



AB152. SOH22ABS123. Optimal localization strategies for non-palpable breast cancers—a network meta-analysis of randomized controlled trials

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Background: Mammographic screening programmes have increased detection rates of non-palpable breast cancers. In these cases, wire-guided localization (WGL) is the most common approach used to guide breast conserving surgery (BCS). Several randomized controlled trials (RCTs) have compared WGL to a range of novel localization techniques. We aimed to perform a network meta-analysis (NMA) of RCTs comparing methods of non-palpable breast cancer localization.

Methods: A NMA was performed according to PRISMA-NMA guidelines. Analysis was performed using R packages and Shiny.

Results: A total of 24 RCTs assessing 9 tumour localization methods in 4,236 breasts were included. Margin positivity and reoperation rates were 16.9% (714/4,236) and 14.3% (409/2,870) respectively. Cryo-assisted localization had the highest margin positivity (28.2%, 58/206) and reoperation (18.9%, 39/206) rates. Compared to WGL (n=2,045 from 24 RCTs) only ultrasound guided localization (USGL) (n=316 from 3 RCTs) significantly lowered margin positivity [odds ratio (OR): 0.192, 95% confidence interval (CI): 0.079–0.450] and reoperation rates (OR: 0.182, 95% CI: 0.069–0.434). Anchor-guided localization (n=52, 1 RCT) significantly lowered margin positivity (OR: 0.229, 95% CI: 0.050–0.938) and magnetic-marker localization improved patient satisfaction (OR: 0.021, 95% CI: 0.001–0.548). There was no difference in operation duration, overall

complications, haematoma, seroma, surgical site infection rates, or specimen size/volume/weight between methods.

Conclusions: USGL and AGL are non-inferior to WGL for the localization non-palpable breast cancers. The reported data suggests that these techniques confer reduced margin positivity rates and requirement for re-operation. However, caution when interpreting these results is required due to small sample sizes. Further validation of these results is required in larger prospective, randomized studies.

Keywords: Breast cancer; breast conservation surgery; localisation; precision oncology; surgical oncology

Acknowledgments

Funding: None.

Footnote

Conflicts of Interest: The authors have no conflicts of interest to declare.

Ethical Statement: The authors are accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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doi: 10.21037/map-22-ab152

Cite this abstract as: Davey M, O'Donnell J, Boland M, Ryan E, Walsh S, Kerin M, Lowery A. AB152. SOH22ABS123. Optimal localization strategies for non-palpable breast cancers—a network meta-analysis of randomized controlled trials. *Mesentery Peritoneum* 2022;6:AB152.