Hypersomnia with ADHD: a possible subtype of narcolepsy type 2

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Abstract

Patients with attention deficit/hyperactivity disorder (ADHD) suffer from hypersomnia; indeed, we have often encountered ADHD patients that fulfill the diagnostic criteria for narcolepsy type 2 (NA 2). Because not all patients with NA 2 carry the HLA-DQB1*06:02 allele, which is closely associated with narcolepsy type 1 (NA 1), NA 2 is believed to be heterogeneous. To reveal the contribution of ADHD in hypersomnia, we studied the characteristics of hypersomnia patients with ADHD, especially those diagnosed with NA 2. Participants were 77 of 185 consecutive outpatients who were diagnosed with NA 2 or idiopathic hypersomnia. We investigated sleep variables in (a) participants with hypersomnia with/without ADHD and (b) patients with NA 2 with/without ADHD and those with/without the DQB1*06:02 allele. The proportion of those diagnosed with NA 2 was higher in hypersomnia patients with ADHD compared to those without ADHD. None of the NA 2 patients with ADHD carried the narcolepsy-specific DQB1*06:02 allele. These patients with NA 2 with ADHD exhibited short REM latencies on the MSLT (similarly to DQB1*06:02-positive patients with NA 2 without ADHD), but less REM-related phenomena than patients with NA 2 without ADHD. Hypersomnia patients with ADHD tended to show short REM latencies, and fulfilled NA 2 diagnostic criteria in the absence of the DQB1*06:02 allele, suggesting a different etiology from NA 1. These findings support the hypotheses of noradrenergic dysregulation and delayed brain maturation that have been proposed for the pathophysiology of ADHD.