Author's response to reviews

Title: Altered motor control patterns in whiplash and chronic neck pain.

Authors:

Astrid Woodhouse (astrid.woodhouse@ntnu.no)
Ottar Vasseljen (ottar.vasseljen@ntnu.no)

Version: 3 Date: 16 May 2008

Author's response to reviews: see over
Dear Editor,

Thank you for considering our manuscript “Altered motor control patterns in whiplash and chronic neck pain”. Please find enclosed a revised version of the manuscript. The reviewers had some concerns which are addressed in the revised version and commented on below:

1st reviewer, Dr Robert Ferrari, had no apparent concerns.

2nd reviewer, Dr Bernadette Murphy:

1) Grammatical errors have been corrected as recommended
2) Aim of the study is now stated also at the end of the background paragraph in the abstract.
3) It is our view that critical limitations are addressed, and there are no notions by the reviewers to specific limitations that need addressing.
4) The referee has objections to the following two sentences in the introduction:
   “While this points to centrally mediated somatosensory alterations in WAD, it is not clear whether motor areas are also affected. If such changes exist, altered motor control or kinaesthetic sense should be present in WAD, which would also provide important information for clinicians.” This paragraph is formulated in a way that could indicate that the authors define kinaesthetic sense as a motor area function, not a somatosensory function. Although the complexity of sensorimotor integration in CNS makes it difficult to separate the two, we acknowledge that kinaesthetic sense principally has been taken to reflect somatosensory function. The last sentence has been revised (pg. 2, paragr. 1, lines 10-14).
3rd reviewer, Dr Tamara Prushansky:

1) ROM-variability was expressed as the standard deviation (SD_{mean}) of three repeated trials in this study. SD_{mean} does not relate to the size of the mean ROM. An alternative that would normalize the variation to the mean ROM is the coefficient of variation (CV). However, the small variability of the nominator (SD) relative to the large variability in the denominator (mean ROM) would make the CV heavily depend on the latter and thus add little information beyond that of mean ROM, and blur the variability in maximum ROM. In our study, a correlation analysis was performed (but not published in the original manuscript) between mean ROM and SD_{mean} values to investigate whether SD_{mean} was dependent on the “size” of ROM and thus needed to be normalized. There was absolutely no correlation between the two variables in any of the study groups. Variability in maximum ROM can thus be interpreted by the SD irrespective of the “range” of maximum ROM. This comment is now included in the discussion (pg. 17, line 7-16).

2) Prushansky remarks that the study lacks innovating results, which is not supported by the two associated reviewers. In our view, the main innovating and important result is the effect of long lasting pain on conjunct motion (or “freedom of movement), a finding that was irrespective of the traumatic or non-traumatic onset of the pain. Prushansky implied that this effect could be explained by the decrease in primary ROM in the two pain groups. However, primary ROM was controlled for in the statistical analyses, as already described on pages 11 and 13.

3) Prushansky finds that the limitations of the study are insufficiently discussed, but does not identify specific issues. No action taken

Sincerely yours,

Astrid Woodhouse

Ottar Vasseljen