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953 – Adherence to sentinel lymph node biopsy guidelines in breast cancer: temporal trends in a real-world public reference center cohort

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Introduction: Sentinel lymph node biopsy (SLNB) is the standard approach for axillary staging in clinically node-negative breast cancer and has progressively expanded after neoadjuvant chemotherapy (NAC). However, adherence to evidence-based axillary de-escalation remains variable, particularly in public healthcare settings. Objectives: To evaluate adherence to guideline-based indications for SLNB in women with non-metastatic invasive breast cancer treated in a public referral center and to identify factors associated with non-adherent axillary management.

Methods: A retrospective cross-sectional study was conducted including women with non-metastatic invasive breast cancer treated at a public reference center in São Paulo, Brazil, from 2015 to 2025. The primary endpoint was agreement between the guideline-based theoretical SLNB indication and the procedure actually performed. Secondary endpoints included adherence by clinical setting, factors associated with non-adherence, and temporal trends.

Results: A total of 1,672 patients were analyzed. Overall, 1,298 (77.6%) were managed according to guideline-based SLNB criteria, whereas 374 (22.4%) underwent discordant management. Adherence was higher in upfront surgery than after NAC (80.8% vs. 67.8%; $p < 0.001$). In the upfront setting, agreement between theoretical indication and actual practice was moderate ($\kappa = 0.578$; $p < 0.001$), whereas in the post-NAC setting it was negligible ($\kappa = 0.028$; $p = 0.300$). In upfront surgery, older age, lobular histology (odds ratio [OR] 6.6; 95% confidence interval [CI] 2.7–16.2), and positive SLNB (OR 6.0; 95%CI 3.7–9.9) were independently associated with incorrect management. After NAC, the Luminal/human epidermal growth factor receptor 2 (HER2)-positive subtype (OR 2.50; 95%CI 1.10–5.66), T3–T4 tumors (OR 3.40; 95%CI 1.45–7.98), subsequent axillary surgery (OR 6.44; 95%CI 2.91–14.26), and SLNB omission were associated with non-adherence. Adherence increased over time, with a mean annual rise of 1.84 percentage points ($R^2 = 99.1\%$; $p < 0.001$).

Conclusion: Evidence-based axillary de-escalation was well incorporated into upfront surgery but remained less consistent after NAC, supporting institutional protocols, surgical education, and improved technical resources in public practice.

Ethics: The study was approved by Plataforma Brazil (CAAE 83327324.0.0000.5463).

Keywords: breast neoplasms; sentinel lymph node biopsy; neoadjuvant therapy; guideline adherence; time factors.