Reviewer’s report

**Title**: Heavy-Slow Resistance Training in Addition to an Ultrasound-Guided Corticosteroid Injection for Individuals with Plantar Fasciopathy: A Feasibility Study

**Version**: 0 **Date**: 20 Jun 2019

**Reviewer**: Colette Ridehalgh

**Reviewer's report**: 

Thank you for the opportunity to review this interesting article, which brings us a step closer to understanding potential effective management strategies for the management of this condition. Overall I am happy that this article will be acceptable for publication with some amendments. Whilst there are quite a few comments- most of these are minor changes.

**Introduction**

1. Line 58 "Approximately half of patients referred to specialised clinics may still experience pain 10 years after treatment start and after two years of plantar fascia-specific stretching and wearing insoles, 40% of…"

This sentence is a little unwieldy-could it be split into "Approximately half of patients referred to specialised clinics may still experience pain 10 years after treatment starts. Forty percent of patients still have symptoms after two years of plantar fascia-specific stretching and wearing insoles"

2. Line 60 requires an "and" -Patients with plantar fasciopathy have been found to show greater levels of depression, stress, anxiety and kinesiophobia, AND have limitations in both mobility and health-related quality of life compared with sex- and age matched healthy controls.

3. Line 68 I would like to see a ref for corticosteroid injection being a safe option when it is generally not recommended for many tendinopathies- at least perhaps say something about its potential use as a short term (only 1 injections rather than multiple injection). I know that you all know this literature (and have even contributed to it!) , but I just pulled these out as examples [https://doi.org/10.1177%2F0363546515591266](https://doi.org/10.1177%2F0363546515591266) [https://www.sciencedirect.com/science/article/pii/S0140673610611609](https://www.sciencedirect.com/science/article/pii/S0140673610611609)
If the authors feel that the pathogenesis is such that it is distinctly different from tendinopathy then perhaps some indication of this in reference to justification of injection for this disorder.

4. I wonder if more could be made re the potential benefits of combing these two forms of treatment- do you feel that the reason for long durations of treatment is because people aren't doing exercises due to pain? So the injection may help them to increase exercise? Or are you considering that a combination of the steroids has some form of effect on the pathological processes such that this enables faster healing (I suspect this is unlikely)- I just feel the justification for the combination of these two treatments is a bit lacking for me.

5. Line 110- how was the thickening of the plantar fascia measured and how reliable/valid is this as a measure? Did all participants have to have ALL of the inclusion criteria? Where have these inclusions come from? References are needed here. I know you supply refs overall at the end of this section- but I am particularly interested in the criteria for identifying those with planta fasciopathy and I think they needed to be more explicit in here.

6. Line 123 past tense and other language "They were advised to decrease activities which they (feel) felt caused symptom flare UPS "

7. Line 124 " slowly progress back into former activity levels guided by their symptoms". Not clear to me what this means

8. I felt the exercise prescription was a little unclear. Perhaps start with what they had to do at the beginning of the programme after the injection. So not to start exercises until 24 hours after the injection. Then what to do for the first 3 weeks- I was confused about the progression to 8RM after 3 weeks, when you started the whole section with exercises had to be done at 8RM. So this section just needs a bit of re-jigging for clarity.

9. Was there really no guidance on numbers of sets- would this not give you potentially very disparate groups? Some doing 1 set, others doing 20 sets? This obviously isn't a deal breaker, it just seemed a bit odd to me. I notice that this isn't actually recorded in the results either.

10. So if given a heel cup- is the study design not a 3 fold intervention? Injection, HSR and heel cup?

11. Not clear what you mean by the word "content" in this sentence "expectations to the content and acceptability of performing"
12. Why did you only measure heel pan for 1 week after the injection? May be worth a brief sentence to explain this.

13. Do you have MCID for VAS and GROC?

14. I appreciate that numbers for feasibility is difficult- but there is some published literature re numbers for sample size for trials e.g. https://doi.org/10.1177%2F0962280215588241

15. Is there any clear rationale for your justification for your cut off points for a feasible study? 10/20 considering treatment as acceptable seems quite a low number to me. I think some justification- even if it is that you all met, discussed a minimal measure of success- ideally based on some literature (if possible) would help.

16. Line 246- if starting a sentence with a number- can this be written in words? Boring academic convention I know, but that is convention! :)

17. I was a little bit confused about the flow of participants- 32 initially contacted- got down to 20 but then another 12 contacted you- and you lost another so not clear where the final 20 came from. If you included the extra 12 (minus those lost to follow up and lost diaries) then you should have been left with 26. I suspect it is just a lack of clarity- but could you please re-look at that section?

18. Line 279 you added a second injection to 4 participants- you state what happened to two of them, but not the remaining two.

19. Table 3- please check that data lines up appropriately for all parameters (might be my eyes, but IPAQ walk looks wonky)

20. Label for Fig 1 not with figure (may be due to instructions of where to insert figure)- so ignore if this is the case

21. I am finding your change in scores within table 3 confusing- where there is a decrease in the number from baseline to 4 weeks etc you report this as a positive change and where there is an increase, you report this as a negative change- I may not be a mathematician, but this seems a bit odd to me. If you showed an increases in ROM from 150 degrees to 180 degrees, you would report this as 30 degrees, not -30 degrees, and vice versa.

22. I found interpreting the IPAQ scores difficult- I wonder if it would be worth stating what an improvement would be - it seems to me from looking briefly at this outcome measure) that you would want an increase- as the cumulative score for walking is 3.3 * walking
minutes * walking days at work and so improvement would be an increase in score not a decrease (which your data seems to show).

23. Discussion- I agree compliance is such an essential aspect of any study looking at efficacy of exercise interventions- you mention other interventions, but don't reference to other literature- I think this is important here.

24. Line 326 "While we did not compare the combination to either of the individual interventions, it appears that the injection may hamper the effect of exercises similar to what has been observed in both lateral elbow tendinopathy and gluteal tendinopathy"- this seems really very premature to make such a statement- personally I think this needs to be removed.

25. Line 332- I don't think you can say that differences in your findings compared to Johannsen's is because you didn't follow up at 3 months- you only had one group and you had 20 participants- so again I just feel this is going beyond your results.

26. Line 340 as you only collected pain score for 1 week after the injection, I think you again need to be careful of stating that the greatest pain scores reduce after 4 weeks. Yes some of your measures were better after 4 weeks, but unless you explicitly link perhaps to the FHSQ pain, this is over extrapolating for me. If you do this though- I think you need to be careful of not comparing to the NRS scores from baseline to day 7 post injection - they are different measures.

27. Line 350- sorry I am not following this section re SMS and start of exercise

28. Line 354- it is not just the length of study which makes it difficult to compare to other studies- it is that this is a feasibility study with only 20 participants- so I think this just needs to be removed as a limitation- that is the point of a feasibility study.

29. Just a thought- normally I would expect some form of comment on the proposed sample size of a larger prospective study (usually one of the aims of a feasibility study)- but I suspect that this is because this is a preliminary study to another feasibility study where you will actually recruit to 2 to 3 arms of a RCT. I wonder if you just need to state this somewhere for clarity.

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