The value of a pelvic drain after robot-assisted radical prostatectomy: A systematic review and meta-analysis

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KEYWORDS: Robotic prostatectomy, pelvic drain, systematic review

Abstract

AIM
Many centers have adopted robotic-assisted radical prostatectomy (RARP) to treat men with localized prostate cancer. It has become a common practice to insert a pelvic drain post-operatively for the removal of urine, blood, lymph and other fluid. However, this is usually done at the surgeon’s discretion or preference, without justification from evidence-based literature.

Thus, this study will critically analyse the current literature to assess the clinical benefit of pelvic drain after RARP. In addition, this study group will continue to test the hypothesis and has designed a protocol for the first Australasian randomised controlled trial to investigate the effectiveness of pelvic drain insertion post RARP.

METHOD
This is a systematic review with meta-analysis adhering to the PRISMA statement. Scopus, Web of Science, and EBSCOhost were searched, from January 1, 2009 to February 31, 2018. Key words used were "pelvic drain" and "radical prostatectomy" and “lymphoc*” and “complication*”.

The study types eligible for inclusion were randomized control trials (RCTs), non-RCTs, and cohort studies. Other inclusion criteria were: (1) studies that assessed the outcomes of surgical drain or pelvic drain following radical prostatectomy; (2) studies that assessed the relevant outcomes for men with localized prostate cancer. Exclusion criteria were: (1) studies that did not assess robotic-assisted radical prostatectomy; (2) studies that included surgical outcomes for patient with metastatic disease.

The Mantel-Haenszel test was used for meta-analysis and results were expressed as the risk difference with 95% confidence interval (CI). A random effects model was utilised and heterogeneity was analyzed using a Chi-squared test on N-1 degrees of freedom, with an alpha of 0.05 used for statistical significance for the I² test.

RESULTS
Three articles met the criteria for analysis. Only one study was rated as low risk of bias. The result indicated no statistically significant difference in lymphocele rate after RARP between patients with or without pelvic drains. There was no difference between rates of Clavien-Dindo II-V complications in the “Drain” and “No Drain” group (12.4% and 9.7% respective). To further investigate this, our trial protocol for POPDART – Prospective Randomised Trial of Pelvic Drain Placement vs no Pelvic Drain Placement after Robot Assisted Radical Prostatectomy has been developed and received ethics approval. Recruitment will to this trial will begin shortly.

CONCLUSION
This study is the first to review the current literature assessing the effectiveness of pelvic drain insertion post-RARP. Based on three included studies, there is no clear benefit of drain
insertion. A randomised trial will being recruitment shortly to further investigate this clinical question.