

AUTISM AND ADHD IN CHILDREN WITH CEREBRAL PALSY

AKADEMISK AVHANDLING

som för avläggande av medicine doktorsexamen vid Sahlgrenska akademien,
Göteborgs universitet, kommer att offentlig försvaras i Academicum,
hörsal Arvid Carlsson, Medicinaregatan 3, fredagen den 4 december 2020 klockan 9.00

av Magnus Pählman

Fakultetsopponent: Docent Margareta Dahl
Uppsala Universitet

Avhandlingen baseras på följande delarbeten:

I

Pählman M, Gillberg C, Himmelmann K.
One third of school-aged children with cerebral palsy have
neuropsychiatric impairments in a population-based study.
Acta Paediatrica 2019; 108: 2048-2055.

II

Pählman M, Gillberg C, Wentz E, Himmelmann K.
Autism spectrum disorder and attention-deficit/hyperactivity disorder in
children with cerebral palsy: results from screening in a population-based group.
European Child & Adolescent Psychiatry 2020 Jan 11. Epub ahead of print.

III

Pählman M, Gillberg C, Himmelmann K.
Autism and attention-deficit/hyperactivity disorder in children with
cerebral palsy: high prevalence rates in a population-based study.
Developmental Medicine & Child Neurology 2020 Oct 12. Accepted.

IV

Pählman M, Gillberg C, Himmelmann K.
Neuroimaging findings in children with cerebral palsy with autism and/or
attention-deficit/hyperactivity disorder: a population-based study.
Submitted.

Handledare: Docent Kate Himmelmann
Biträdande handledare: Professor Christopher Gillberg

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Magnus Pålman

Gillberg Neuropsychiatry Centre, Institute of Neuroscience and Physiology
Sahlgrenska Academy, University of Gothenburg, Sweden 2020

ABSTRACT

BACKGROUND: Autism spectrum disorder (autism) and attention-deficit/hyperactivity disorder (ADHD) are likely underdiagnosed in children with cerebral palsy (CP). Early identification of impairments is important for adequate understanding and support.

AIMS: To estimate the prevalence of autism and ADHD in CP in a total population of school-aged children with CP. To describe the associations between autism/ADHD and sex, gestational age, CP type, motor function, intellectual disability (ID), other associated impairments, epilepsy and neuroimaging findings in children with CP.

METHODS: A well-defined total population of 264 children with CP from the CP register of western Sweden was examined. All available medical records were scrutinised for diagnosed impairments. Parents to all children were invited to complete a comprehensive questionnaire to detect signs of autism and ADHD. Further, children without full concordance between clinical diagnoses and screening outcome for autism/ADHD were assessed. Results were merged with existing information about already assessed children. Finally, neuroimaging findings were compared in regard to the presence of autism and/or ADHD.

RESULTS: One third of the 264 children were already diagnosed with autism and/or ADHD (autism 18%, ADHD 21%). Screening was positive to a much higher extent (autism 35%, ADHD 50%). Further neuropsychiatric assessments revealed additionally 19 children meeting diagnostic criteria for autism and/or ADHD. The group that completed screening and assessment comprised 200 children. In total 90 of these 200 children (45%) were diagnosed with autism and/or ADHD; 15% with autism only, 15% with ADHD only and 15% with both autism and ADHD. ID, present in 51%, was the main predictor of autism and ADHD, while both autism and ADHD were mainly independent of gross motor severity and CP type. Autism and ADHD were common in all neuroimaging patterns. However, autism was more prevalent in children with white matter injury, and ADHD in children having sustained middle cerebral artery infarction.

CONCLUSION: Autism and ADHD are very common in children with CP and should be regarded as two main associated impairments in CP. The high prevalence of autism and ADHD emphasises the need to screen and, if indicated, further assess all children with CP for these impairments. Further studies, including neuroimaging, may help us better understand the strong association between CP and autism/ADHD.

KEYWORDS: cerebral palsy, autism spectrum disorder, attention-deficit/hyperactivity disorder, children, impairments, screening, prevalence, neuroimaging

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