



Title	Treatment of Severe Ankle Sprain: A Pragmatic Randomized Controlled Trial Comparing the Clinical Effectiveness and Cost Effectiveness of Three Types of Mechanical Ankle Support with Tubular Bandage. The CAST Trial
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Aim

To estimate the clinical effectiveness of 3 methods of ankle support (below-knee cast, Aircast® ankle brace, and Bledsoe® boot) compared to tubular compression bandage (Tubigrip®) in terms of recovery of function (primary outcome), recovery of normal occupation, (secondary outcome), and avoidance of residual symptoms, eg, recurrent instability; and to measure the cost effectiveness of each strategy, including treatment and subsequent healthcare costs.

Conclusions and results

Optimum treatment for severe ankle sprains is unclear. Treatment options include no intervention, physiotherapy, different types of braces and supports, immobilization, and surgical repair of ligaments. Recent systematic reviews highlight a lack of good-quality evidence to aid clinical decision making. Well-conducted and adequately powered randomized controlled trials (RCTs) are needed to determine the effectiveness of different clinical approaches.

After adjusting for age, sex, and baseline score, the below-knee cast offered a small, but statistically significant, benefit at 4 weeks in terms of pain, foot and ankle-related quality of life (QoL), and the physical component score of the SF-12. Neither the Aircast brace nor Bledsoe boot was statistically significantly or clinically different from Tubigrip. At 12 weeks, and in comparison to Tubigrip, the below-knee cast was statistically significantly better in terms of pain, activities of daily living, sports and QoL. Calculation of effect sizes suggests these benefits were small to moderate, depending on the domain of outcome. The Aircast brace was associated with clinically and statistically significant changes in QoL and the mental component score of the SF-12, but not other domains. We found no difference between treatments in the outcomes at 9 months.

Recommendations

See Executive Summary link at www.ncchta.org/project/1309.asp.

Methods

See Executive Summary link at www.ncchta.org/project/1309.asp.

Further research/reviews required

The role of physiotherapy is not known in these injuries. In view of their poor prognosis in relatively active people, it is important to understand an appropriate regime of exercise and physiotherapy during and after the period of functional support. There are no adequately powered studies of less-severe ankle sprains. In the UK, anti-coagulants are not routinely used in lower limb injury, whereas this is standard practice in most of mainland Europe. More research is needed to determine the risk-benefit of such strategies. The scoring systems used can all differentiate between statistically significant changes in scores, but studies have not been undertaken to determine clinically significant score differences.