Reviewer's report

Title: Cognitive function and quality of life in multiple sclerosis patients: a cross-sectional study

Version: 2 Date: 25 September 2010

Reviewer: Christoph Heesen

Reviewer's report:

Major Compulsory Revisions
1. However, the questions arises how a quality of life scale with 2 items on cognitive symptoms might correlate to a set of 8 cognitive tests for which the relevance for daily living is not clear. An additional measure of perceived cognitive dysfunction in daily life as the MSNQ would have been helpful to obtain an idea if the lack of a correlation is: 1. due to lack of awareness on the patient side, 2. lack of sensitivity of the Musiqol to cognitive dysfunction. Other Qol tools have shown to differentiate patients according to different levels of cognitive impairment and as well as studies have shown that cognitively disabled patients are able to give consistent answers to questionnaires (Gold 2001, Gold 2003).

2. From the data presented further questions on the validity of the Musiqol emerge. Why is the correlation of ADL with EDSS so low (.40)? Why does coping and psychol. well-being not correlate with working status?

However, the problem of having a real estimate for the impact on daily live from a cognitive test result as the Rao battery is an unsolved issue.

Authors should discuss these problems.

3. The Musiqol offers only a psychological wellbeing scale, 2 of the 4 items refer to cognition, the others to mood. Therefore, the subscale seems not a suitable comparator for cognitive performance.

4. The results section offers multiple tests without reporting a Bonferroni correction for significance levels. Many of the marginally significant correlations might thus be random effects. Furthermore, these large tables are difficult to read and should be condensed.

5. Langauge needs substantial improving, some examples:
Page 3 abstract studies shown from .. (wrong verb)
Page 7 “wrong qol” – what is this?
Page 11 iii) the passsation requires? What is the meaning.

Conclusion: the relationship between cognitive function and qol is not contradictory, maybe studies are. The relation might be described complex instead.

Minor Essential Revisions
1. Page 7 results: in which time-frame were patients enrolled?
2. From which settings (academic hospitals?) where patients enrolled

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

**Quality of written English:** Needs some language corrections before being published

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

**Declaration of competing interests:**

'I declare that I have no competing interests'