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976 – Breast-conserving surgery after neoadjuvant chemotherapy: which patients are eligible?

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Introduction: Surgical management of breast cancer has progressively shifted toward de-escalation strategies aimed at minimizing morbidity while preserving oncologic safety. Neoadjuvant chemotherapy (NAC) plays a key role by allowing *in vivo* assessment of tumor response, reducing tumor size, and increasing the likelihood of breast-conserving surgery (BCS), particularly in triple-negative and human epidermal growth factor receptor 2 (HER2)-positive subtypes.

Objective: To identify clinical, pathological, and radiological factors associated with the feasibility of BCS following NAC.

Methods: This retrospective study included 1,618 women with non-metastatic invasive breast cancer treated with NAC followed by surgery between 2007 and 2023. Data were collected using the REDCap[®] platform. Statistical analyses included the chi-square or Fisher's exact test for categorical variables and the Student's *t*-test or Mann-Whitney U test for continuous variables, with $p < 0.05$ considered significant.

Results: Median age was 45 years. Invasive ductal carcinoma was the predominant histology (84.3%). Luminal B was the most frequent molecular subtype (38.5%), followed by triple-negative (28.0%) and HER2+/hormone receptor-positive (19.3%). Most tumors were grade 3 (75.8%). Clinical staging was predominantly T2 (42.2%) and N1 (44.7%), consistent with the magnetic resonance imaging findings. Pathologic complete response (pCR) was observed in 38.6% of cases. BCS was more frequent in patients with T2 tumors, lower nodal burden, chemosensitive subtypes (especially triple-negative), and those achieving pCR. Mastectomy was more common in T3–T4 tumors, N2–N3 disease, and luminal subtypes with lower chemosensitivity ($p < 0.001$).

Conclusion: The feasibility of BCS after NAC is strongly associated with tumor size, nodal status, molecular subtype, and pathologic response. NAC significantly increases the potential for breast preservation, particularly in biologically chemosensitive tumors, thereby reinforcing the importance of individualized, multidisciplinary surgical planning.

Ethics: Research Ethics Committee Approval (CAAE 92435525.8.0000.5432).

Keywords: breast neoplasms; mastectomies; segmental; neoadjuvant therapies.