Methylphenidate dose optimization for ADHD treatment: review of safety, efficacy, and clinical necessity.

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Abstract

Attention-deficit/hyperactivity disorder (ADHD) is a chronic psychiatric disorder characterized by hyperactivity and/or inattention and is often associated with a substantial impact on psychosocial functioning. Methylphenidate (MPH), a central nervous system stimulant, is commonly used for pharmacological treatment of adults and children with ADHD. Current practice guidelines recommend optimizing MPH dosage to individual patient needs; however, the clinical benefits of individual dose optimization compared with fixed-dose regimens remain unclear. Here we review the available literature on MPH dose optimization from clinical trials and real-world experience on ADHD management. In addition, we report safety and efficacy data from the largest MPH modified-release long-acting Phase III clinical trial conducted to examine benefits of dose optimization in adults with ADHD. Overall, MPH is an effective ADHD treatment with a good safety profile; data suggest that dose optimization may enhance the safety and efficacy of treatment. Further research is required to establish the extent to which short-term clinical benefits of MPH dose optimization translate into improved long-term outcomes for patients with ADHD.