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Custom foot orthoses for the treatment of foot pain: a systematic review

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Introduction

Foot pain affects approximately one quarter of the population at any given time [1,2], is disabling in nearly half of these cases [3] and can impair mood, behaviour, risk of falls, self-care ability and quality of life [4-7]. Custom-made foot orthoses are hypothesised to alleviate foot pain by reducing the biomechanical stress applied to injured tissues [8,9]. We aimed to systematically review the effectiveness of custom-made foot orthoses for the treatment of all types of foot pain.

Methods

The following databases were searched up to June 2007: Cochrane Central Register of Controlled Trials (The Cochrane Library Issue 2, 2007), MEDLINE (from January 1966), EMBASE (from January 1980), CINAHL (from January 1982), and the Physiotherapy Evidence Database (PEDro). Authors of included trials and known researchers in the field were contacted and the reference lists of included trials were checked recursively. No language or publication restrictions were applied. All randomised controlled trials and controlled clinical trials evaluating custom foot orthoses for any type of foot pain were included. Outcomes assessed included quantifiable level of foot pain, function, disability, health-related quality of life, participant satisfaction, adverse effects and compliance. Two reviewers independently selected trials and rated methodological quality. Data were extracted by one reviewer and independently crosschecked by two other reviewers. Study authors were contacted to provide additional information as required. Data were analysed separately for different diagnoses of foot pain and follow-up timepoints.

Results

Eleven trials involving 1,332 participants were included. Five trials evaluated custom foot orthoses for plantar fasciitis, three for foot pain in rheumatoid arthritis and one each for foot pain in pes cavus, hallux valgus and juvenile idiopathic arthritis (JIA). Comparisons to custom foot orthoses included sham orthoses; no intervention; standardised interventions given to all participants; non-custom (prefabricated) foot orthoses; combined manipulation/mobilisation/stretching; night splints; and surgery. Follow-up ranged from one week to three years. Custom foot orthoses were clearly effective for painful pes cavus (Number Needed to Treat [NNT]:5) and rearfoot pain in rheumatoid arthritis (NNT:4). Custom foot orthoses were also effective for foot pain in JIA (NNT:3) and hallux valgus (NNT:6), however, non-custom foot orthoses appeared to be just as effective for JIA, and surgery even more effective for hallux valgus. It is unclear if custom foot orthoses were effective for plantar fasciitis or metatarso-phalangeal joint pain in rheumatoid arthritis. Custom foot orthoses were a safe intervention in all studies.

Conclusion

There is limited evidence on which to base clinical decisions regarding the prescription of custom foot orthoses

for the treatment of foot pain. Current evidence suggests custom foot orthoses produce clinically important improvements in foot pain and related function in some people, but not all. Further research is required to identify the precise mechanism of biomechanical effect and the characteristics accounting for the enhanced responsiveness of some people to custom foot orthoses.

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