Antibiotics and antiseptics for venous leg ulcers

Review question
What are the effects of systemic antibiotics, topical antibiotics and antiseptics on the healing of venous leg ulcers?

Nursing implications
Chronic venous leg ulcers are slow to heal and provide a perfect medium for bacterial growth. The presence of infection has been shown to delay wound healing, which is costly in terms of both nursing intervention and effects on the patient.

The two types of treatments for infection are systemic antibiotics and topical preparations. The wounds also require a dressing and bandage to absorb exudate and protect the wound bed. Standard care usually includes compression bandaging, which has been shown to be effective in healing venous leg ulcers.

Prescribing guidelines in the UK state that systemic and topical antibiotics should not be used routinely with chronic wounds to prevent antibiotic-resistant strains of bacteria from developing. Antibacterial preparations should only be used to treat clinical infection in leg ulcers, not for bacterial colonisation.

Study characteristics
This summary is based on a Cochrane systematic review.

Participants had venous leg ulcers; selection was not restricted to those with colonised or infected wounds. The duration of ulcers was not specified.

A total of 25 prospective randomised controlled trials were included. The studies evaluated the primary intervention of topical or systemic antibiotics or antiseptics in the treatment of venous leg ulcers.

Trials that considered topical silver and honey-based preparations and wounds being prepared for skin grafting were excluded.

Summary of key evidence
Five trials evaluated systemic antibiotics. The remainder evaluated topical preparations: cadexomer iodine; povidone iodine; peroxide-based preparations; ethacridine lactate; mupirocin; and chlorhexidine.

For the systemic antibiotics, the only comparison where there was a statistically significant difference was in favour of levamisole compared with a placebo. However, this trial – as with the other evaluations of systemic antibiotics – was small so the observed effect could have occurred by chance.

For topical preparations, there was some evidence to suggest cadexomer iodine generated higher healing rates than standard care.

One study showed a statistically significant result in favour of cadexomer iodine when compared with standard care (not involving compression). The intervention regimen used was intensive, involving daily dressing changes, so these findings may not be generalisable to most everyday clinical settings.

When cadexomer iodine was compared with standard care in all patients receiving compression, the pooled estimate from two studies for the frequency of complete healing at four to six weeks indicated significantly higher healing rates for cadexomer iodine.

Best practice recommendations
The review found there is currently no research to support the routine use of systemic antibiotics to promote the healing of leg ulcers. However, the lack of reliable evidence means that the discontinuation of any of the agents reviewed cannot be recommended.

The effectiveness of topical preparations such as povidone iodine, peroxide-based preparations, ethacridine lactate, mupirocin and chlorhexidine in healing leg ulcers requires further research. There is some evidence to support the use of cadexomer iodine.

Control regimens included placebo, an alternative antibiotic, any other therapy, standard care or no treatment.

Interventions were delivered in any setting, for example in nursing homes and in hospital, to both inpatients and outpatients. Thirty-two comparisons were made.

The primary outcome measures were:
» Time to complete ulcer healing;
» Proportion of ulcers completely healing during the trial period (frequency of complete healing);
» Objective measurements of change in ulcer size;
» Healing rate (for example, a 2mm ulcer surface area reduction per week).

Secondary outcomes included:
» Changes in signs and/or symptoms of clinical infection;
» Changes in bacterial flora;
» Development of bacterial resistance;
» Ulcer recurrence rates;
» Adverse effects of treatment;
» Patient satisfaction;
» Quality of life;
» Costs.

The full review report, including references, can be accessed at tinyurl.com/coch-antibiotics

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Reference

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