Association between sleep parameters and cognitive function in drug-naïve children with attention-deficit hyperactivity disorder: a polysomnographic study.

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Abstract

OBJECTIVE:
Sleep problems are common among patients with attention-deficit hyperactivity disorder (ADHD), and are considered major causes of behavioral and cognitive dysfunction in ADHD patients. In the present study, we investigated the relationship between sleep parameters and cognitive function in drug-naïve children with ADHD.

METHODS:
Twenty-eight patients were recruited to participate in the study, and a polysomnography was used to measure sleep parameters of the subjects. Cognitive measurements were collected, utilizing the Wechsler Intelligence Scale for Children-III (WISC-III), and the Matching Familiar Figure Test for Korean Children (MFFT-KC), while behavioral characteristics of the subjects were assessed using Conners’ Global Index-Parent version (CGI-P). Descriptive statistics were calculated for demographic data, sleep parameters, and neurocognitive characteristics of ADHD patients. Spearman's correlation analyses were performed to determine the association between sleep parameters and neurocognitive measures. Moreover, multiple regression analyses were used to identify the best predictors of cognitive function among the various sleep parameters.

RESULTS:
The regression analyses revealed several meaningful correlations, suggesting that slow wave sleep, stage 2 sleep, REM sleep, and limb movement index with arousals (LMAs) as predictors of cognitive function in ADHD patients.

CONCLUSION:
Based on our study results, sleep parameters and cognitive function were closely associated in ADHD patients; further research should be directed at clarifying this crucial link.