ADHD in childhood epilepsy: Clinical determinants of severity and of the response to methylphenidate

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Summary

Objective
Attention-deficit/hyperactivity disorder (ADHD) is commonly observed in children with epilepsy. However, factors associated with the development of ADHD and which might help to guide its therapeutic management, remain an issue of debate.

Methods
We conducted a multicenter prospective observational study that included children, aged 6–16 years, with both epilepsy and ADHD according to Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV) criteria. After inclusion, patients entered a 12–16 week follow-up period during which they were either treated with methylphenidate or they did not receive specific ADHD treatment. ADHD was evaluated with the ADHD Rating Scale-IV.

Results
One hundred sixty-seven patients were included, of which 91 were seizure-free during the preinclusion baseline period. At inclusion, the ADHD Rating Scale-IV total score was 30.4 ± (standard deviation) 9.2, the inattentive subscore was 17.3 ± 4.4, and the hyperactive subscore was 13.2 ± 6.6. We did not detect any difference of ADHD Rating Scale-IV scores across patients' age or gender, age at epilepsy onset, epilepsy syndrome, seizure frequency, or number of ongoing antiepileptic drugs. Methylphenidate was initiated in 61 patients, including 55 in whom a follow-up evaluation was available. At the last follow-up, 41 patients (75%) treated with methylphenidate and 39 (42%) of those who did not received ADHD therapy demonstrated ≥25% decrease of ADHD Rating Scale-IV total score (p < 0.001). Response to methylphenidate was greater in girls but was not influenced by any epilepsy-related variables.

Significance
We did not detect any epilepsy-related factor associated with the severity of ADHD. Twenty-five percent of patients did not respond to methylphenidate. A better understanding of the pathologic process that underlies ADHD development in childhood epilepsy might be required to improve therapeutic strategies.