Apparently conflicting meta-analyses on prophylactic negative pressure wound therapy after cesarean

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The authors report no conflict of interest.

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Word count: 399
To the Editors,

We read with interest two apparently discordant meta-analyses on the prophylactic negative-pressure wound therapy (NPWT) after caesarean delivery recently published in the American Journal of Obstetrics and Gynecology (AJOG) \(^1\) and in Obstetrics & Gynecology (O&G) \(^2\). According to the latter, “currently available evidence does not support NPWT use among obese women for caesarean wound complication prevention” and the former considered the results suggestive of “a reduction in surgical site infection and overall wound complications”.

Several sources of discordance between systematic reviews/meta-analyses have been described, including differences in objectives and methods, or errors in implementation.\(^3\) Regarding these two papers, their objectives were essentially the same, but there were differences in the search strategies, as well as in study designs and outcomes selected for analysis. In the AJOG, both randomized controlled trials (RCTs) and cohort studies were used to compute pooled relative risk (RR) estimates with 95% confidence intervals (95%CI), whereas in O&G only data from RCTs were analysed. In the AJOG the conclusions were driven by results regarding surgical site infection (RCTs: RR, 0.55, 95%CI, 0.35-0.87; cohort: RR, 0.32, 95%CI: 0.18-0.57; all studies: RR, 0.45, 95%CI, 0.31-0.66) despite data regarding other outcomes were also presented, including composite wound complications (RCTs: RR, 0.82, 95%CI, 0.57-1.18; cohort: RR, 0.45, 95%CI, 0.26-0.78; all studies: RR, 0.68, 95%CI, 0.49-0.94), and in O&G the authors focused mostly on the composite outcome of wound complications (RCTs: RR, 0.97, 95%CI, 0.63-1.49). A composite outcome of wound infections was analysed as well (RCTs: RR, 0.79, 95%CI, 0.44-1.41).
Despite the search strategies were comprehensive and covered analogous periods in both reviews, there was no complete overlap between them. There was one additional RCT in the AJOG paper;\(^4\) if it had been included in the O&G meta-analysis the conclusions would be essentially the same for composite wound complications (RR, 0.82, 95%CI, 0.57-1.18) and a negative significant association would have been obtained for surgical site infection. Also, two additional cohort studies were identified in the O&G report, but not eligible for this meta-analysis.

Summing up, weaker associations were obtained from RCTs as well as for the composite outcome of wound complications, and the differences in the conclusions of these reviews were mostly determined by the choice of distinct primary outcomes by their authors. This is an example of how the conclusions of transparent systematic reviews/meta-analyses may be subjective and influenced by methodological options made by the authors.
References


