Acute treatment of inversion ankle sprains: immobilization versus functional treatment

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CRD summary
This review, which evaluated the effect of immobilisation versus early functional treatment for the treatment of acute lateral ankle strains, concluded that there is a trend towards an earlier return to pre-injury activity in patients undergoing early functional treatment over immobilisation. Weaknesses in the review methodology, together with differences amongst the included studies, mean that the reliability of the authors’ conclusions is unclear.

Authors' objectives
To assess the effect of immobilisation versus early functional treatment on time to return to pre-injury activity after acute lateral ankle strains.

Searching
PubMed (inception to December 2005) and EMBASE (search dates not reported) were searched; the search terms were reported.

Study selection
Study designs of evaluations included in the review
Randomised controlled trials (RCTs) were eligible for inclusion. Follow-up ranged from 3 months to 3.8 years.

Specific interventions included in the review
Studies comparing immobilisation with some form of early functional treatment were eligible for inclusion. A range of early functional treatments were used (early motion, bandage, tape, brace, air stirrup, aircast) over different durations (9 days to 5 weeks).

Participants included in the review
Studies of patients receiving acute treatment for inversion ankle sprains were eligible for inclusion.

Outcomes assessed in the review
There were no inclusion criteria relating to the outcomes. The main outcome was time to return to pre-injury activity. Secondary outcomes involved residual subjective instability, recurrent injury and patient satisfaction.

How were decisions on the relevance of primary studies made?
Two reviewers independently screened studies for relevance.

Assessment of study quality
Two reviewers independently assessed the studies for methodological quality. Studies were excluded if less than 80% of the patients were available for follow-up.

Data extraction
The authors did not state how the data were extracted for the review, or how many reviewers performed the data extraction. For each study, outcomes relating to return to work, subjective instability, re-injury and patient satisfaction were extracted to calculate relative risks (RRs) and corresponding confidence intervals (CIs).

Methods of synthesis
How were the studies combined?
Pooled estimates of RR were presented. No details were reported on how these were derived.

How were differences between studies investigated?
Differences in some study characteristics were shown in the tables and discussed in the text.
Results of the review
Nine RCTs (n=920: 428 randomised to immobilisation and 492 to early functional treatment) were included in the review.

The included RCTs were not assessed against published validity criteria and the authors did not report on publication bias.

Five studies reported the percentage of patients able to return to work or sport. When data were pooled for 414 patients, the RR for functional treatment versus immobilisation was 1.06 (95% CI: 0.98, 1.15). The RR for subjective instability ranged from 0.50 to 1.68 for the functional treatment group versus the immobilisation groups, and when data were pooled for 477 patients (5 studies) the RR was 1.01 (95% CI: 0.72, 1.42). The RR of re-injury for functional treatment versus immobilisation ranged from 0.5 to 1.26 and the RR in a pooled group of 598 patients (6 studies) was 0.81 (95% CI: 0.58, 1.12). Pooled data (2 studies) yielded an RR for patient satisfaction of 0.60 (95% CI: 0.30, 1.18) for functional treatment versus immobilisation. None of these results represents a significant difference between treatments.

Authors' conclusions
The review demonstrates a trend towards an earlier return to pre-injury activity in patients undergoing early functional treatment over immobilisation for the treatment of acute lateral ankle strains.

CRD commentary
The authors of this review clearly defined the research question in terms of the intervention, outcomes and trial design. The search terms were reported but language restrictions were not. Since unpublished data were excluded, publication bias cannot be ruled out and the authors did not report a formal investigation of publication bias. Methods to reduce error and bias in other stages of the review process were not reported.

The authors' conclusions regarding the effectiveness of functional treatment over immobilisation may be unreliable for several reasons: publication bias is possible; the number of patients in the included studies was small; details of the review procedures were inadequately reported; and the variation in type and duration of immobilisation and in the mode of functional treatment employed suggests that there was heterogeneity amongst the selected studies and between study results (though no statistical testing was reported). This invites doubts over whether the pooling of these studies is appropriate and the results should be interpreted with caution.

Implications of the review for practice and research
Practice: The authors did not state any implications for practice.

Research: The authors suggested that future investigations of the acute treatment of inversion ankle sprains should evaluate various methods of early functional treatment with the goals of hastening return to activity and decreasing re-injury and subjective instability.

Funding
Not stated.

Bibliographic details

PubMedID
17279044

DOI
10.1097/BLO.0b013e31802f5468
Indexing Status
Subject indexing assigned by NLM

MeSH
Ankle Injuries /therapy; Humans; Immobilization; Joint Instability /therapy; Patient Satisfaction; Recovery of Function; Sprains and Strains /therapy; Treatment Outcome

AccessionNumber
12007000633

Date bibliographic record published
07/01/2008

Date abstract record published
03/11/2008

Record Status
This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.