Reviewer's report

Title: The effect of taping versus semi-rigid bracing on patient outcome and satisfaction in ankle sprains: a prospective, randomized controlled trial

Version: 2 Date: 24 November 2011

Reviewer: Phillip Gribble

Reviewer's report:

General Comments
This manuscript attempts to compare patient satisfaction and some physical outcome measures in patients with an acute lateral ankle sprain that were given either a tape or a brace treatment. This is an interesting and clinically important question. However, there are some issues with the presentation of the manuscript. There is more detail needed on how the patients were categorized. Also, it doesn’t appear that the sample size met the calculated power analysis presented; but there is no post-hoc power analysis to support. Also, it is not clear what treatments and interventions the patients were given beyond the prescribed ankle support; as well as how the tape application was re-applied over the 4-week period. Also, it is not clear the rationale for applying the ankle support were applied for 4 weeks. Is this longer than expected? Were other supports provided (i.e. crutches)? How much weight-bearing was allowed and how soon after injury? Finally, in future submissions, it would be helpful to provide line numbers in order to communicate about specific sections of the manuscript.

Specific Comments
Page 3, line 2-3: this sentence needs a reference
Page 3, line 6: insert “with” between “equals” and “about”
Page 3, line 7: The term “functional treatment” is used here for the first time. The authors continue to define this as ankle support (taping and bracing). However, throughout the rest of the document, the term functional is used to define self-reported outcomes. Therefore, it is very confusing the way functional is used interchangeably to describe very different things. Please consider using a different term to describe the intervention of ankle support.
Page 3, line 8-10: The authors describe that the most common functional treatment provides superior functional results. Again, confusing the way functional is used to define different purposes. Please revise.
Page 3, line 19: Please define “local complications”
Page 3, line 16-
Page 4, line 2: It might be helpful to present the aims of the study before the hypotheses.
Page 4, line 9: Later on page 5, the authors specify that a PA or junior resident
assessed the injured ankles and assigned a grade. It would be helpful to make a brief mention of this here.

Page 4, line 15-17: A positive anterior drawer is mentioned as important in the evaluation process of ankle sprain severity. However, it is stated in line 11 that patients may or may not have had anterior lateral ankle laxity. Then, in the results, only 3 of the patients included actually had a positive anterior drawer. It seems odd that patients would be classified as having a Grade II or III ankle sprain without clinically presenting with laxity.

Page 5, line 5: It is mentioned that all patients were given advice for rest, ice compression and elevation until their return 5-7 days later. Was care standardized? How was it monitored? Were patients told to refrain from any other intervention? Drugs? Crutches?

Page 5, line 7-9: Grade I ankle sprains are loosely defined, but Grade II and III are not. As these were the patients that were used, this descriptions need to be provided.

Page 5, line 14-19: The tape application is provided. Was this ever re-applied during the 4 week period? If so, how often? What determined need for re-application? Did the patients return to the clinic for re-application?

Page 6, line 1: What specific exercises were prescribed to the patients? How often and how many times were they performed? Who supervised? Were they progressed?

Page 6, line 8: Please define the 5-point scale for pain.

Page 6, line 13: What determined stability on the anterior drawer test? Scale?

Page 6, line 18: Please provide details on electrogoniometer: company/product? Placement on patient? Sampling rate?

Page 7, line 9: In how many cases did missing data interpolation have to be performed?

Page 8, line 6-12: According to the stated sample size, the authors did not meet their calculated sample size to achieve adequate statistical power. Was a post-hoc power analysis performed?

Page 8, line 14-19: In this second paragraph, the authors indicate that 49 patients were in the tape group and 49 in the brace group. This is not consistent with the previous paragraph, which stated that initially 100 patients were included and then 81 patients, and finally 70 patients were included due to various reasons. It is concerning that data are presented on different variables from a varying number of patients. Which patient sample represents the actual inclusion criteria?

Page 9, line 11-12: Two patients were allowed to cross-over. This is concerning that randomizing was not met and this threatens the validity of the presented randomized control trial design.

Page 11, line 6-7: this sentence needs a reference

Page 11, line 17-22: This paragraph states the large percentage of loss to
follow-up. This is concerning to the level of evidence that is being presented here. The authors should provide some comment in the discussion about this beyond noting that it was equally distributed among the groups. Later in this paragraph, the authors state that the sample size still detected statistical significance. While this is true, there is no presentation of the effect sizes or the post-hoc power analyses to strengthen these statistical differences.

Page 12, line 1-9: The authors make mention that the cost of the brace is higher than the tape. It would be helpful to compare to previous work that has examined the cost of bracing for prevention of ankle sprains (see Olmsted-Kramer et al).

Page 12, line 7: Are these monetary costs in US dollars? If so, these values seem quite high for the cost of these interventions.

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Needs some language corrections before being published

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

'I declare that I have no competing interests