

Compression Therapy in Diabetic Foot Ulcer Management: A Review

Context

The rising prevalence of diabetes and its associated complications represent a global public health care problem and financial burden. The estimated prevalence of diabetes in Canada is 6.8% — roughly 2.4 million Canadians — and it is increasing, with a 230% increase from 1998. Diabetic foot ulcers (DFUs) are the most common chronic complication, affecting 4% to 10% of patients with diabetes. DFUs can become infected and lead to osteomyelitis (bone infection), cellulitis (skin infection), and even amputation, resulting in significant morbidity, mortality, and costs to the health care system.

Technology

Local circulation with sufficient oxygen and nutrients supports wound healing. The goal of compression therapy for DFUs is to improve circulation by controlling external pressure through the application of bandages, specialized stockings, or inflatable garments. Intermittent pneumatic compression is also available, which simulates the effect of walking on the venous system by inflating and deflating sleeves to defined pressures. Compressed air massage is another method of compression therapy; it uses a stream of compressed air directly on the wound.

Issue

A review of the comparative clinical and cost-effectiveness, and evidence-based guidelines of compression therapies for the treatment of DFUs will help inform clinical decisions for these patients.

Methods

A limited literature search was conducted of key resources, and titles and abstracts of the retrieved publications were reviewed. Full-text publications were evaluated for final article selection according to predetermined selection criteria (population, intervention, comparator, outcomes, and study designs).

Key Messages

- Intermittent compression therapy and compressed air massage may improve the time to heal and reduce edema of DFUs (based on limited evidence).
- No information was found on the cost-effectiveness of compression therapy to treat patients with DFUs.
- One clinical guideline suggests that foot compression in addition to standard wound care is more effective for healing infected DFUs than standard care alone.

Results

The literature search identified 94 citations, with 9 additional articles identified from other sources. Of these, 2 systematic reviews and 1 set of evidence-based guidelines met the criteria for inclusion in this review.

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