Reviewer's report

Title: Physiological responses to low-force work and psychosocial stress in women with chronic trapezius myalgia.

Version: 1 Date: 12 March 2009

Reviewer: Lars L. L Andersen

Reviewer's report:

General:
The present study investigated muscle activity and sympathetic activity in women with and with trapezius myalgia. The study has strong and well-described methods, and provides relevant new knowledge to the field. It is shown that increased sympathetic tone is not linked to trapezius myalgia (at least with the present methods). A particularly interesting result was that trapezius EMG was higher during uninstructed rest (but not when subjects we instructed to fully relax). Of course we don’t know whether this was also the case before pain developed, but it may explain that these women develop pain in the long run. Could the authors come up with some speculations in the discussion as to why trapezius activity was higher (since it appears that sympathetic tone was not the reason).

Specific comments:
p.2. Abstract: last paragraph: Please specify “increased muscle activity during uninstructed rest…” or something like that

Introduction:
P.3. paragraph 4: In relation to the pain-adaptation model you may want to cite a recent study on trapezius myalgia from the group of Gisela Sjøgaard, showing decreased activity specifically of the trapezius muscle during maximal voluntary isokinetic contraction (Andersen et al., 2008)

P.3. paragraph 6: regarding reference 21: refer to the original article – if it exists – rather than the ph.d. thesis

Methods:
P.5. paragraph 2: Could you further specify “several palpable tender spots” …. How many spots need to be tender to have the diagnosis?

P.5. paragraph 3: Were exclusion criteria assessed by questionnaire, interview, or examination?

P.7. para 5: I am curious why the authors chose the NRS scale instead of VAS. Could you write 2-3 lines in the methods on the advantage compared with VAS?

P.8 para 3: The SENIAM recommendations are now available online, it may be
worthwhile to provide an internet link

P.8 para 4: please provide the name/brand/manufacturer etc. of the wireless EMG datalogger

p.8. para 6: Why was a 6th order butterworth filter chosen? compared to traditionally 4th order. If three 2th order filters were applied to obtain a 6th order filer, this can cause a small shift in the time-domain of the EMG

What was the width of the RMS, i.e. how many msec?

p.9. para 1: How often did this occur?

P.10 para 3: For the mixed model with autoregressive structure you used two different approaches, the AR(1) and the ARMA(1,1). I am curious, what was the reason for testing the model with ARMA(1,1)?

Did you perform adjustments of the p-values for multiple comparisons (e.g. Bonferroni, Tukey or the like?)

Did you check with a statistician that it is valid to perform correlations using two contrast groups? alternatively, did you try to make the correlations solely for MYA?

Results:
Please provide F-values next to the p-values of the main effects throughout the results section

p.12 para 4: Group effect was 1.7 uV. By eye, the group effect looks much larger (Fig. 3), please re-check these results.

Also, please refer to fig.3 in the EMG section

Discussion:
In general, there are some repeats from the results section, which is a bit redundant. The authors should consider looking through this again.

p.15 para 3: Trapezius EMG was higher during uninstructed rest, but not when subjects we instructed to fully relax. I find this highly interesting, and think you should do some speculations on to why this is so. Potentially, this could explain why these women develop pain (with the limitation that we did not know their EMG pattern before they got pain).

And what can we do to counteract this phenomenon? E.g. should they be reminded several times a day to relax their muscles (since they can relax their muscles when told to)? Feel free to put in some speculations on this part in the manuscript.

p.16 para 6: I think you should consider calculating HRV. Even though it is not obtained during standardized conditions, it is obtained during similar conditions for CON and MYA. Thus, you can compare between the groups during the specified conditions. The time periods during the different tasks are sufficient to calculate HRV for each separate condition.
Figures:
Please provide the relevant information in terms of significant differences (*).

Table 2: Spell out the abbreviations (e.g. below the table)

Table 3: Are P-values adjusted for multiple comparisons?

Reference List


Level of interest: An article of importance in its field

Quality of written English: Acceptable

Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.

Declaration of competing interests:

I declare that I have no competing interests