Reviewer’s report

Title: The influence of initial spasticity in young children (18 months of age) with Cerebral Palsy on their development in gross motor function

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Reviewer: Reidun Jahnsen

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Review of:
Gorter JW, Verschuren O, van Riel L and Ketelaar M. The influence of initial spasticity in young children (18 months of age) with cerebral palsy on their development in gross motor function

Following minor essential revisions are suggested for the authors to consider:

1. The purpose of the present study was to evaluate the influence of initial spasticity in young children with cerebral palsy (CP) on their development of gross motor function in one year. The research question embedded in this purpose is clear. To my knowledge this has not been studied before in a longitudinal design, and the study therefore may be an important piece in the puzzle of our knowledge about the relationship between spasticity and the development of motor function in CP, with potential implications for clinical practice. The introduction gives a good overview of this specific part of the field with new and representative references, and thereby giving good reasons for the need for studies like the present. One detail; the first sentence in the second paragraph should specify that: “Motor impairment in CP can be classified…”

2. The methods are appropriate for the purpose of the study and well described. The study sample is 50 children from the PERRIN CP - 0-5 study, consisting of the examination of gross motor function (GMFM 66) and spasticity in the adductors, hamstrings, and gastrocnemius in children with CP 18 months of age and one year later. Data are analysed with appropriate statistical methods related to a well validity- and reliability tested instrument, (GMFM 66), and one clinical assessment tool, which is considered to be the most reliable way of assessing spasticity in children with CP. The authors did a thorough job, creating a rough ordinal scale of spasticity to differentiate between the three actual muscle groups’ impact on motor function. However, the description of this process on page 8 is unclear because of a misprint and an incomplete sentence after the one starting with: “The first level of the spasticity scale….” Except for this, enough details on the study group and methods are given. It is reason to believe that the study provides representative results which can be generalised.

3. The data are sound; taken from the PERRIN CP - 0-5 study in the Netherlands, and can be controlled in their central database. The parents signed written consent, and the study was approved by the Ethics Committee of the
4. The manuscript follows relevant standards of reporting, and tables and figures are clear visualisations of the results, making it easier for the reader to follow the steps of the analysis.

5. The discussion and conclusion are well supported by the data. Hopefully this study is only the first one in a series of longitudinal studies on the impact of spasticity on development of gross motor function, contractures and deformities in the long term in persons with CP.

6. Limitations of the work are clearly stated, such as, the lack of an inter-rater reliability study on the MTS.

7. The authors acknowledge clearly other researchers’ work which they are building upon, e.g. the use of Figure 1.

8. The title and abstract are clear reflections of the content of the paper.

9. I am not a native English speaking person, but in my opinion the article is readable and well written. However, there are some misprints that should be corrected e.g. was/were (methods and discussion), mixing present tense and imperfect in the same sentence (methods), misspelling of dyskinetic (results), inconsistent use of small and capital letters, and inconsistent use of cerebral palsy and CP in the abstract.

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

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

**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.