Sleep-Related Disorders in Children with Attention-Deficit Hyperactivity Disorder: Preliminary Results of a Full Sleep Assessment Study.

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Abstract

BACKGROUND AND METHODS:
We present the preliminary results of a prospective case-control sleep study in children with a diagnosis of attention-deficit hyperactivity disorder (ADHD). A deep sleep assessment including sleep questionnaires, sleep habits, a video-polysomnographic recording with full high-density electroencephalography (EEG) and cardiorespiratory polygraphy, multiple sleep latency test, and 1-week actigraphic recording were performed to verify whether children with ADHD may be classified into one of the following five phenotypes: (1) hypoarousal state, resembling narcolepsy, which may be considered a "primary" form of ADHD; (2) delayed sleep onset insomnia; (3) sleep-disordered breathing; (4) restless legs syndrome and/or periodic limb movements; and (5) sleep epilepsy and/or EEG interictal epileptiform discharges.

RESULTS:
Fifteen consecutive outpatients with ADHD were recruited (two female, mean age 10.6 ± 2.2, age range 8-13.7 years) over 6 months. The narcolepsy-like sleep phenotype was observed in three children, the sleep onset insomnia phenotype was observed in one child, mild obstructive sleep apnea was observed in three children, sleep hyperkinesia and/or PLMs were observed in five children, while IEDs and or nocturnal epilepsy were observed in three children. Depending on the sleep phenotype, children received melatonin, iron supplementation, antiepileptic drugs, or stimulants.

CONCLUSIONS:
Our study further highlights the need to design an efficient sleep diagnostic algorithm for children with ADHD, thereby more accurately identifying cases in which a full sleep assessment is indicated.