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Pressure-relieving interventions for treating diabetic foot ulcers

New search

Conclusions changed

Review

Intervention

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Abstract

English

Background

Diabetes-related foot ulceration is a major contributor to morbidity in diabetes. Diabetic foot ulcers are partly a consequence of abnormal foot pressures and pressure relief is a widely used treatment for healing diabetes-related plantar foot ulcers, but the most effective method for healing is unclear.

Objectives

To determine the effects of pressure-relieving interventions on the healing of foot ulcers in people with diabetes.

Search methods

For this update we searched the Cochrane Wounds Group Specialised Register (searched 2 November 2012); The Cochrane Central Register of Controlled Trials (CENTRAL) (*The Cochrane Library* 2012, Issue 10); Ovid MEDLINE (1950 to October Week 4 2012); Ovid MEDLINE (In-Process & Other Non-Indexed Citations, October 31, 2012); Ovid EMBASE (1980 to 2012 Week 43); and EBSCO CINAHL (1982 to 1 November 2012). There were no restrictions based on language or publication status.

Selection criteria

Randomised controlled trials evaluating the effects of pressure-relieving interventions on the healing of foot ulcers in people with diabetes.

Data collection and analysis

Data from eligible trials were extracted, and summarised using a data extraction sheet, by two review authors independently.

Main results

Fourteen trials (709 participants) met the inclusion criteria for the review. One study compared two different types of non-removable casts with no discernable difference between the groups. Seven studies (366 participants) compared non-removable casts with removable pressure-relieving devices. In five of those studies non-removable casts were associated with a statistically significant increase in the number of ulcers healed compared with the removable device (RR 1.17 95% CI 1.01 to 1.36; P value = 0.04).

Two studies (98 participants) found that significantly more ulcers healed with non-removable casts than with dressings alone. Achilles tendon lengthening combined with a non-removable cast in one study resulted in significantly more healed ulcers at 7 months than non-removable cast alone (RR 2.23; 95% CI 1.32 to 3.76). More ulcers remained healed at two years in this group (RR 3.41; 95% CI 1.42 to 8.18).

Other comparisons included surgical debridement of ulcers; felt fitted to the foot; felted foam dressings and none of these showed a statistically significant treatment effect in favour of the intervention.

Authors' conclusions

Non-removable, pressure-relieving casts are more effective in healing diabetes related plantar foot ulcers than removable casts, or dressings alone. Non-removable devices, when combined with Achilles tendon lengthening were more successful in one forefoot ulcer study than the use of a non-removable cast alone.

Plain language summary

[English](#)

Non-removable pressure-relieving interventions help to heal foot ulcers in people with diabetes

Foot ulceration is a complication of diabetes and can lead to amputation. Ulcers can occur due, in part, to abnormal pressures on the sole of the foot. The studies included in this review compared non-removable pressure-relieving interventions (foot casts) with other ways of relieving pressure on the ulcer site to improve healing. The comparisons included dressings alone, temporary therapeutic shoes, removable pressure-relieving devices and surgical intervention. The review found that the non-removable interventions were more effective than any of the other external pressure-relieving methods. Non-removable casts used with Achilles tendon lengthening were more successful in one forefoot ulcer study than using a non-removable cast alone.

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