AT614

EBP Annotated Homework 1

Citation: Bleakley CM, McDonough SM, MacAuley DC, Bjordal J. Cryotherapy for acute ankle sprains: a randomised controlled study of two different icing protocols. *Br J Sports Med.* 2006;40:700-5; discussion 705.

The article states the problem is that ice is the accepted treatment for acute ankle sprains even though the strength of evidence supporting cryotherapy is poor. Another problem is that no study has addressed the effectiveness of different protocols for icing. The purpose of the study is to look at how effective cryotherapy is and to compare intermittent cryotherapy with standard cryotherapy. Subjects used had to have a mild ankle sprain within the previous 48 hours before being seen, over the age of 16, negative anterior drawer and talar tilt test, and the absence of any additional injury such as a fracture. Patients were randomized by an independent researcher into first general or sport population and then randomized within those groups into intermittent of standard cryotherapy groups. The primary investigator was blinded to what groups the patients were in until after data collection. Subjects in the standard cryotherapy group used a melting iced water bag applied for 20 minutes every 2 hours for 72 hours. The intermittent cryotherapy group applied melting iced water bag for 10 minutes, took off the bag for 10 minutes and then reapplied the bag for 10 minutes, which was also done every 2 hours for 72 hours. A compliance diary was used to monitor when cryotherapy was performed. Also ankle mobility, calf stretching and proprioceptive exercises were given to both groups and were to be performed once daily for the first week. Ankle function was taken using Binkley's lower extremity functional scale, pain was assessed with a visual analog scale , and swelling was assessed with a figure of eight method. Measures were taken at baseline, 1, 2, 3, 4 and 6 weeks post injury. 89 subjects were recruited who had acute ankle sprains, 19 of which were lost to follow up. Average amount of times iced over 72 hours was 5.7 in the standard group and 5.5 in the intermittent group. Subjects were considered compliant is they iced once a day over the first 72 hours. The study found that ankle function, swelling and pain all improved over time at a significant difference for both groups. The only significant difference found between groups was that pain decreased significantly more at week 1 post injury in the intermittent group compared to the standard group.

The study is a therapeutic study with an AAOS level of evidence of 2 as the study had a lesser quality follow up of about 78%. The SORT strength of recommendation is graded as an A, as the article provided quality patient oriented evidence as pain was taken with a visual analog scale has a high level of repeatability and function was taken with the Binkley's lower extremity reliability, which has good test retest reliability.

The relevance to athletic training is that this article suggests that cryotherapy does work in decreasing pain, function and swelling of acute ankle sprains. Intermittent cryotherapy only has the benefit of decreasing pain more at week 1 post injury when compared to standard cryotherapy. Athletic trainers should use cryotherapy intermittent or standard when treating patients with acute ankle sprains, since it is relatively easy to obtain, doesn't cost a lot, and is easy to apply for 10 or 20 minutes. As for patients the study found that there were no adverse effects from the cryotherapy to their patients in the study, so cryotherapy should cause minimal adverse effects.