Methylphenidate use in males with Duchenne muscular dystrophy and a comorbid attention-deficit hyperactivity disorder

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Abstract

Attention-deficit hyperactivity disorder (ADHD) is a common comorbidity in Duchenne muscular dystrophy (DMD). Until now, treatment with methylphenidate (MPH) has never been systematically assessed and described in this population. Our aim was to evaluate the effectiveness and safety of short acting MPH for learning problems in males with DMD and ADHD. Neuropsychological (cognition and behavior) and medical data of a sample of ten males (mean age = 8.1 years, range 6.3-9.8) with DMD and an ADHD diagnosis was retrospectively analyzed at baseline (T0; without MPH), short-term follow-up (T1; with MPH; mean interval T0-T1 = 8.3 months, range 4.3-15.6), and long-term follow-up (T2; mean interval T1-T2 = 23.1 months, range 2.6-77.7). An initial MPH dose of 5 mg/day was given on school mornings, with an increase of 2.5-5 mg/week depending on individual tolerance and treatment response, until a sufficiently effective dose was reached (range 0.2-0.6 mg/kg/day). At T1, results demonstrated an improvement in attention (i.e. concentration, impulsivity, and distractibility) in four patients. Suboptimal effects were reported in four patients, and no effects in two patients. At T2, seven patients showed considerable improvement in attention. No major side effects were reported. Overall, our data show that short acting MPH can be clinically effective for learning problems in males with DMD and ADHD, with regular cardiac follow-up, and close monitoring of side effects and neuropsychological effects. Furthermore, this underscores the importance of the use of validated cognitive and behavioral measurement tools with adequate sensitivity to objectively evaluate the effect of MPH.