Comparison of chemotherapy efficacy in metastatic lobular vs. ductal breast cancer (LOBEC)

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Background

Invasive lobular carcinoma (ILC) are thought to be less chemo-sensitive than invasive ductal carcinomas (IDC), as reflected by lower rates of pathological complete response following neoadjuvant therapy. In the metastatic setting, evidence regarding chemotherapy (Cx) efficacy is limited but provides an opportunity for chemotherapy efficacy between the two histological types to be assessed.

Objectives & Methods

**PRIMARY ENDPOINT:**
Efficacy of chemotherapy in metastatic ILC (mILC) compared with metastatic IDC (mIDC) as measured by time to next treatment (TTNTc) months (m) between start dates of first & second chemotherapy regime in all patients (pts) who had at least two lines of chemotherapy.

**SECONDARY ENDPOINTS:**
- Efficacy of endocrine therapy (as measured by TTNTe in pts who received first line endocrine therapy and in those that developed endocrine resistance (EnR) as defined by ESMO consensus guidelines), time on chemotherapy for each line of therapy (up to 6th line), time from diagnosis metastatic breast cancer to death of last follow-up (TTNTc).

**METHODS:**
- A retrospective review of prospectively collected data for consecutive pts with metastatic ILC (mILC) treated at a single institution between 2000 and 2023 was included. Pts with mILC were matched on a 1:2 ratio with a cohort of pts with metastatic IDC (mIDC) stratified by age (age <60, 60-69 and >69), era of diagnosis (2001 and >2011) and initial metastatic burden (<3 metastatic sites and >3 metastatic sites). Categorisation of histological subtype was derived from pathology report from definitive breast cancer tumour specimen. Tumours were defined as ILC based on microscopic morphology, E-cadherin negativity and without mixed ductal carcinoma cells being present. IDC tumours were E-cadherin positive without a mixed component of lobular invasive carcinoma.

**INCLUSION and EXCLUSION CRITERIA:**
- Key criteria included written pt consent, initial unilateral invasive breast carcinoma meeting definitions for ILC or IDC. Patients with initial discordant bilateral breast cancer (i.e. IDC in one breast and ILC in the other breast) were only included in the ILC cohort if a metastatic biopsy was performed that confirmed the metastatic lesion was ILC. HER2 amplified tumours, any breast and ILC in the other breast) were only included in the ILC cohort if a metastatic biopsy was performed that confirmed the metastatic lesion was ILC. HER2 amplified tumours, any.

**RESULTS:**

- **Table 1. Patient and tumour characteristics**

**Table 2. TTNTc and OS**

**Figure 1 TTNT based on type of 1st line therapy (months)**

**Figure 2 TTNT based on 1st line chemotherapy used (months)**

**Figure 3. Time to next chemotherapy regimen**

**Figure 4. Duration on each line of chemotherapy**

**Conclusion**

- Pts with mILC have a longer time interval to commencing chemotherapy, but efficacy of chemotherapy is similar in pts with mILC, irrespective of lobular histologic subtype, type of first line chemotherapy regimen used, and sites of metastatic disease, except for those with visceral disease. There was no significance in duration of time on treatment for up to 6 lines of chemotherapy between the 2 groups. There was no significant difference in OS between mILC and mIDC pts treated in this single centre study.

- Efficacy of endocrine treatment when given as first line treatment was similar in both groups without significant difference when pts were evaluated by presence or absence of endocrine resistance, except for primary EnR, but pt numbers were small in this group.

- Our results demonstrate equivalent chemotheraphy efficacy in pts with mILC as compared to mIDC and chemotherapy should be considered at any time during the course of metastatic disease for optimal pt outcome.

**REFERENCES**