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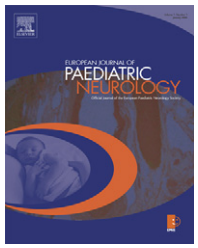

Review article

European consensus table 2006 on botulinum toxin for children with cerebral palsy

Florian Heinen[a,*], *Guy Molenaers*[b], *Charlie Fairhurst*[c], *Lucinda J. Carr*[d], *Kaat Desloovere*[e], *Emmanuelle Chaleat Valayer*[f], *Edith Morel*[f], *Antigone S. Papavassiliou*[g], *Kristina Tedroff*[h], *S. Ignacio Pascual-Pascual*[i], *Günther Bernert*[j], *Steffen Berweck*[a], *Guiseppe Di Rosa*[k], *Elisabeth Kolanowski*[l], *Ingeborg Krägeloh-Mann*[m]

[a]*Department of Paediatric Neurology and Developmental Neurology, Dr. von Hauner's Children's Hospital, University of Munich, Lindwurmstr. 4, D-80337 Munich, Germany*
[b]*Department of Orthopaedics, University Hospital of Pellenberg, Belgium*
[c]*Guy's and Saint Thomas' Hospitals, London, UK*
[d]*Great Ormond Street Hospital for Children, London, UK*
[e]*Department of Rehabilitation Sciences KUL, University Hospital of Pellenberg, Belgium*
[f]*Centre médico-chirurgical et de réadaptation des Massues, Lyon, France*
[g]*Department of Neurology, Pendeli Children's Hospital, Athens, Greece*
[h]*Astrid Lindgren Children's Hospital, Department of Woman and Child Health, Karolinska Institutet, Stockholm, Sweden*
[i]*Service of Child Neurology, Hospital Infantil La Paz, Universidad Autonoma de Madrid, Spain*
[j]*Gottfried von Preyer'sches Kinderspital der Stadt Wien, Austria*
[k]*Ospedale Pediatrico Bambino Gesù, Roma, Italy*
[l]*Centre de l'Arche-Centre Régional Spécialisé, Saint-Saturnin, France*
[m]*Department of Paediatric Neurology and Developmental Neurology, Children's Hospital, University of Tuebingen, Germany*

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ABSTRACT

An interdisciplinary group of experienced botulinum toxin users and experts in the field of movement disorders was assembled, to develop a consensus on best practice for the treatment of cerebral palsy using a problem-orientated approach to integrate theories and methods. The authors tabulated the supporting evidence to produce a condensed but comprehensive information base, pooling data and experience from nine European countries, 13 institutions and more than 5500 patients. The consensus table summarises the current understanding regarding botulinum toxin treatment options in children with CP.

*Corresponding author. Tel.: +49 89 5160 7851; fax: +49 89 5160 7745.
E-mail address: florian.heinen@med.uni-muenchen.de (F. Heinen).

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Development of the consensus table

The use of botulinum neurotoxin (BoNT) in European countries is established but is far from standardised. A large variety of treatment strategies and applications of BoNT in children with cerebral palsy (CP) are recognised; however, subtle differences in therapy seem crucial in determining success or failure. This has been convincingly shown in two recent papers on the treatment of the upper extremity spasticity.[1,2] A UK position paper on BoNT in CP was published 8 years ago[3] and guidelines have been produced by acknowledged experts in the field.[4,5] However, there is a recognised need for an updated orientation in this rapidly evolving and expanding field.

An interdisciplinary group of renowned experienced users of BoNT (in children with CP) and experts in the field of movement disorders was assembled, to work using a problem-orientated approach to integrate theories and methods[6] and develop a consensus on best practice for the treatment of CP. This group actively supports the rights of children to the highest attainable standard of health and access to health care as set forth in the resolution of the executive board of the World Health Organisation.[7]

The authors decided to tabulate the supporting evidence to offer the reader a comprehensive and condensed information base. Each reader is encouraged to draw the relevant information from the table that is specific to their own treatment setting. The corresponding author (F.H., University of Munich) proposed a first draft of the table that was sent out to the other authors for comment. The draft consensus table covered 10 key areas of BoNT therapy in children with CP. A comprehensive literature search in PubMed (including MEDLINE, NLM Gateway, PreMEDLINE, HealthSTAR, publisher supplied citations) and SCOPUS was performed for each area. The available literature on BoNT (>7500 papers) was screened. Studies included in the table were those that used BoNT to treat children (search items: BOTULINUM CHILDREN, >550 papers) or added other relevant information to the specific research domain. Additional papers were included according to their relevance in this setting, e.g. pathogenesis and imaging[8] or injection technique.[9] Each therapy study to be cited in the table was assigned there a value of I–V as suggested by the AACPDM and used by e.g. Lannin et al.,[10] according to the level of evidence represented.

Following circulation of the draft table a 1-day meeting, of invited participants, was held in June 2005 on behalf of the University of Munich. During the meeting the 10 key areas were discussed in detail, further data from clinical studies were collected and clinical experience from each participant was included to build on the knowledge base. In a 3-month period after the meeting, the participants formed teams according to their expertise to confirm details and, before submission, the table was updated with relevant new papers published up to June 2006.

The consensus table summarises the current understanding regarding BoNT treatment options in children with CP. The text serves as a short introduction to the 10 key areas and should be read as a commentary on the table. The table pools data and experience from nine European countries, 13 institutions and more than 5500 patients.

Section 1 Cerebral palsy

CP is the most common cause of spastic movement disorders in children.[11,12] Our understanding of the aetiology, or at least the pathogenesis, of the disease has been greatly advanced by the development of magnetic resonance imaging, which allows the identification of the underlying structural changes in the brain[13] and gives information on topography and the extent and potential timing of the causative lesion.[8] The development of a European consensus on CP definition and classification[14] and its illustration by a video-based manual (the reference and training manual of the SCPE) provides a practical basis for a unified approach with respect to diagnosis.[15] A whole body approach to classification is facilitated by the use of tools such as the gross motor function classification system (GMFCS), which describe both disease severity and course.[16,17] An International Committee has proposed a more standardised and comprehensive classification system.[18] As these classifications represent specific problems in children with CP, associated with