





The effect of different physical therapy interventions in post BTX-A treatment of children with cerebral palsy

Franki I (PT)¹, Van den Broeck C (PHD)¹, De Cat J (PT)^{2,3}, Molenaers G (MD, PHD)^{2,4,5} Himpens E (PT)¹, Van Waelvelde H (PHD)¹, Fagard K (PT)², Desloovere K (PHD)^{2,3}

- 1 Physiotherapy Ghent, University College Arteveldehogeschool, Ghent University
- 2 Clinical Motion Analysis Laboratory, University Hospital, Pellenberg
- 3 Department of Rehabilitation Sciences (KU-Leuven)
- 4 Department of Pediatric Orthopaedics, Belgium
- 5 Department of Muscoloskeletal Sciences (KULeuven)



Objective:

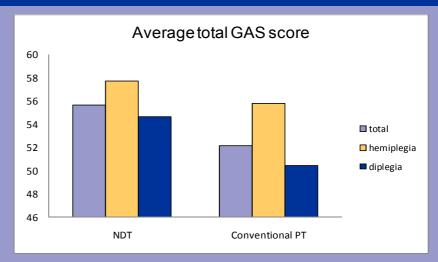
To distinguish the effects of different physical therapy programs in a post BTX-A regime for children with Cerebral Palsy (CP).

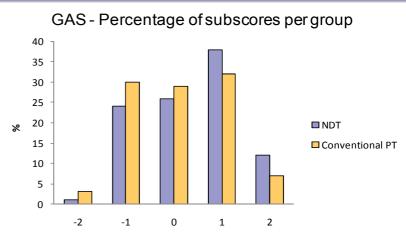
Methods:

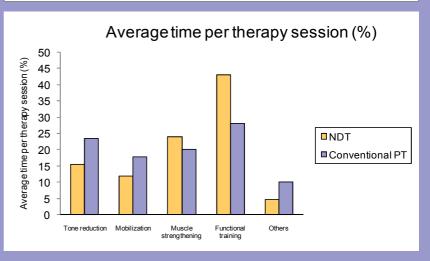
A group of 38 children (mean age 7y7m, GMFCS I-III, 27 diplegia, 11 hemiplegia) receiving an individually defined Neurodevelopment Treatment (NDT) program, was matched and compared with a group of children with the same age, GMFCS and diagnosis, receiving more conventional physical therapy treatment. All patients received selective tone-reduction by means of multilevel BTX-A injections and adequate follow-up treatment, including physical therapy. Three-dimensional gait analysis and clinical examination were performed pre and two months post-injection. Treatment success was defined using the Goal Attainment Scale (GAS).

Results:

- The average converted GAS score was higher in the group of children receiving NDT than in the group receiving conventional physical therapy (p<0.05).
- In the NDT group, overall treatment success was achieved in 76% of the goals, compared to 68% of the goals defined for the conventional physiotherapy group. Especially for the goals based on gait analysis (p<0.05) and in the group of diplegic children (p<0.05), treatment success was higher in the NDT group.
- For the NDT group, the average time per therapy spent on functional training was 42% per session. In conventional physiotherapy, this was only 28% per session which was significantly less (0.001).







Conclusion:

In a post-BTX-A regime, the short-term effects of a NDT approach are more pronounced than these from a conventional physical therapy approach.

NDT more frequently implements functional training than conventional physical therapy and thereby attempts to benefit more optimally from the use of BTX-A.