

AB033. Comparing the benefits and risks of using acellular dermal matrix (ADM) or synthetic mesh support in immediate breast cancer reconstruction—a systematic review and network meta-analysis

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Background: The use of biological and synthetic meshes in implant based breast reconstruction (IBBR) has become standard care in recent years, however, there is limited high quality evidence to support their effectiveness or safety profile. This network meta-analysis aimed to compare acellular dermal matrix (ADM) and synthetic meshes, and to evaluate their benefits and risks, including long term comparative data.

Methods: A systematic search for randomised control

trials and observational studies comparing the different types of mesh was performed. A network meta-analysis was conducted using the Bayesian Markov Chain Monte Carlo method in WinBUGS 1.4.3 (MRC Biostatistics Unit, Cambridge, and Imperial College School of Medicine, London, UK) and Microsoft-Excel-based network meta-analysis tool (NetMetaXL).

Results: A total of 2,260 articles were excluded leaving 17 articles for inclusion. Network meta-analysis showed that for overall complications no mesh was superior to ADM [odds ratio (OR) 0.79; Credible interval (CrI): 0.69–0.90], however there was no statistically significant difference between no mesh and synthetic mesh (OR 0.99; CrI: 0.62–1.61).

Conclusions: There is a lack of high quality randomised control trials in the literature comparing different types of mesh. Often in studies it is hard to define the exact type and extent of complication that has occurred. Selecting the appropriate IBBR should factor in effectiveness, adverse effects, and cost. While it is difficult to select an ideal IBBR, evaluation using this network analysis may help guide both physicians and patients.

Keywords: Acellular dermal matrix (ADM); synthetic mesh support; immediate breast reconstruction

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