

Antibiotics and antiseptics for pressure ulcers.

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Antibiotics and antiseptics for pressure ulcers

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ABSTRACT

Background

Pressure ulcers, also known as bedsores, decubitus ulcers and pressure injuries, are localised areas of injury to the skin or the underlying tissue, or both. A range of treatments with antimicrobial properties, including impregnated dressings, are widely used in the treatment of pressure ulcers. A clear and current overview is required to facilitate decision making regarding use of antiseptic or antibiotic therapies in the treatment of pressure ulcers. This review is one of a suite of Cochrane reviews investigating the use of antiseptics and antibiotics in different types of wounds. It also forms part of a suite of reviews investigating the use of different types of dressings and topical treatments in the treatment of pressure ulcers.

Objectives

To assess the effects of systemic and topical antibiotics, and topical antiseptics on the healing of infected and uninfected pressure ulcers being treated in any clinical setting.

Search methods

In October 2015 we searched: the Cochrane Wounds Specialised Register, the Cochrane Central Register of Controlled Trials (CENTRAL) (*The Cochrane Library*), Ovid MEDLINE, Ovid MEDLINE (In-Process & Other Non-Indexed Citations), Ovid EMBASE, and EBSCO CINAHL Plus. We also searched three clinical trials registries and the references of included studies and relevant systematic reviews. There were no restrictions based on language or date of publication or study setting.

Selection criteria

Randomised controlled trials which enrolled adults with pressure ulcers of stage II or above were included in the review.

Data collection and analysis

Two review authors independently performed study selection, risk of bias assessment and data extraction.

Main results

We included 12 trials (576 participants); 11 had two arms and one had three arms. All assessed topical agents, none looked at systemic antibiotics. The included trials assessed the following antimicrobial agents: povidone iodine, cadexomer iodine, gentian violet, lysozyme, silver dressings, honey, pine resin, polyhexanide, silver sulfadiazine, and nitrofurazone with ethoxy-diaminoacridine. Comparators included a range of other dressings and ointments without antimicrobial properties and alternative antimicrobials. Each comparison had only one trial, participant numbers were low and follow-up times short. The evidence varied from moderate to very low quality.

Six trials reported the primary outcome of wound healing. All except one compared an antiseptic with a non-antimicrobial comparator. There was some moderate and low quality evidence that fewer ulcers may heal in the short term when treated with povidone iodine compared with non-antimicrobial alternatives (protease-modulating dressings (risk ratio (RR) 0.78, 95% confidence interval (CI) 0.62 to 0.98) and hydrogel (RR 0.64, 95% CI 0.43 to 0.97)); and no clear difference between povidone iodine and a third non-antimicrobial treatment (hydrocolloid) (low quality evidence). Pine resin salve may heal more pressure ulcers than hydrocolloid (RR 2.83, 95% CI 1.14 to 7.05) (low quality evidence). There is no clear difference between cadexomer iodine and standard care, and between honey and a combined antiseptic and antibiotic treatment (very low quality evidence).

Six trials reported adverse events (primary safety outcome). Four reported no adverse events; there was very low quality evidence from one showing no clear evidence of a difference between cadexomer iodine and standard care; in one trial it was not clear whether data were appropriately reported.

There was limited reporting of secondary outcomes. The five trials that reported change in wound size as a continuous outcome did not report any clear evidence favouring any particular antiseptic/anti-microbial treatments. For bacterial resistance, one trial found some evidence of more MRSA eradication in participants with ulcer treated with a polyhexanide dressing compared with a polyhexanide swab (RR 1.48, 95% CI 1.02 to 2.13); patients in the dressing group also reported less pain (MD -2.03, 95% CI -2.66 to -1.40). There was no clear evidence of a difference between interventions in infection resolution in three other comparisons. Evidence for secondary outcomes varied from moderate to very low quality; where no GRADE assessment was possible we identified substantial limitations which an assessment would have taken into account.

Authors' conclusions

The relative effects of systemic and topical antimicrobial treatments on pressure ulcers are not clear. Where differences in wound healing were found, these sometimes favoured the comparator treatment without antimicrobial properties. The trials are small, clinically heterogeneous, generally of short duration, and at high or unclear risk of bias. The quality of the evidence ranges from moderate to very low; evidence on all comparisons was subject to some limitations.

PLAIN LANGUAGE SUMMARY

Antibiotics and antiseptics for pressure ulcers

What are pressure ulcers and who is at risk?

Pressure ulcers, also known as bedsores, decubitus ulcers and pressure injuries, are wounds involving the skin and often the tissue that lies underneath. Pressure ulcers can be painful, may become infected, and affect people's quality of life. People at risk of developing pressure ulcers include those with spinal cord injuries, and those who are immobile or have limited mobility, such as elderly people and people who are ill.

Why use antiseptics and antibiotics to treat pressure ulcers?

Where pressure ulcers are infected, antibiotics or antiseptics are used to kill or slow the growth of the micro-organisms causing the infection and may prevent an infection from getting worse or spreading. This may also help the ulcer to heal. Where ulcers are not infected they usually still have populations of micro-organisms present. It is thought that they may heal better if these are reduced by antimicrobial agents. However, the relationship between infection and micro-organism populations in wounds and wound healing is not very clear.

What we found

In October 2015 we searched for as many studies as we could find that were randomised controlled trials and compared the use of an antibiotic or antiseptic with other treatments for pressure ulcers. We found 12 trials involving a total of 576 participants. Most

study participants were older people in hospital. Most ulcers were not infected at the start of the trials. The different treatments assessed included povidone iodine, cadexomer iodine, gentian violet, lysozyme, silver dressings, honey, pine resin, silver sulfadiazine, polyhexanide and a combination of nitrofurazone and ethoxy-diaminoacridine. Silver sulfadiazine and nitrofurazone are topical (locally acting) antibiotics while the other treatments are antiseptics. No trials looked at systemic (acting across the whole body) antibiotics. The treatments were compared with each other or to treatments without antimicrobial qualities. Most evidence on wound healing came from trials comparing antiseptics to treatments without antimicrobial qualities.

There was no consistent evidence of a benefit to using any particular antimicrobial treatment for pressure ulcers. However, there was some limited evidence that more ulcers healed when treated with some types of alternative dressings without antimicrobial properties than when treated with povidone iodine. All the studies had low numbers of participants, and in some cases these numbers were very small. Many studies did not report important information about how they were carried out so it was difficult to tell whether the results presented were likely to be true. More, better quality, research is needed to determine the effects of antimicrobial treatments on pressure ulcers.