

Evidence Update

Trauma Series

Are tissue adhesives better than sutures for closing traumatic lacerations?

Tissue adhesives yield similar cosmetic results, reduce procedure time and cause less pain than standard wound closure for simple traumatic lacerations, although the wound is more likely to re-open.

Inclusion criteria

Studies:

Randomized controlled trials.

Participants:

People of any age in an emergency department, outpatient, walk-in clinic, or other primary care setting, with acute linear lacerations (of any length, width or depth) less than 12 hours old.

Intervention:

Intervention: laceration closure by tissue adhesive.

Comparison: another form of skin closure (sutures, adhesive strips) or a second tissue adhesive.

Outcomes:

Primary: cosmetic outcome (cosmesis).

Secondary: pain during procedure; time to complete procedure; ease of procedure; complications (including wound re-opening).

Results

- 11 trials included, only one had adequate allocation concealment. Ten trials evaluated tissue adhesives compared with standard wound closure (SWC). The SWC method was sutures in six studies, adhesive strips in two studies, and a mixture of closure methods in two studies. One study evaluated two different tissue adhesives.
- No difference in cosmetic outcome was found for tissue adhesives compared with standard wound closure at any time point (see graph).
- Applying tissue adhesive was significantly less painful (parental pain score weighted mean difference -13.4 mm, 95% confidence interval -20.0 to -6.9; 5 trials), and procedure time shorter (weighted mean difference -4.7 minutes, 95% confidence interval -7.2 to -2.1; 6 trials) than standard wound closure.
- Wound re-opening was more common with tissue adhesive (risk difference 4%; 95% confidence interval 1 to 7); this means that one in 25 patients (95% confidence interval 14 to 100) could require a second closure. (Number needed to harm 25, 95% confidence interval 14 to 100). No differences were demonstrated for infection, discharge and delayed wound closure.

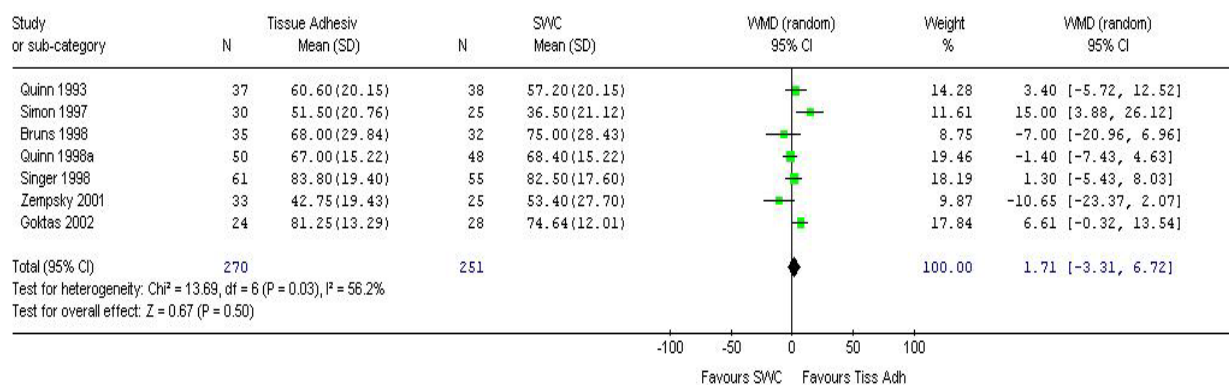


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Tissue adhesive versus standard wound closure (SWC): cosmetic outcome



Authors' conclusions

Implications for practice:

Tissue adhesives are an acceptable alternative to standard wound closure for repairing simple traumatic lacerations, offering the benefits of rapid application and less pain. There is a small increased risk of the wound re-opening with tissue adhesives.

Implications for research:

Well-designed, adequately powered trials are needed to examine wound dehiscence with tissue adhesives; tissue adhesives for complex lacerations; compare different tissue adhesives; and evaluate the cost compared to alternate wound closure methods.