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COMPARATIVE EFFECTIVENESS OF BREAST CONSERVING SURGERY VERSUS MASTECTOMY ON SURVIVAL IN BREAST CANCER PATIENTS THAT RECEIVED NEOADJUVANT CHEMOTHERAPY AND POST-OPERATIVE RADIATION THERAPY

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Objectives: The aim of this study was to determine whether there were differences in survival outcomes of matched breast cancer patients undergoing breast-conserving surgery (BCS) versus mastectomy that received neoadjuvant chemotherapy (NAC). **Methodology:** A retrospective cohort of patients with stage I-III breast cancer treated between 2008 and 2014 at two institutions who had received NAC followed by surgery and post-operative radiation therapy was identified. Kaplan-Meier and multivariate Cox proportional hazards models were used to examine disease-free survival (DFS) and overall survival (OS) rates by surgery type. **Results:** Of 652 patients, 162 (24.9%) underwent BCS and 490 (75.1%) underwent mastectomy /adenomastectomy. Most of the patients (n=589, 91.1%) had locally advanced disease (clinical stage IIB to IIIC) with a mean age of 50 years. In regards of surgery type, patients with stage III disease underwent more mastectomy than BCS (n=383, 79.0% mastectomy versus n=81, 50.3% BCS; $p<0.001$). The DFS and OS rates for all patients at 3 years were 81.5 and 67.5% ($p=0.001$); 88.9 and 83.9% ($p=0.174$) for BCS and mastectomy groups, respectively. Despite these differences, in the multivariate analyzed adjusted by clinical stage and pathologic complete response, there were no statistical differences in DFS (mastectomy versus BCS HR 1.44; 95%CI 0.95–2.17) and OS (mastectomy versus BCS HR 1.03; 95%CI 0.60–1.75) concerning the surgery type. **Conclusion:** In breast cancer patients who underwent NAC and post-operative radiation therapy, BCS and mastectomy are effective with similar survival outcomes regardless of surgery type.