



EFFICACY OF NEGATIVE PRESSURE WOUND THERAPY VERSUS STANDARD OF CARE FOR CLOSED ABDOMINAL INCISION: AN UPDATED META-ANALYSIS



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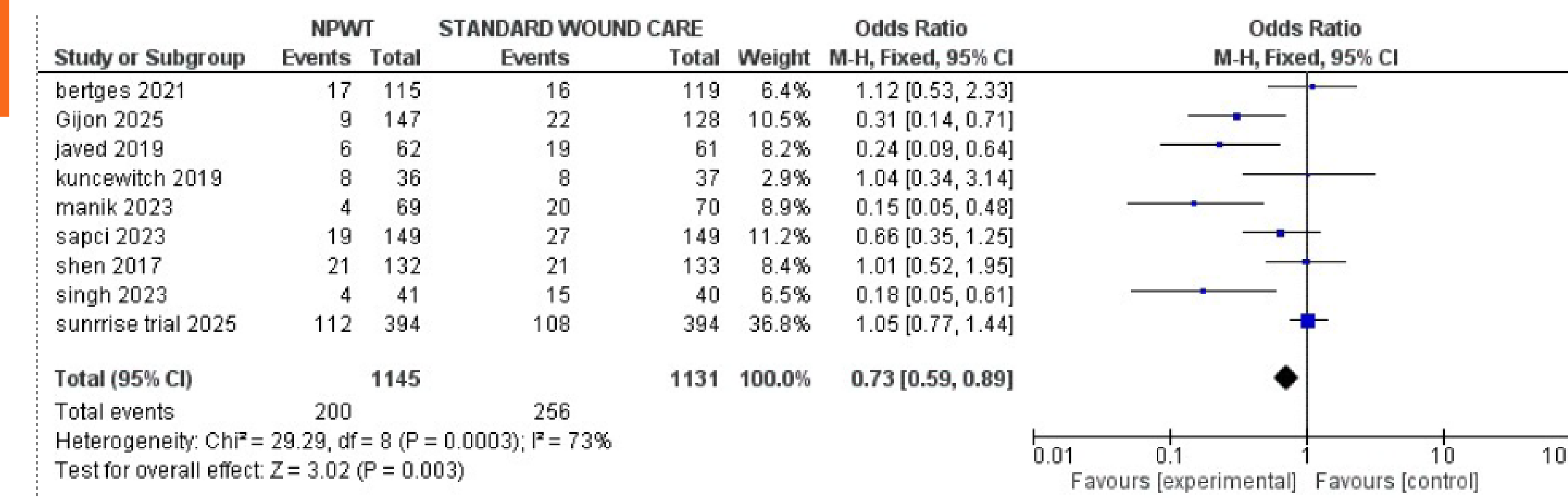
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Introduction

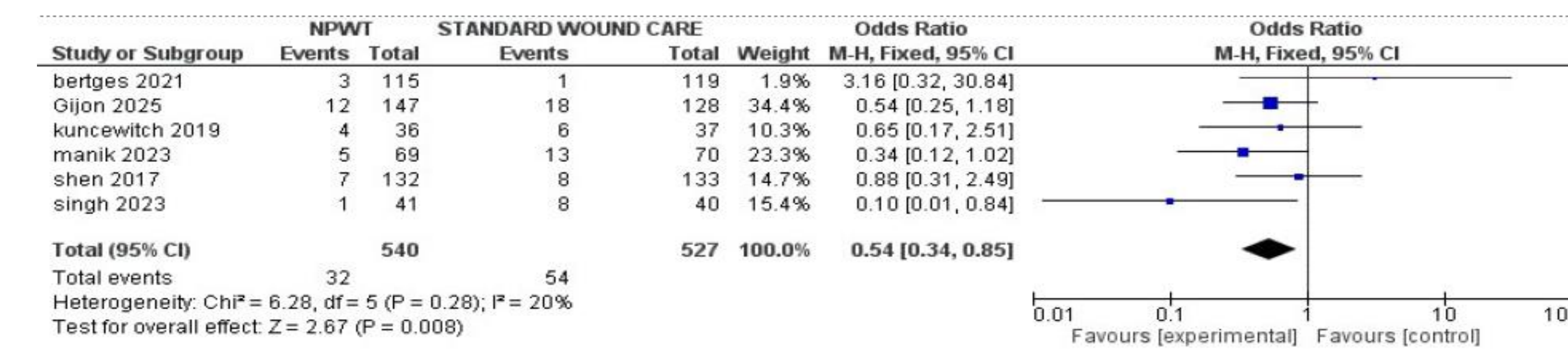
Surgical Site Infection (SSI) and wound complications significantly contribute to morbidity and prolonged hospital stay resulting in significant health care burden. Negative Pressure Wound Therapy (NPWT) has emerged as a potential strategy to reduce these complications. Data regarding use of NPWT in closed abdominal incision is conflicting in high-risk patients. Due to high risk of SSI in this patient population, we sort to identify the efficacy of NPWT with existing literature. This Meta-analysis aimed to compare NPWT with standard wound care in terms of SSI, wound dehiscence, seroma formation and hospital length of stay (LOS).

Methodology

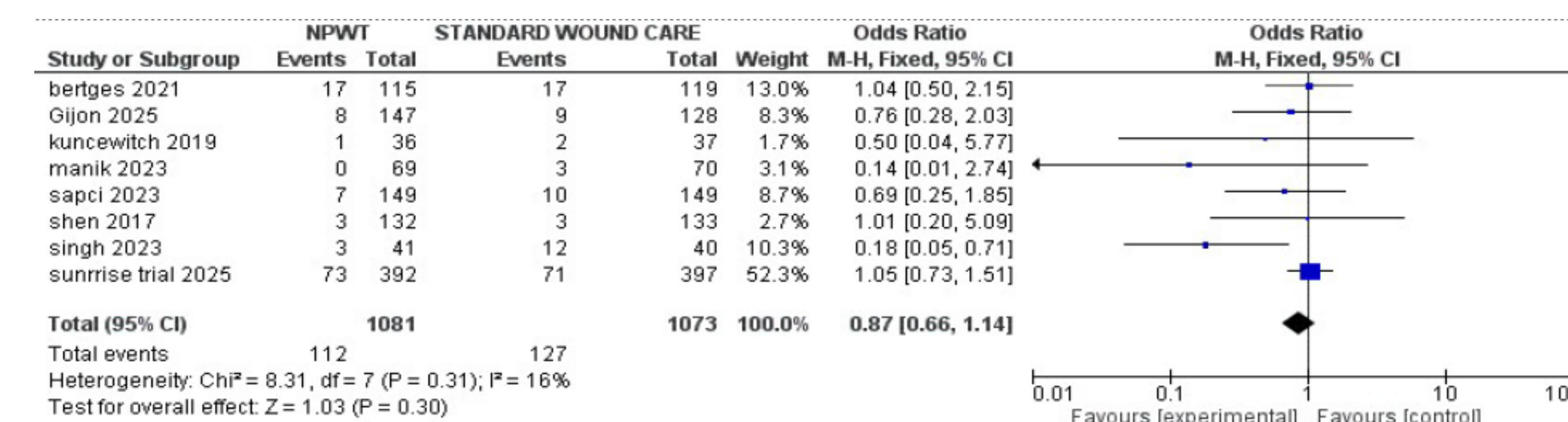
We searched across Cochrane, Embase, Medline, PubMed and found 7 RCTs and 2 comparative studies based on our inclusion criteria. Data was extracted using Review Manager version 5.4.1 with primary outcome being SSI, wound dehiscence, seroma formation and hospital length of stay (LOS). Pooled Risk Ratio (RR) or Mean Difference (MD) with 95% Confidence Interval was calculated.



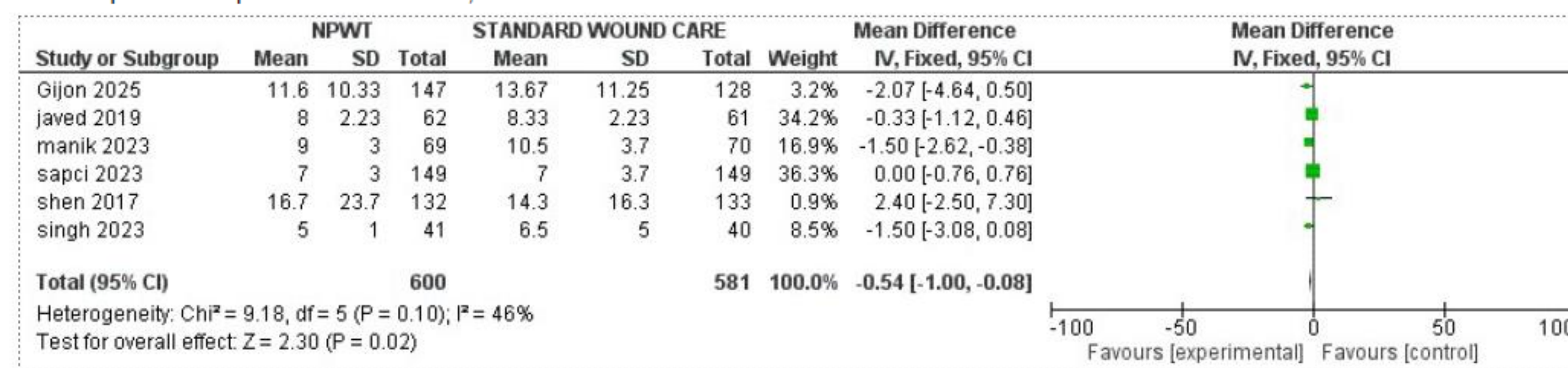
Forest plot of comparison: 1 outcomes, outcome: 1.1 SSI.



Forest plot of comparison: 1 outcomes, outcome: 1.3 SEROMA FORMATION.



Forest plot of comparison: 1 outcomes, outcome: 1.2 WOUND DEHISCENCE.



Forest plot of comparison: 1 outcomes, outcome: 1.4 HOSPITAL LOS.

Results

NPWT was associated with a statistically significant reduction in SSI rate(RR=0.73 95%CL[0.59-0.89], p<0.05), seroma formation (RR=0.54 95%CL[0.34-0.85], p<0.05). No significant difference was observed in wound dehiscence (RR=0.87 95%CL[0.66-1.14])hospital LOS (MD = -0.54 95%CL[-1.00-0.08]) with a mean reduction of 0.54 days.

Conclusion

NPWT significantly reduced SSI, seroma formation compared to standard wound care even in high-risk patients following abdominal surgery demonstrating both clinical and health care economical benefit albeit costs associated with NPWT. However, it did not have a statistically significant difference in reducing wound dehiscence; the overall evidence supports incorporating NPWT into enhanced recovery and infection-prevention protocols for high-risk surgical patients undergoing open abdominal surgery.