Annotated Rehabilitation Evidence Assignment
AT 614: Foundations of Sports Injury Rehabilitation

Boyce SH, Quigley MA, Campbell S. Management of ankle sprains: a randomized controlled trial of the treatment of inversion injuries using an elastic support bandage or an Aircast ankle brace. *Br J Sports Med.* 2005;39:91-96.

Ankle ligament sprains account for 19-23% of all sports injuries presenting to accident and emergency departments. Of those ligament sprains, 90% of them occur as a result of an inversion mechanism. Despite the high incidence, this is no common regimen for their management, with many different treatment options. Therefore, the purpose of this study was to determine the functional outcome of the ankle joint after a moderate or severe inversion injury, comparing standard treatment with an elastic support bandage against an Aircast ankle brace.

Fifty patients that were diagnosed with a moderate to severe ankle sprain were randomly assigned (blocked) into either an elastic support bandage or an Aircast ankle brace group. All patients were given standard RICE principle instructions, analgesics, and crutches. Review arrangements were made for 48-72 hours, 10 days, and one month. The primary outcomes were measured using a version of the Karlsson scoring scale to assess ankle joint functions at 10 days and one month. Secondary outcomes of swelling and pain were assessed using ankle girth and a visual analogue scale at 10 days only.

Seventeen patients in the elastic support bandage group and eighteen patients in the Aricast group completed the study. The results of this study showed that the Karlsson score was significantly higher in the Aircast group than in the elastic bandage group at 10 days (p=.028) and at one month (p=.029). There was no difference between the groups in the secondary outcome measures (swelling, p=.09; pain, p=.07).

Level of evidence was determined with the *AAOS Levels of Evidence for Primary Research Question.* The current study is a lesser quality randomized control trial with 70% follow-up. There was no blinding of the patients or researchers and there was not true randomization of the groups. Levels of evidence are as follows: AAOS: Therapeutic Level II. The strength of evidence recommendations was determined using the SORT. The strength of the study has been given a B based on the limited quality patient-oriented evidence that is conveyed in the discussion.

This study has clinical relevance to the profession of athletic training because as clinicians, we see several ankle injuries. It is beneficial for us to know what intervention works better then the next at decreasing pain and increasing function. For this study, a control group would have made the study more valid and useful, because it would have shown if either intervention was an improvement over no intervention. This study would also be more beneficial if it were to discuss physiologically how each intervention worked and why the Aircast was better than the elastic wrap.

Patients may be interesting in the educational implications of this study because as athletes, they want to reduce pain and return to normal function as soon as possible. As athletic trainers, we should explain to the patient why they are receiving the intervention they are receiving and how it compares to other interventions based on the evidence.