AB163. SOH22ABS225. The positive predictive value of vacuum assisted excision (VAE) in predicting final histological diagnosis for breast lesions of uncertain malignancy (B3 lesions): a systematic review & meta-analysis

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Background: High-risk or B3 breast lesions are considered lesions of uncertain malignant potential. They include atypical ductal hyperplasia (ADH), flat epithelial atypia (FEA), classic type lobular carcinoma *in situ* (LCIS), atypical lobular hyperplasia (ALH), radial scar (RS), fibroepithelial lesions and papillomata. Management of B3 lesions remains controversial with conflicting international guidelines. We sought to perform a systematic review and meta-analysis of studies published within the last twenty years to determine the pooled positive predictive value (PPV) of VAE in selected B3 lesions.

Methods: The study report is based on the guidelines of Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) and Meta-Analysis of Observational Studies in Epidemiology. The primary outcome of this study was to determine the PPV of vacuum assisted excision (VAE) in determining final histological diagnosis in B3 breast lesions using pooled estimates. The secondary outcomes were to determine if needle gauge or the re-classification of LCIS introduced in 2012 influenced pooled estimates.

Results: Overall, 79 studies incorporating 6,528 B3 lesions were included in this review, 1,220 of which were upgraded to DCIS or invasive malignancy following surgical excision (18.7%). The pooled PPV of VAE in ADH and lobular neoplasia (LN) were 0.79 (CI: 0.76–0.83) and 0.84 (CI: 0.8–0.88), with an underestimation rate of 21% and 15% respectively. VAE of FEA, radial scar and papillary lesions with/without atypia all had a pooled PPV >90% (underestimation rates 7%, 1%, 3% and 5% respectively). Needle gauge size and the change in LCIS classification did not appear to influence underestimation rates.

Conclusions: Pooled estimates from this meta-analysis suggests that it is reasonable to perform VAE as definitive treatment for certain B3 lesions, specifically LN, FEA, radial scar, and papillary lesions with/without atypia when specific criteria are fulfilled. Surgical excision should continue as the mainstay of treatment for ADH.

Keywords: Vacuum assisted biopsy; vacuum assisted excision (VAE); breast biopsy; B3 lesion; lesion of uncertain malignant potential

Acknowledgments

Footnote