Breast surgery for metastatic breast cancer an update of Cochrane systematic review

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Objetives:

To assess the effects of breast surgery on women with de novo metastatic breast cancer.

Methodology:

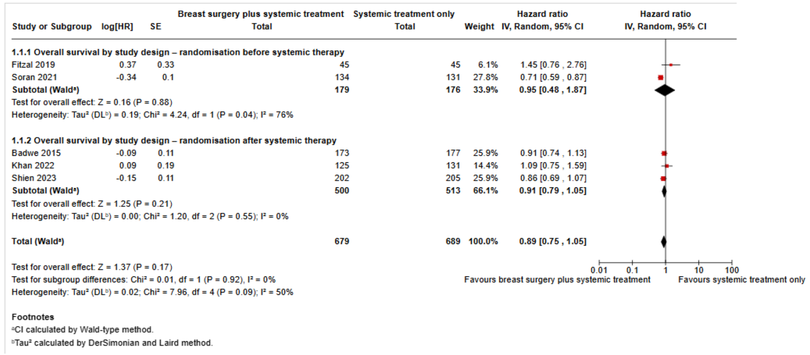
The inclusion criteria were randomized controlled trials of women with de novo metastatic breast cancer that compared breast surgery plus systemic therapy versus systemic therapy alone in these databases: the Cochrane Breast Cancer Specialised Register, CENTRAL, MEDLINE (by PubMed), and Embase (by OvidSP) on 19 April 2023. The primary outcomes were overall survival (OS) and quality of life. Secondary outcomes were progression-free survival (local and distant control) and toxicity from local therapyTwo review authors independently conducted trial selection, data extraction, and 'Risk of bias' assessment (using Cochrane's 'Risk of bias' tool), which was checked by a third review author. We used the GRADE tool to assess the quality of the body of evidence, the risk ratio (RR) to measure the effect of treatment for dichotomous outcomes, and the hazard ratio (HR) for time-to-event outcomes. We also calculated the 95% confidence intervals (CI) for these measures. We used the random-effects model, as we expected clinical or methodological heterogeneity, or both, among the included studies. We reported continuous outcomes, including quality of life, as mean differences (MD) with 95% CIs. We planned to use standardised mean differences (SMD) if outcomes were reported on different scales.

Results:

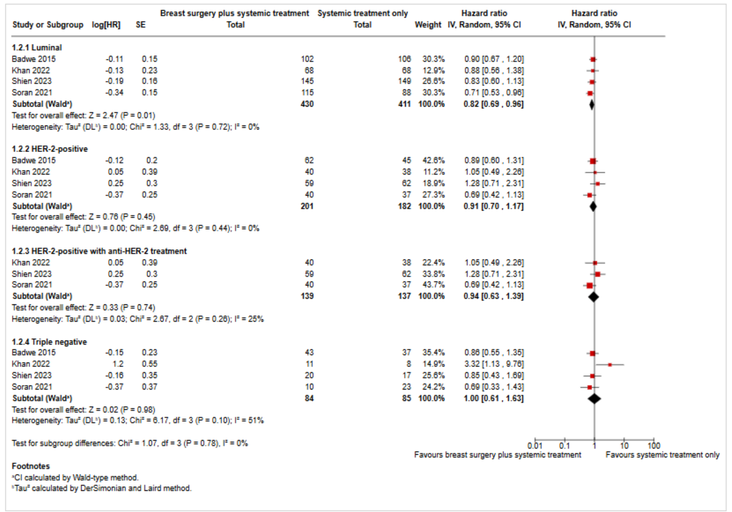
This is an update of the Cochrane systematic review published in 2018, which was approved by the ethics committee and had its research protocol published in 2014. We included five randomized clinical trials including 1368 women with de novo metastatic breast cancer in the review. Breast surgery not reduce mortality in women with de novo metastatic breast cancer (HR 0.89; 95% CI 0.75 to 1.05, P = 0.09; 5 studies, 1368 participants; I2 = 50%; moderate certainty of evidence). In subgroup analyses of overall survival for women with luminal tumours, the addition of breast surgery to systemic treatment appears to increase the OS, reducing the risk of death by 18% (HR 0.82; 95% CI 0.69 to 0.96; 4 studies; 841 women; P = 0.72; I2 = 0%; moderate certainty of evidence). Breast surgery reduces the risk of local disease progression (HR 0.43; 95% CI 0.32 to 0.58; 4 studies; 1093 women; I2 = 31%; high certainty of evidence) and doesn't improve metastatic disease control (HR of 1.19, 95% CI 0.86 to 1.18; 3 studies; P = 0.29; I2 = 69%; moderate certainty of evidence). The quality of life of women undergoing locoregional treatment is similar when compared to women undergoing systemic treatment alone in 24 months of follow-up (MD 2.74; 95% CI -2.22–7.70, I2 =0%, p = 0.28, 2 studies, low certainty of evidence). In women with bone-only metastasis, breast surgery plus systemic therapy may result in little to no difference in overall survival compared with systemic therapy alone (HR 0.83, 95% CI of 0.68 to 1.01; 4 studies, 411 women; moderate-certainty evidence).

Conclusions:

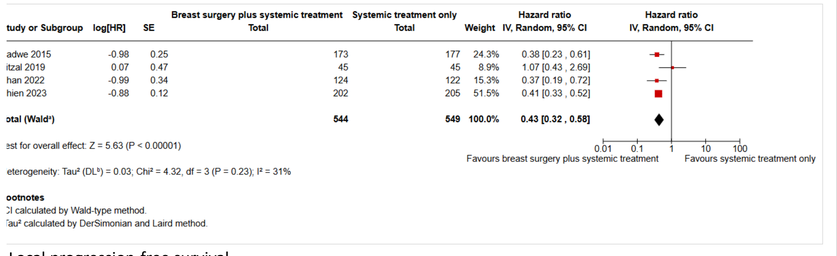
Evidence from five randomised controlled trials suggests that adding breast surgery to the treatment of de novo metastatic breast cancer improves local disease control. The impact on survival may vary depending on the immunohistochemical profile of the tumour. Breast surgery might not affect quality of life, toxicity and distant progression-free survival. .



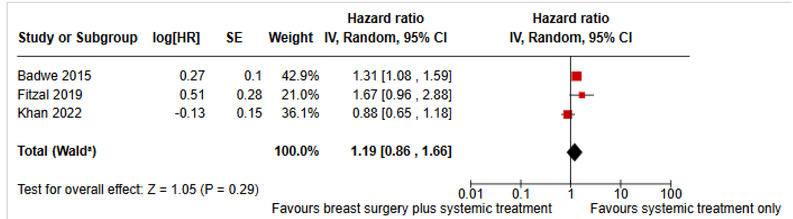
Overall survival: Breast surgery plus systemic treatment versus systemic treatment only



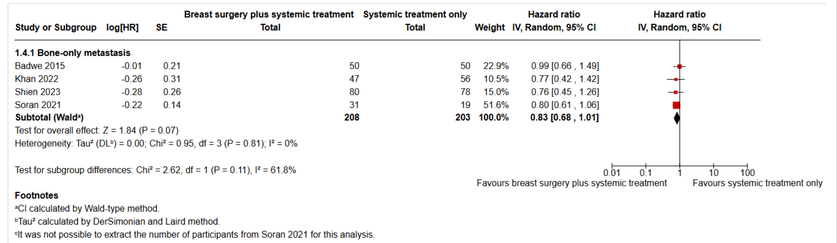
Overall survival: immunohistochemical profile



Local progression-free survival



Distant progression-free survival



Bone only-metastasis

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