

<https://doi.org/10.29289/259453942025V36S11095>

1095 – Impact of neoadjuvant systemic therapy on axillary surgical decision-making in node-positive invasive breast cancer: evidence from a tertiary public hospital in the federal district, Brazil

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Introduction: Axillary surgical de-escalation after neoadjuvant systemic therapy (NST) has emerged as a central strategy in the management of breast cancer with initial lymph node involvement; however, its safe implementation depends on accurate tumor biological stratification.

Objective: To evaluate clinical, histopathological, and molecular determinants of axillary response and their impact on surgical decision-making.

Methods: This observational, retrospective, and analytical study included 170 patients with invasive breast cancer and clinically positive axilla who underwent NST between 2022 and 2024 in a tertiary public hospital.

Results: Sentinel lymph node biopsy (SLNB) was performed in 73 patients, with an identification rate of 90.1%, while 97 underwent axillary lymph node dissection (ALND). Luminal tumors were associated with SLNB, whereas high histological grade, aggressive molecular subtypes, and more advanced clinical stage were associated with ALND. Axillary pathologic complete response was observed in 38.1% of patients undergoing ALND. In multivariate analysis, histological grade 3 was an independent predictor of pathologic complete response (prevalence ratio [PR] 1.67; 95% confidence interval [CI] 1.01–2.77; $p=0.045$) and of undergoing ALND (PR 1.34; 95%CI 1.04–1.73; $p=0.021$), while aggressive molecular subtypes were also independently associated with ALND (PR 1.42; 95%CI 1.09–1.85; $p=0.009$). Clinicopathological discordance in post-NST axillary assessment was observed in 23.7% of cases, highlighting the limitations of conventional clinical methods and the potential for surgical overtreatment. The occurrence of metastases was higher in the ALND group (13.3% vs. 4.2%), reflecting a more aggressive biological profile.

Conclusion: Tumor biology represents the main driver of axillary management after NST, supporting safe surgical de-escalation in selected patients. The incorporation of more accurate axillary assessment strategies is essential to avoid unnecessary interventions and optimize the balance between oncologic safety and surgical morbidity.

Ethics: Research Ethics Committee Approval (CAAE 90556025.6.0000.5553).

Keywords: breast neoplasms; neoadjuvant therapy; sentinel lymph node biopsy; axillary lymph node dissection; treatment outcome.