Reviewer's report

Title: Minimal clinically important change for pain in patients with nonspecific neck pain.

Version: 1 Date: 3 September 2007

Reviewer: Henrica C de Vet

Reviewer's report:

General

This is a sound paper with sound methodology, but a large number of sloppy descriptions, unclarities, contradictions and inconsistencies, but these can be repaired. I will indicate them as much as possible.

Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

I suspect an error in the calculations somewhere. This comes into expression at page 9 and in Table 3.

Page 9, last paragraph: it is very difficult to explain why using the ROC method, larger differences were found between sub acute and chronic NP patients, than with the MC and MDC method, because from theory one would expect it the other way around (See de Vet et al. 2007). I have also doubts on the soundness of the data and calculations because the difference between the optimal cut off point and the MDC value is so different. In theory, if the sensitivity and specificity are around 95%, the ROC method and the MDC method should provide almost the same value, because the MDC is (indirectly) defined as specificity 95% (for, 95% of patients not importantly improved have a value below the MCIC value), and the optimal cutoff point is where the % of misclassification is minimal, i.e. where sensitivity and specificity are almost equal. In Table 3 it can be seen that you have almost this situation, but in that case the MCIC determined by the ROC method and the MDC should almost be equal. The difference between 1.5 point (ROC method) and 4.0 is much too large. Please check your data.

The distinction in subgroups is not always clear. Eg in the abstract, line 18: patients with or without AP, and for NP and for AP. Is MCIC also determined for arm pain, or for neck pain in the subgroup of patients who also have arm pain?

Page 10, line 2: ‘… MCIC for local and referred pain are similar’. Does this mean that for the whole population and the subgroup with comcomitant arm pain the MCIC were similar, or is really the MCIC for arm pain assessed?

Abstract, line 5 it says that no MCIC for NP is available. There has been a publication by Sim et al. in Clin J Pain 2006; 22: 820-826 about the MCIC of the Northwick Park Neck Pain Questionnaire.
I would suggest to label the optimal cut off point of the Receiver Operating Curves (not operant curve) as ROC, as is usually done, and not OCP.

The clarification of the three methods used on page 4 is very sloppy. The mean change method takes the mean of a special category of patients. The MDC method looks only at non improved patients and draws the cutoff point where 95% of the patients have a lower score. Note that this is not the same as: “the threshold below which most patients deny any improvement”. Because below that point there are a large number of patients who do say they are improved on the anchor (see anchor based MIC distribution by de Vet et al QOL 2007; 16:131-42).

Page 7, last paragraph: the way the substraction is described here ‘improvement’ leads to a positive value. Note that throughout the manuscript the values of the mean change score are presented as positive values (also in Table 2- 4), while the values of the ROC method and MDC are presented as negative values. They all should be positive if the 12 weeks score is subtracted from the baseline score (more severe pain, thus higher value).

Page 8, line 6: I doubt whether the 95% CI of the MDC should be calculated using a chi square distribution.

Page 8, forelast paragraph: here is described for which populations the MCIC for neck pain is determined, which is the total population and for the subgroup of patients who reported concomitant arm pain at baseline. Is that right? Or is the MCIC for arm pain also assessed? This is suggested in the abstract. Avoid the term ‘first and later set of analyses’, as this comes not to expression in the data analysis and data presentation later on.

Page 8, last paragraph: the patients are divided in subacute and chronic patients. I would restrict the analysis of MCIC to these subgroups. Analysis on tertiles of duration do not have clinical meaning. If you want to do an analysis on the neck pain with very long duration I would suggest to do an analysis of chronic patients with more and with less than one year duration. The reference [8] in this paragraph can be left out.

Page 11, last sentence: It is suggested that a different definition is used for specific purposes and context. Please give examples in which situation you would choose for which method.

Page 12, 2nd paragraph: the need for assessment in MCIC for acute patients is said to be not important in the middle of the paragraph, and ‘should be explored’ in the last sentence. This sounds contradictory.

Page 12, 3rd paragraph: you might also comment on why the category of patients who reported to be ‘much improved’ was chosen as minimally important change. Some authors choose the category of ‘slightly improved’ as minimally importantly changed.
Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

In abstract, line 13 : I think that RP should be AP

Introduction, line 1: minimal change in the measurement instrument instead of minimal variation in symptoms. Because you are interested in the change and not the variation; and not all characteristics that are measured are symptoms.

Page 5, last sentence: referred arm? Pain

Page 6, line 1: instead of ‘set at 14 days and 90 days’, ‘set at between 14 and 90 days and longer than 90 days, respectively’.

Page 6, line 4: should LBP be NP?

Page 7, line 2: follow-up

Page 7, line 8 and 11: clinical status or health status: please be consistent

Page 8, line 4 from below: I prefer the term ‘subgroup analysis’ instead of ‘sensitivity analysis’.

Page 9, line 9: 3 months and 12 weeks is used interchangeably. Please, stick to one of these terms.

Page 9, third paragraph: also here it is suggested that MCIC for AP is being assessed.

Page 9, last paragraph: the term RP appears (also in other places in the manuscript). I think this should be AP.

Page 11, line 8: ‘.. was slightly different …’. Please specify compared to what?

Page 11, line 10: a large MC size? Do you mean MCIC size, or MCIC values assessed by the MC method? Also in the rest of this paragraph the terminology is sloppy. (MCS?)

Page 12, line 9,10: references are in superscript.

Discretionary Revisions (which the author can choose to ignore)

**What next?**: Accept after minor essential revisions

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

**Quality of written English**: Acceptable

**Statistical review**: Yes, and I have assessed the statistics in my report.

**Declaration of competing interests:**
I declare that I have no competing interests