Antecedents of Attention-Deficit/Hyperactivity Disorder Symptoms in Children Born Extremely Preterm.

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Abstract

OBJECTIVE:
To investigate antecedents of attention-deficit/hyperactivity disorder (ADHD) symptoms in children born extremely preterm (EP; <26-wk gestation).

METHOD:
The EPICure study recruited all babies born EP in the United Kingdom and Ireland in March-December 1995. Neurodevelopmental outcomes were assessed at 2.5 (n = 283; 90%), 6 (n = 160; 78%), and 11 (n = 219; 71%) years of age. Parents and teachers completed the DuPaul Rating Scale IV to assess inattention and hyperactivity/impulsivity symptoms at 11 years. Regression analyses were used to explore the association of neonatal, neurodevelopmental, and behavioral outcomes to 6 years with ADHD symptoms at 11 years.

RESULTS:
Extremely preterm (EP) children had significantly more inattention (mean difference, 1.2 SD; 95% CI, 0.9-1.5) and hyperactivity/impulsivity (mean difference, 0.5 SD; 95% CI, 0.2-0.7) than controls, with a significantly greater effect size for inattention than hyperactivity/impulsivity. Significant independent predictors of inattention at 11 years included smaller head circumference, lower intelligence quotient (IQ), and pervasive peer relationship problems at 6 years, and motor development at 2.5 years. In contrast, significant independent predictors of hyperactivity/impulsivity included lower IQ, pervasive conduct problems and ADHD symptoms at 6 years, externalizing problems at 2.5 years, and non-white maternal ethnicity.

CONCLUSIONS:
Extremely preterm children are at increased risk for ADHD symptoms, predominantly inattention, for which the antecedents differ by symptom domain. Attention deficits after EP birth were associated with poor brain growth and neurological function. Cognitive and behavioral assessments in early and middle childhood to identify neurodevelopmental and peer relationship problems may be beneficial for identifying EP children at risk for inattention.