Herbal Medicine Review

Comfrey Ointment Effective in Treating Ankle Injuries

Raymond Khoury


Introduction

Comfrey (Symphytum officinale) has been used as a medicinal plant for generations. In Germany comfrey ointment is widely used in sports medicine, especially in injuries of the ankle.

Comfrey contains the hepatotoxic double bonded pyrrolizidine alkaloids (PA), however the absorption of PAs via the skin is so minimal that comfrey ointment does not pose a risk to those who use it.

Comfrey has anti-inflammatory and analgesic properties, and stimulates granulation and tissue regeneration. Even though the pharmacokinetics of comfrey is poorly understood, it is recognised that the constituents of allantoin, mucilage and rosmarinic acid contribute to its therapeutic activities.

Study Details

The trial was conducted at the German Sports University as well as four sports medicine and orthopaedic centres. The 140 participants in this trial had uncomplicated, acute unilateral ankle injury of less than 6 hours duration.

The researchers assessed ankle injuries by measuring pain, swelling of the ankle, evaluation of the limitation of movement, the need for paracetamol and the self-assessment of treating physicians and participants.

Of the 140 participants, 80 participants administered comfrey ointment and 60 applied a placebo. Administration of either comfrey or placebo lasted for 8 days. The comfrey, as well as the placebo ointment, were both applied 4 times daily (about 2 g of ointment) using light massaging. The injured ankle area was then covered with gauze and an elastic support bandage.

Herb Used

The comfrey ointment was made from a 1:2 liquid fresh root extract of comfrey. The extract was made with 60% alcohol. The allantoin content was calculated at 0.2—0.5%.

The placebo ointment was the same base as used for comfrey ointment but without the comfrey, resulting in identical appearance, feel and odour. The participants did not know whether they were using a placebo, and therefore applied the placebo ointment in the same manner as comfrey ointment.

Results

The reduction in ankle pain was measured tonometrically. The participants applying comfrey ointment had a greater reduction of ankle pain than those who used the placebo ointment. The reduction in ankle pain of those using comfrey ointment was both clinically and statistically significant (p<0.0001).

The reduction in ankle swelling was significantly quicker in the comfrey ointment group than the placebo group (p=0.0001).

There was significant more improvement in average dorsiflexion and plantar flexion in the comfrey group than the placebo group (p=0.002). However there was no significant difference in abduction and adduction of the ankle between the comfrey and placebo groups.

The researchers concluded that:

In this placebo-controlled clinical study, a statistically and clinically significant superiority of a comfrey extract versus placebo was demonstrated for the treatment of ankle distortions using tonometrically registered pain variables as target criteria.

The researchers noted that these results are consistent with results from other studies. In one study, comfrey ointment was compared with cutaneous cryotherapy in acute ankle injury. This 14 day study concluded that pain and swelling regressed quicker with participants applying comfrey ointment than the cryotherapy group.

Clinical Application

The excellent clinical results of this trial were obtained with comfrey ointment based on a 1:2 hydroalcoholic extract. Single study clinical observations over a decade indicate that the efficacy of comfrey ointment made from the shredded whole fresh plant root is superior to an extract based ointment. If clinically and statistically outstanding results were achieved on an extract based ointment, it is curious as to the results that would be obtained using an ointment made from the fresh root.

The clinical implication of this study is applicable to both herbal medicine practitioners and massage therapists, especially sports medicine practitioners.