Reviewer's report

Title: Subgrouping patients on the basis of their individual course of low back pain over a six month period

Version: 1 Date: 9 February 2011

Reviewer: Steven Kamper

Reviewer's report:

• The manuscript attempts to divide a cohort of patients with low back pain into subgroups based on the number of days they report pain/week over a six month period. These subgroups are linked to clinical features that can be assessed at baseline. For the most part the manuscript is clearly written and presented.

• In light of the fact that subjects are categorised on the basis of symptomatic course I have difficulty making sense of the decision to include all subjects regardless of duration of symptoms. Given that symptom severity drops sharply after initial assessment in 3 of the 4 clusters and the study design does not allow us to conclude that changes in symptom level are due to the intervention, how do we know where (temporally) a subject is along the course of their condition when they first attend treatment? I question whether an inception cohort should have been recruited for this study.

• The study lacks a coherent message with respect to how membership of the individual clusters can be predicted.

Major compulsory revisions

Methods

1. Please justify the decision to use only patients that supplied >80% of their data.

2. The authors used linear regression lines to describe two stages of course for each cluster, did they ensure the data met the assumptions associated with this analysis?

Results

3. Please state how many subjects were recruited to the study.

4. Please provide information about the baseline characteristics of the subjects included in the analysis and those who dropped out/were excluded for comparison.

5. Given that approximately 1/3 of subjects were excluded from analyses perhaps a sensitivity analysis could be conducted to determine if inclusion of these data impacts the findings.

6. Pg 12-13, the two slopes describing the course of cluster 1 look to be very similar, did the authors conduct a test to determine whether they are actually different or likely different just by chance in this sample?
7. Pg 13, paragraph 2; I am puzzled by the finding that such a high proportion (80%) of cluster 1 described themselves as definitely improved during the period that the mean scores on the main outcome measure are largely unchanged. This may suggest that the outcome chosen is not clinically meaningful to the patients. This finding needs to be discussed.

8. Pg 13, paragraph 4; the finding that the cluster with the highest initial pain rating had the best prognosis is contrary to the vast bulk of prognostic research into painful musculoskeletal conditions. This raises the question of the meaningfulness of the selected outcome, alternately it may suggest a more serious problem with the analysis. The authors should discuss the reason for this diversion from previous research findings in some depth.

9. Pg 14, last paragraph; I miss a summary of how the clusters can be identified on the basis of baseline characteristics. This paragraph states only that some clusters are different from some others in age and initial pain intensity. It seems the study lacks a worthwhile message in terms of how membership to the clusters can be predicted.

Discussion

10. Given that approximately 1/3 of the subjects originally recruited were excluded from the analysis, there is reason to be cautious about the reliability of the findings. Please provide discussion of this in a limitations section.

Table 1

11. Please add the duration of pain to the table.

Minor essential revisions

Methods

12. Pg 6, paragraph 1; Please reword or explain what is meant by the sentence, “The external validity of this sample…”.

Discussion

13. Pg 15, paragraph 3; the authors state that cluster 4 had longer standing pain, this wasn’t reported in the Results.

14. Pg 15, paragraph 3; Please reword the final sentence of this paragraph for clarity.

15. Pg 16, paragraph 2; please reword the final sentence of this paragraph, it is unclear what the authors mean.

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

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