

What evidence is there for the use of silver sulfadiazine in the treatment of burns? [Review]



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What is silver sulfadiazine?

Silver sulfadiazine is an anti-bacterial cream which can be applied to burn wounds in order to prevent or treat infection. It has been widely used since its introduction in the late 1960's with the intention of reducing the high morbidity and mortality associated with infection in patients with burns.

Introduction

This summer whilst on research exchange in the Prague Burn Centre I noticed widespread use of silver sulfadiazine. Despite doctors at the centre publishing work which concluded this was an inferior treatment, the consultants advocated its efficacy and continued its use. In the current climate of evidence-based medicine, this review aims to appraise the evidence behind this practice.

Aim

To systematically review the recent evidence regarding the use of silver sulfadiazine to treat burn wounds.

Search

After a broad search on Medline, articles were included based on the following:

- ✓ Recent (within 10 years)
- ✓ Human study
- ✓ Silver sulfadiazine independent or control variable

And excluded based on the following:

- x Review article
- x Animal study
- x In vitro study
- x Text unavailable

183

- Articles retrieved on Medline after searching for Burns/ AND Silver Sulfadiazine/

128

- Within the last ten years

115

- Excluding review articles

65

- With relevant title

14

- With relevant abstract and available text

Results

Evidence

Eleven of the 14 trials included compared silver sulfadiazine to an alternative treatment. All 11 trials showed silver sulfadiazine cream to be associated with worse outcomes compared to the alternative (1,185 participants involved).

The trials (Fig. 1)

Most of the trials included in the review were randomised controlled trials.

The outcomes (Fig. 2)

Rate of re-epithelialisation was the most frequency measured outcome. Pain scores were also frequently assessed. It is important to note that on every outcomes assessed, in every trial, silver sulfadiazine was shown to be the inferior treatment.

The alternatives

The following treatments were compared to silver sulfadiazine and shown to be superior:

- Octenidine-Gel
- Xenoderm
- Hydrosome wound gel
- Articoat
- Hyaluronic acid
- Glycerolised cadaver graft
- Transcyte
- Biobrane
- Polyhexanide containing bio-cellulose dressing
- Honey
- Silver sulfadiazine in combination with sericin cream

The evaluation study

One study found that when silver sulfadiazine was combined with cerium-nitrate it allowed for excision of a wound to be delayed without adverse effects.

Conclusion

Silver sulfadiazine was consistently associated with worse outcomes compared to alternative treatments. In particular, the use of silver sulfadiazine was associated with increased healing time and higher pain scores. Future work should assess the reasons behind the continued use of silver sulfadiazine in order to find ways of removing the barriers to evidence-based medicine.

Final word

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Fig. 1: Trials included

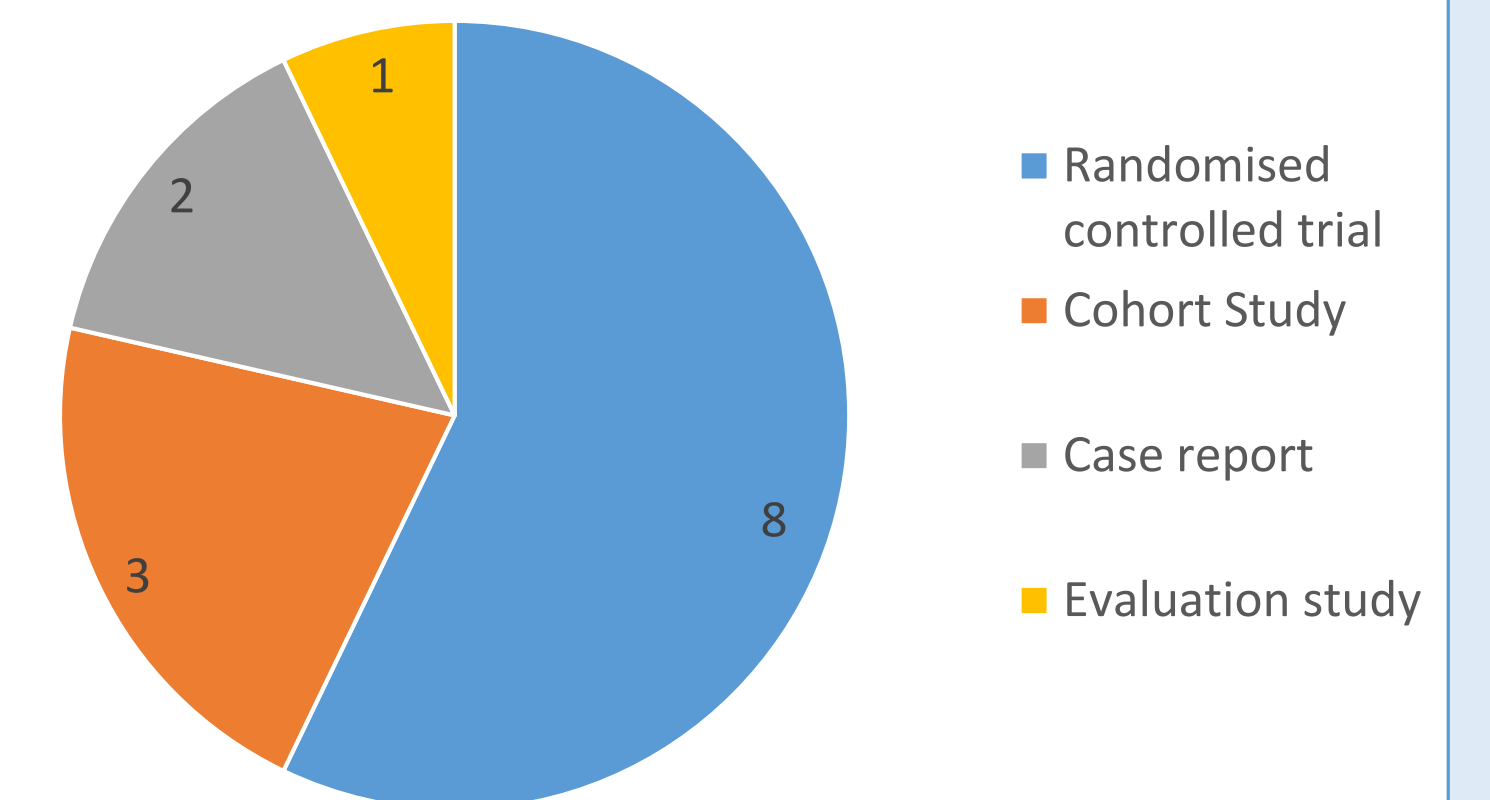


Fig. 2: Outcome(s) measured

