Reviewer's report

**Title:** Electrical Stimulation for Chronic Non-specific Low Back Pain in a Working-Age Population: A 12-Week Double Blinded Randomized Controlled Trial

**Version:** 1 Date: 12 January 2013

**Reviewer:** Arnaud Dupeyron

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Electrical Stimulation for Chronic Non-specific Low Back Pain in a Working-Age Population: A 12-Week Double Blinded Randomized Controlled Trial

The goal of the present study is to demonstrate the efficacy of H wave electrotherapy in chronic low back pain condition.

This study is very interesting and the design is appropriate. The expected findings will be useful for clinicians. However the chapter ‘method’ is hard to read and needs to be reorganized. The abbreviations should be removed.

Major Compulsory Revisions:

MCR1: In the introduction, a summarized literature review on the efficacy of electrotherapy is lacking. After reading your literature review, it should be clear to the reader that the research question you are asking is relevant (functional improvement induced by electrotherapy).

MCR2: The chapter ‘method’ is hard to follow. Perhaps assessments can be displaced in a chapter ‘procedure’ and the description of ‘objective measure’ in the chapter ‘outcome measure’. ‘Compliance’ and ‘discontinuation’ can be included in the chapter ‘outcome measures’ as ‘other measures’. In the same way, ‘usual care’, ‘rescue medication’, ‘interventions not allowed’ can be included in the chapter ‘intervention’ as ‘other interventions’.

MCR3: It would be interesting to add expected findings.

Minor Essential Revisions

Abstract

MER 1: The number of subject is different in the text (38/32). Please check.

MER 2: Expected findings can be displayed at the end of the abstract.

Introduction:

MER 3: (cf MCR1). Overall it’s difficult to understand why electrotherapy is interesting for chronic low back pain. Authors should probably explain what is the gain expected with electrotherapy (back pain, leg pain, function, activities).

MER 4: For the first paragraph, the reader suggests to keep only the last sentence (Despite the relative ….treat). The references are lacking in the second paragraph.
MER 5: The last sentence of the introduction should be introduced earlier to explain the goal of this trial.

MER 6: The reader suggests to recall the recommendation that LBP patients must stay active and that electrotherapy fits with that specific goal.

Method:
MER 7: All spinal surgery should be considered as exclusion criteria.

MER 8: “Sham device…treatment”: if electrical current can be perceived by patients it cannot reasonably be considered as sham treatment. The reader suggests to argue this issue more. The authors should try to test their blinding effect after the experiment. Please check existing references for blinding effect in electrotherapy.

Outcome measures:
MER 9: The main criterion is ODI. The authors should better explain in the introduction why they use this criterion.

Assessments:
MER 11: “Comparable contact time will be used to minimize treatment bias”: like a case control study? between groups? The authors should explain this sentence.

MER 12: The description of the objective measures can be included in ‘outcome measures’ or ‘materials’. For each measure, the authors can explain what kind of material is used, how the signal is processed, how the data are collected. In the previous chapter, the authors have already talked about timing assessment and questionnaires and the repetition is confusing. According to the reader, the presentation in the abstract is clearer. (cf MCR 2). A table with the outcome measures and the assessments would be interesting.

MER 13: For the accelerometer, more details are needed (recording time, analysis…) to explain how acceleration can provide information on physical activity.

MER 14: A figure for the car pushing test would be interesting.

Treatment protocols
MER 15: It could be interesting to know the current features of H Wave to compare with TENS.

Statistical analysis
MER 16. “MIt is likely…groups”: please explain.

MER 17: Co variates appear here but are not described previously. Please check.

Discretionary Revisions
DR1/abstract: Assessments are displayed two times
DR2/Introduction: ‘PENS’ is probably Peripheral ENS?
DR 3/introduction: Why two references are situated at the bottom of page 4?
DR 4/ Method: ‘IRB’ needs clarifications.
DR 5/ Assessment: OTC? PO QID?
DR 6/ Statistical power: A reference seems to lack here (line 2).
DR 7/ Statistics: The ‘multiplicity’ should be replaced in the chapter ‘primary analysis’.

**Level of interest:** An article of importance in its field

**Quality of written English:** Acceptable

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

**Declaration of competing interests:**

No competing interest