

Silver delivery approaches in the management of partial thickness burns: a systematic review and indirect treatment comparison



Evidence

- Level 1 evidence
- Systematic review & meta-analysis



Objective

To assess the comparative efficacy of commonly used silver delivery approaches in the management of partial thickness burns in order to inform evidence based treatment decisions. The study compared ACTICOAT[®], Aquacel[™] Ag, Mepilex[™] Ag and Silver Sulfadiazine (SSD).



Methods

A comprehensive systematic review and a meta-analysis of both RCTs and observational studies was conducted in accordance with standard methods. Literature was searched in major medical databases such as PubMed, EMBASE, Cochrane Database of Systematic Reviews (CDSR), Cochrane Central Register of Controlled Trials (CENTRAL).

As there were no studies that compared ACTICOAT, Aquacel Ag and Mepilex Ag directly, a type of statistical analysis called an adjusted indirect treatment comparison (ITC) was used to compare these interventions via a common comparator, SSD. (See figure 1)

The following outcomes were assessed: infection control, length of stay, time to healing and incidence of surgical procedures.

The Monte-Carlo method was used, which allows for the exploration of uncertainty in the results and determines the probability that each intervention is the best for the reported outcome. (See figure 2)



Main results

12 studies were found on ACTICOAT (6 RCTs and 6 observational studies), 7 studies on Aquacel Ag (4 RCTs and 3 observational studies) and 3 RCTs on Mepilex Ag, all compared with SSD. The main findings are that ACTICOAT results in better clinical outcomes when compared to Aquacel Ag, Mepilex Ag on average reducing infections and surgical procedures by 68%, and 30% respectively and LOS by 2.5 days. Healing time was faster by about 2 days.

Figure 1: Evidence Network diagram

— Direct evidence
- - Indirect evidence

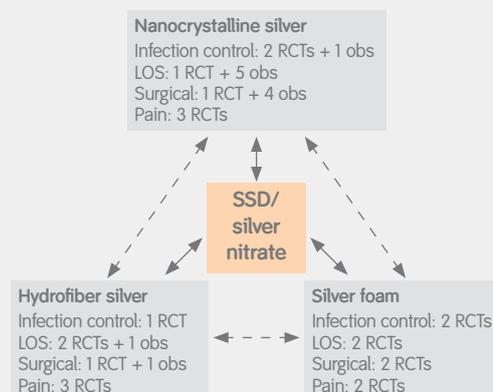
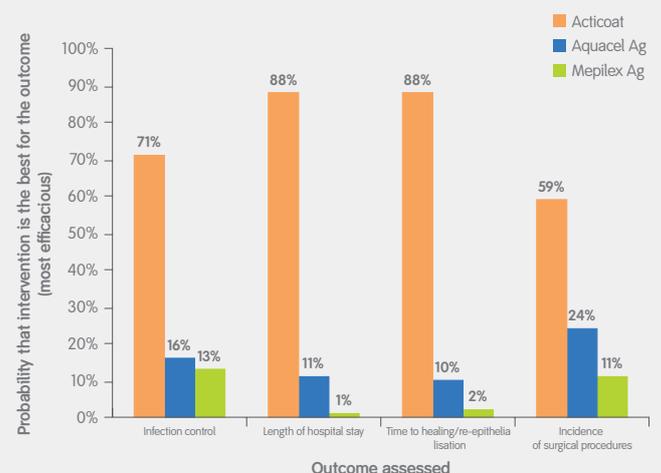


Figure 2: Monte-Carlo simulation results showing the probability that each intervention is the best for each reported outcome



CONCLUSIONS

ACTICOAT Silver barrier dressing results in better clinical outcomes compared to Aquacel Ag and Mepilex Ag (shorter length of stay, less infections and the need for surgical procedures) when a Monte-Carlo simulation technique was applied. Where the clinical and microbiological priority is to get in control of infection quickly clinicians should choose the most potent silver delivery system which is ACTICOAT.

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Reference: Silver delivery approaches in the management of partial thickness burns: a systematic review and indirect treatment comparison. *Wound Rep Regen* 2017; 25: 707-721.

Aquacel is a trademark of ConvaTec. Mepilex is a trademark of Mölnlycke Health Care.

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