with Combined Pertuzumab and Trastuzumab with Docetaxel

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Purpose: A phase II trial, NeoSphere (2012), reviewed the effect of pertuzuamb in combination with trastuzumab for the treatment of early HER2-positive breast cancer with docetaxel in the neoadjuvant setting. Data identified, although not statistically significant, a greater 5 year progression-free interval with this combination. Patients had significantly better complete pathological response rates (cPR), probably associated with longer progression-free survival (45.8%) [1,2]. To audit local data on patients receiving neoadjuvant pertuzumab, trastuzumab and docetaxel and review cPR and tolerability of the regimen.

Methods: Data of patients with HER2-positive breast cancer treated with neoadjuvant anti-HER2-based chemotherapy between 2016 and 2017 were retrieved. Data reviewed included demographics, histological subtype, treatment given, tolerability and outcome from treatment including a pathological response.

Results: In total, 42 patients received treatment during this period. 22/42 (52%) patients had cPR to treatment, with 6/42 of these patients having cancer *in situ* (CIS) remaining. Nineteen patients obtained a partial response and one patient had no response to treatment. 29/42 completed the total of eight cycles of chemotherapy, with 19/42 requiring dose reductions and 7/42 developing a grade 3 toxicity, although poorly documented. 2/42 had chemotherapy stopped following disease progression.

Conclusion: Our results correlate with NeoSphere data with similar response rates, with both including CIS remaining as part of cPR outcome. Some patients with multifocal breast cancers with varying HER2 positivity had a partial response to treatment. These results could alter the data, as it was difficult to identify HER2 status on remaining disease. Therefore, a complete response to treatment with only HER2-negative disease remaining would be categorised as a partial response. We can confidently say this regimen is generally well tolerated, but documentation of toxicity needs improving. We await the outcome of ongoing trials focusing on disease-free survival as the primary outcome in this subset of patients.

References

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Outcomes of Neoadjuvant Chemotherapy in Breast Cancer Subtypes Guide Rationalising its Use in High-risk Patients by Tumour Genomic Profile

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Purpose: Neoadjuvant chemotherapy downstages breast cancer, permitting less extensive surgery and facilitates early initiation of systemic therapy in high-risk patients. Approximate overall response rates are 69% [1] and pathological complete response (pCR) rates are 24% [2]. We compared outcomes of patients from two North London hospitals with the published data and assessed the risk of progression during therapy.

Methods: We retrospectively reviewed all the patients from two hospitals who received neoadjuvant chemotherapy for breast cancer from October 2016 to 2017.

Results: We identified 58 female patients aged 25–87 years (mean 52 years). Thirty-eight per cent were T3–4 by magnetic resonance imaging (MRI), 75% were node-positive by ultrasound or sentinel node biopsy (SNB) and 39% were grade 3. Multiple regimens including EC-T, FEC-T/T-FEC, FEC-TH, FEC-TPH and wTaxol-H were used, with EC-T being the most common. Fifty-four per cent underwent mastectomy; 54% underwent axillary node clearance (ANC). The overall pCR rate was 33.3%, but was 36% in 'triple-negative' patients, 12% in oestrogen receptor-positive (ER+)/human epidermal growth factor receptor 2 negative (HER2−) patients and 66% in ER−/HER2+ patients. Sixty-four per cent had a >20% reduction in tumour size; 61% had an axillary pCR. Eight patients had possible disease progression, seven of whom were ER+ or grade 1–2. In two there was radiological progression during treatment and both recurred with metastatic disease within 6 months.

Conclusion: In our cohort of patients, pCR rates were comparable with the published data and progression was rare. ER+/HER2− patients had the lowest pCR rate and were at highest risk of disease progression during chemotherapy, whereas 'triple-negative' and HER2+ patients had the