Review: High-compression bandages, stockings, and Unna's boot improve healing rates in venous leg ulcers


Objective
To review the effectiveness of different forms of compression therapy on venous ulceration and prevention of ulcer recurrence.

Data sources
Studies were identified in 18 electronic databases, including MEDLINE, CINAHL, and EMBASE. Hand searches were done of relevant journals and conference proceedings, and experts were consulted.

Study selection
Studies were selected if they were randomised controlled trials (RCTs) (published or unpublished) that measured leg ulcer healing. Studies that compared patients receiving new treatments with historical control group patients were excluded.

Data extraction
2 independent reviewers assessed the methodological quality of each study using predetermined criteria.

Main results
24 RCTs evaluated different forms of compression therapy: compression compared with no compression, high compared with low compression, different types of high compression, stockings compared with bandages, and intermittent pneumatic compression treatment. In addition, 7 RCTs compared interventions to prevent recurrence of venous ulceration. 4 of 6 studies that compared compression with no compression showed that compression therapy using Unna's boot, 4-layer bandages, or short-stretch bandages improved healing rates of venous ulcers (P < 0.01). 3 of 4 RCTs that compared high-compression with low-compression bandaging showed increased healing rates with high compression, but only 1 study reached statistical significance. In studies comparing various types of high-compression bandages, no difference in healing rates was shown when 4-layer bandaging, short-stretch bandaging, or Unna's boot were compared. 1 study of high-compression bandages showed that 4-layer bandaging was superior to single-layer systems in healing rate (69% vs 49%). In 1 RCT, an increased healing rate was seen with compression stockings compared with short-stretch bandages (84% vs 52%, P < 0.05). RCTs showed that intermittent pneumatic compression plus compression stockings or Unna's boot promote healing better than stockings or Unna's boot alone (combined odds ratio 95% CI 3 to 34). Studies of pharmacological and surgical interventions to prevent recurrence were inconclusive.

2 placebo-controlled RCTs with hanzolol or rutoside in addition to compression stockings showed no effect of the drugs on healing rate. Combining results were shown in 2 trials that included surgery.

Conclusions
Venous leg ulcer healing is improved when high-compression multilayer bandages, short-stretch bandages, or Unna's boot, or compression stockings are used. The addition of intermittent pneumatic compression may enhance the effect.

Source of funding: National Health Technology Assessment Programme.


References

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