Long-term outcomes and prognostic factors in metaplastic breast cancer treated with curative intent: a 22-year multicenter retrospective cohort study

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Introduction

- Metaplastic breast cancer (MpBC) is a rare, aggressive breast cancer subtype with limited treatment guidance.
- We evaluated long-term outcomes and treatment efficacy in non-metastatic MpBC patients across 4 major cancer centers in Hong Kong.
- We aim to identify **real-world patterns** and **potential therapeutic insights** that drive better survival outcomes.

Methods

- Women with non-metastatic MpBC diagnosed between January 2001 and December 2023 at four Hong Kong hospitals were included.
- Survival analyses were conducted using the Kaplan-Meier method, with survival differences compared using the log-rank test.
- Factors associated with survival were evaluated by univariate and multivariate Cox regression analyses.

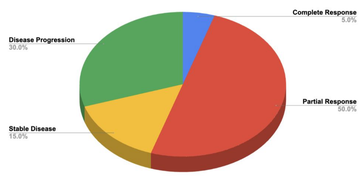
Survival outcomes

- 145 patients were eligible, with a median age at diagnosis of 57 years (IQR 51–68).
- Median tumor size: **3.5 cm** (IQR 2.4–6.0 cm).
- Median follow-up: **112 months** (IQR 28–165).
- **5-year** survival rates:
  - Overall survival: 67%.
  - Locoregional relapse-free survival: **90.4%**.
  - Distant relapse-free survival: 72.1%.
- Locoregional recurrence: 11%.
- Distant metastases: 27.6% (**visceral metastasis 90%**).

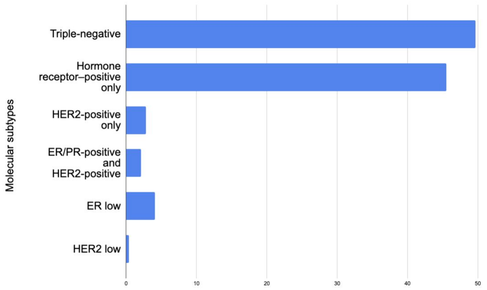
Adjuvant, but not neoadjuvant, **chemotherapy** improves **survival** in MpBC, with the greatest benefit in patients with **T3/4 or N+** disease.

Conclusion

- MpBC is a **distinct** breast cancer subtype with unique clinicopathological features.
- Adjuvant chemotherapy was associated with improved overall survival in non-metastatic MpBC
- Adjuvant radiotherapy **did not** demonstrate a significant benefit.
- The **low response to neoadjuvant chemotherapy** underscores the need for **novel** therapeutic strategies.



Response to neoadjuvant chemotherapy



Role of neo/adjuvant treatments

- **Adjuvant Chemotherapy** (n=83, 57.2%)
  - Improved overall survival (univariate and multivariate analysis): HR 0.42 (95% CI 0.22–0.82, p=0.01).
  - In T3/4 or node-positive subgroup: HR 0.32 (95% CI 0.12–0.83, p=0.02).
- **Adjuvant Radiotherapy** (n=88, 60.7%)
  - No significant association with overall survival: HR 0.69 (95% CI 0.38–1.24, p=0.21).
  - In T3/4 or node-positive subgroup:
    - Overall survival: HR 0.65 (95% CI 0.29–1.45, p=0.29).
    - Locoregional recurrence-free survival: HR 0.98 (95% CI 0.40–2.40, p=0.96).
- **Neoadjuvant Chemotherapy** (n=20, 13.8%)
  - No significant differences in pCR rates across molecular subtypes (p=0.67).
- **Adjuvant Endocrine Therapy** (n=40, 27.6%)
  - No association with overall survival in hormone receptor–positive cases (p=0.88).
- **Targeted Therapy** (n=6, 4.1%)
  - No association with overall survival in HER2-positive cases (p=0.47).

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