Reviewer's report

Title: Development of spasticity with age in a total population of children with cerebral palsy

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Reviewer: Reidun Jahnsen

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Review of:
Hägglund G and Wagner P. Development of spasticity with age in a total population of children with cerebral palsy

The present review was discussed by the physical- and occupational therapist staff at Section for Child Neurology, Rikshospitalet HF, Oslo, Norway.

1. The purpose of the present study is expressed as a description of the development of spasticity with age in a total population of children with cerebral palsy (CP), and the research question embedded in this purpose is clear. To our knowledge this has not been described before, and the study therefore contributes substantially to our knowledge about CP, with potential implications for clinical practice.

2. The study sample is a total population of 547 children with CP, and analysed with appropriate statistical methods in relation to two well validity- and reliability tested instruments. It therefore provides representative results which can be generalised. Enough details on the study group and methods of statistical analysis are given, theoretically making it possible to replicate the study. However, not everyone is able to provide population based data like the Swedish National Quality Register for children with CP. These data are unique. One detail: we miss an explanation for the choice of dichotomisation of the MAS in level 0-1+ on one side and 2-4 on the other.

3. The data are taken from all the examinations of spasticity in the gastrocnemius-soleus muscle in all the children with CP from 0-15 years during 1995-2006 in Southern Sweden. These children are included in the Swedish National Quality Register for children with CP, and can easily be controlled in their central database.

4. The manuscript follows relevant standards of reporting, and tables and most figures are clear visualisations of the results, making it easy for the reader to follow the steps of the analysis. However, some parts of the methods, results, and discussion part seem to be misplaced, belonging to one of the other parts. For example, paragraph four of the methods part, except for the first sentence seems like results, and paragraph seven and nine in the methods part seem more like discussion than method presentation. Paragraph five in the discussion part seems more like method description than discussion. These paragraphs are
suggested moved to the more appropriate parts, respectively. The statement in the background part on spasticity being the most common movement disorder in CP is questionable. The reference is old, and more updated references on motor control are suggested. If the authors mean the prevalence of spastic CP the statement is correct, but then for instance the SCPE reference should be used. There is a misspelling of ITB (ITP) in the legend of Table 4.

5. The discussion and conclusion are well supported by the data. However, there is one statement that needs a reference: “The decreasing spasticity with age is in accordance with the clinical findings that that some children with toe walking gait, if they do not develop muscle shortening, after some years start walking with heel contact”.

6. The title is a clear reflection of the content of the paper. However, the results part of the abstract is not consistent with the results in the paper in details about age groups.

7. We are not native English speaking persons, but in our opinion the article is readable and well written.

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

**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 interest.