Reviewer's report

Title: Ideal timing to initiate interdisciplinary inpatient stroke rehabilitation: an exploratory study.

Version: 1 Date: 8 September 2006

Reviewer: Daniel Bereczki

Reviewer's report:

General
The paper tests in a retrospective analysis if the outcome of post stroke intensive inpatient rehabilitation depends on the period between stroke onset and admission to a rehabilitation ward. The results challenge the traditional view that outcome is better with earlier rehabilitation. The paper also emphasizes the problem that the lack of capacity of rehabilitation wards extends the unnecessary stay of stroke patients at acute stroke units.

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

1. Although it is clear that rehabilitation in an acute stroke unit differs from rehabilitation in a specialized rehabilitation unit, the most important confounding factor is the initiation of and the intensity of rehabilitation in the acute care. If all patients had their rehabilitation started in the acute phase i.e. the day or in the next few days after admission for stroke, it is no wonder that it does not make too much difference if rehabilitation in the post acute phase continues on a rehabilitation ward within 20 days or between 40-70 days after stroke onset. Actually, all patients in such a setting get very early rehabilitation. The only difference among the 3 groups is the timing of change of rehabilitation setting, and not the time of initiation of rehabilitation. This is mentioned but should be made more clear in the paper. It will help if data were given comparing intensity of rehabilitation in the acute stroke unit and in the rehabilitation unit. Currently it is only mentioned that physical therapy, occupational therapy, speech and language therapy are applied both at the acute care settings and at the rehabilitation wards. In the current form of the manuscript the paper can be misleading and has the message that there is no need to hurry with discharging the stroke patient to a rehabilitation ward. This might be true if there is active rehabilitation in the acute setting, but can be a completely false message for hospitals where e.g. due to lack of resources rehabilitation can not be initiated for acute stroke patients within the first few days after stroke onset.

2. Of the 534 (or 418) stroke patients, only 120 were included in the analysis. This decrease in the number of subjects available for analysis decreases the power. I recommend to perform a sensitivity analysis and use all patients available, instead of trichotomizing, use the onset-admission interval (OAI) as a continuous variable, use the FIM score as the outcome measure and perform a multivariate analysis including gender, stroke severity (e.g. a stroke scale score or level of disability or case mix group on admission) and if possible rtPA use as covariates in the model. I admit that strictly speaking neither OAI nor FIM are really continuous variables, but as OAI can have any discrete value between 0 – 70 and FIM from 0 – 126, these variables could be handled statistically as continuous variables. If this analysis will result in the same conclusion as the currently presented one, we still have to consider the problem mentioned in point 1 above but the results at least could give support for the present conclusions. This analysis seems to be important, as the data in Table 4 suggest a trend of better outcome with shorter OAI: with similar admission FIM discharge FIM is larger in the short OAI group; the median relative change is over 30% in the short OAI group but below 30% in the longer OAI groups; the total efficiency decreases from 0.62 to 0.53 to 0.42 as the OAI increases.

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Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

1. In the abstract an abbreviation appears without definition (FIM). Please, define abbreviation at first occurrence.

2. It should be discussed and justified why the 20 – 40 – 60 days were specifically selected as limits for short, moderate and long onset-admission interval. In several centers stroke patients are kept on the acute
ward for about 3-5 days and sent to rehabilitation wards immediately thereafter. For such settings a 15-20-day admission to a rehabilitation ward is considered late and not early admission.

3. It is stated that “subjects were randomly matched”. The method of randomization should be given, or if it was not a real randomization, more details should be given about patient allocation to the groups.

4. ANOVA is used in data comparison for continuous variables. Before that normality of continuous variables should be checked. If distribution is non normal, then nonparametric tests (e.g. the Kruskal-Wallis ANOVA) should be applied for these comparisons as well.

Discretionary Revisions (which the author can choose to ignore)

1. Page 8: “….scores reports” should be changed to “scores report”
2. Page 11: “This definitively need to be…” should be changed to “needs to be”
3. Page 11: “during these program” should be changed to “during these programs”.

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

Level of interest: An article of importance in its field

Quality of written English: Acceptable

Statistical review: Yes

Declaration of competing interests:

I declare that I have no competing interests.