Reviewer's report

Title: A simple, early assessment predicts upper extremity function after stroke - a prospective cohort study

Version: 2 Date: 31 March 2015

Reviewer: Tina Kaffenberger

Reviewer's report:

The authors address the interesting and clinically relevant question of defining a bed-side test of upper limb function within 1 month after stroke that predicts motor function required for a drinking task up to one year after stroke.

Major Compulsory Revisions:

1. Reporting of results

The authors are using two items of the Action Research Arm Test (ARAT) to predict functional relevant arm function measured with the Fugl-Meyer Assessment (FMA). They conclude that testing the ARAT items “pour water from glass to glass” and “place hand on top of head”, predicts the ability of performing a drinking task. This conclusion seems circular as predicting the ability to perform a certain movement by testing a similar movement reveals naturally a good sensitivity and poor to moderate specificity. The authors may consider re-thinking the reporting of the results: Whereas the FMA is a complex time demanding procedure, 2 simple items of the ARAT may be performed within a few minutes even in severely impaired patients. Showing that ARAT-2 is able to stratify motor function similar to FMA might be of major importance. In this context the authors could consider analysing the reliability of ARAT-2 and FMA-UE when assessed at the same time point (3 days and 1 month after stroke).

2. Study design

a. The study design isn’t precisely described. In the methods section, “Participants”, 1st paragraph the SALGOT study is mentioned for the first time, which comes, somehow, surprising for the reader. The authors should clarify if the reported study is a sub-study of the SALGOT study or if it is a retrospective sub-analysis of the SALGOT study data. In this context it might stress the importance of the presented study to focus on relevant data rather than to summarise different data in table 1 without further explanation (e.g. number of thrombolysis).

If the reported study is a separate sub-study, it should have received ethical approval, which – according to the second to last sentence of this section – only the SALGOT study has.

b. The authors do not explain why they have chosen the described testing and follow-up time points. If it is a prospective study the motivation for the chosen time-points should be given. If it is a retrospective study this should be stated.
3. Language and general writing

Unfortunately, partly due to poor language partly due to incoherence, the content of the article is not very comprehensive. Especially the background and the methods sections aren’t well structured, which makes it difficult to extract the main purpose and procedure of the study. I strongly advise a re-writing of the article with support of an expert or native English speaker.

E.g., methods section, “Clinical assessments and procedure”, 1st paragraph, next to last sentence:
“The sensitivity ranged between…” might be more conclusive in the result section.

E.g., methods section, “Data handling and statistics”, 2nd paragraph, 3rd sentence:
“The minimal number of items…” is an almost exact repetition to the 3rd sentence in the paragraph “ARAT and reduction of items”.

E.g., results, 2nd paragraph, third last sentence:
“The predictive value …” should be part of the methods section and has already been mentioned there (“Data handling and statistics”, 2nd paragraph).

E.g., discussion: The first 2 sentences are stating the same fact.

E.g. discussion, 3rd paragraph, 2nd sentence:
“In order to identify…was used” is part of the methods section and has already been mentioned there.

Minor Essential Revisions:

1. abstract, result section, 2nd sentence
Without further explanation it’s hard to understand, what the cut-off does separate (favourable versus unfavourable motor function?).

2. abstract, result section, 3rd sentence
“The sensitivity varied….” Please, make clear what the variation of sensitivity reflects (different time points?).

3. background, last paragraph
This sentence gives the impression that the ARAT was administered on the stroke unit 3 days and 1 month post stroke. I assume that patients haven’t stayed on the stroke unit for 1 month. It might be worth mentioning in which setting the further testing has taken place (in the method section).

4. methods, “Clinical assessments and procedures”, last paragraph
Similar to sensory function and pain assessment the Bamford classification isn’t used or referred to any further in the article. The authors might skip this information. The last sentence refers to table 1, in which “the details of the type of rehabilitation” should be described; but table 1 only refers to the number of
patients obtaining or not obtaining therapy.

5. methods, “ARAT and reduction of items”, second last sentence
   “From the selected... was determined.” Again, it should be made clear, what the
cut-off does separate.

6. results, 2nd sentence
   “Between participating patients...” should rather be “Between completing
patients...” as also the drop-outs participated initially.

7. discussion
   Overall the discussion and the conclusion are well balanced. Unfortunately, the
authors have compiled pure description of other studies without associating it
with their own findings.

Discretionary Revisions
8. Figures 1 and 2
   Figure 1 and figure 2 do not make the described procedure any clearer (a simple
but precise narrative description in the text might have greater impact). The
authors may consider using a table instead of figure 1 to mark the time points at
which what score was assessed.

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

Quality of written English: Not suitable for publication unless extensively edited

Statistical review: Yes, but I do not feel adequately qualified to assess the
statistics.

Declaration of competing interests:

No competing interest.