Reviewer's report

Title: Management of Headache Disorders: Design of a Randomized Clinical Trial [NCT00298142]

Version: 2 Date: 19 February 2007

Reviewer: Alex Burdorf

Reviewer's report:

General

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

Rationale for RCT
The rational could be strengthened by included the systematic reviews from Cochrane, I identified at least one suitable review.

Patients
Please specify whether the intervention is aimed at chronic/recurrent or subacute patients, the 2 months period is rather at odds with current definitions.

Intervention
Lacks a detailed description on how administered (2x/week, sessions of 20 min ?), what content (what is exercise therapy ?), etc. The section contains statements on effectivness, literature etc that should be included in the introduction rather than the description of the intervention per se.

Outcomes
The GPE score is only mentioned at follow-up !

Randomization
Suddenly, one reads that a pre-stratification is being used, that was not taken into account in the power analysis. When this is an important prognostic factor, one can analyse its influence on effectivness of the intervention, but this may require a larger sample size. When one is simply interested in adjusting for potentially confounding, then this pre-stratification is in general not a very good idea (may result in underestimation of the variance).

Blinding
A protocol needs explicit description of blinding procedures

Prognostic study vs RCT
A prognostic study may be included in an RCT, but this will raise specific questions that need to be addressed:
- selective selection and participation
- interference with intervention
- relevance of prognosis for effectivness of intervention
- sample size (e.g. 4 or 5 prognostic factors will easily need 100 subjects)

Power analysis
The statement that a power analysis on a longitudinal study with dichotomous endpoints (i.e. logistic regression) cannot be conducted is a too crude remark. See eg Harrell et al Stat Med 1996;15:361-87 and Steyerberg et al Med Decis Making 2001:21:45-56.

Statistical analysis
A section should be included on the intended analyses, eg intention-to-treat vs per-protocol analysis ?, Subgroup-analyses stratified by likelihood of good prognosis ? How is dealt with differences in baseline characteristics ? A priori inclusion of important prognostic factors in the effectiveness analysis ?
Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

Discretionary Revisions (which the author can choose to ignore)

**What next?:** Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions

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

**Quality of written English:** Acceptable

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

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