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Breast conservation therapy or mastectomy and breast reconstruction in the treatment of locally advanced and/or multifocal/multicentric breast cancer? Systematic review and meta-analysis

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Objective: The purpose of this systematic review and meta-analysis was to measure if breast conservation therapy (BCT) was feasible for female patients with multifocal (MF), multicentric (MC), and/or ≥ 5 cm breast cancer (BC) and compare the results of treatment with those patients who underwent mastectomy (MT). **Methodology:** This systematic review and meta-analysis were recorded at Prospero CRD42022362765 and conducted based on the Prisma checklist. PubMed, Web of Science, and Virtual Health Library databases were searched in April 2023. **Results:** A total of eight retrospective cohort studies were included for evaluation, comprising a total of 2,151 women, of which 838 underwent BCT and 1,313 underwent MT. The meta-analysis revealed that in the treatment of MF/MC and/or ≥ 5 cm BC, based on the random-effects model, there was no significant difference in local relapse (LR) (OR=0.67, 95%CI 0.02–1.37, $p=0.61$, $I^2=7.5\%$), regional recurrence (RR) (OR= -0.23, 95%CI -1.97 to 1.51, $p=0.79$, $I^2=0$), metastasis (OR= -0.08, 95%CI -0.76 to 0.60, $p=0.813$, $I^2=0$), and mortality (OR= -0.02, 95%CI -1.89 to 1.85, $p=0.98$, $I^2=42\%$) between the BCT and MT groups. The cumulative incidence of LR was 3.2% (27/838) for BCT and 1.1% (14/1313) for MT. The incidence of RR was 1% in both the BCT and MT groups. The incidence of metastasis was 6.6% in the BCT (21/316) group and 7.8% (18/229) in the MT group, and the mortality was 4.1% (9/222) in the BCT group, with a mean follow-up of 65.1 months and 2.5% (3/119) in the MT group with a mean follow-up of 51 months. **Conclusion:** Our results demonstrated that BCT does not result in inferior local control or worse survival outcomes for patients with MF/MC and/or ≥ 5 cm BC and that BCT can be offered when feasible clinically for these patients.

Keywords: breast neoplasms; mastectomy; mastectomy; segmental; systematic review; meta-analysis.