Reviewer's report

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

**Version:** 2  **Date:** 29 June 2008

**Reviewer:** Jan Willem Gorter

**Reviewer's report:**

The authors present their data from a large population cohort of children with CP and describe patterns of development of the degree of spasticity in the gastrocnemicalsoleus muscle in relation to age.

In the background of this paper the authors argue that the main reason for this study is that course of spasticity has not been studied/published before.

I think that the descriptives of this study are the most important message. I am not sure however, how the data of different birth cohorts contributed to the overall picture and would like to see more background information on this. The research question asks for a longitudinal design (i.e. multiple assessments of individuals over time).

Although the large population and multiple assessments of spasticity by the Asworth scale in children with CP over time are would be a great data-set to study the development of spasticity I do have major concerns about the way the data were treated in the analysis and the way in which the authors try to explain the findings. Although the authors describe the methods they used to analyse the data, I think that the rationale for dichotomizing the Asworth scale (0,1 and 1+ versus 2-4) and why the spastic side in children with predominantly unilateral spastic CP were included should be motivated. For the methods section I would recommend to have the data-analysis reviewed by a biostatistician. With the information give by the authors I could not fully understand the analysis. From a clinical perspective I found it difficult to read and understand the turning points in the development with age. I have the impression that the conclusions are data-driven (statistical findings) and based on more cross-sectional than longitudinal data-analysis.

**Major Comments**

- up to date literature on spasticity assessment in children with CP is missing (for example Scholtes et al 2007)
- muscle tone and spasticity according to the definition of Lance should be distinguished. How did the therapists assess spasticity (which position, which muscle group: gastroc, soleus or both?) What is known about the reliability of the assessment? I do not agree with the authors that "many of these problems regarding validity and reliability are solved....")
- the data-analysis should be clarified
Level of interest: An article of limited interest

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

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

Declaration of competing interests:
'I declare that I have no competing interests'