No Superiority of Treatment With Osmotic Controlled-Release Oral Delivery System-Methylphenidate Over Short/Medium-Acting Methylphenidate Preparations in the Rate and Timing of Injuries in Children With Attention-Deficit/Hyperactivity Disorder.

Golubchik P, Kodesh A, Weizman A.

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Abstract

OBJECTIVES:
Methylphenidate (MPH) treatment in patients with attention-deficit/hyperactivity disorder (ADHD) is reported to reduce the risk for injuries. In the present study, the rate and timing of injuries were compared among the various MPH preparations (4 and 6-8 vs 12 hour-acting) in children with ADHD.

METHODS:
This real-world retrospective study covered the years 2011 to 2013. Participants included 2042 youngsters (aged 4-18 years, 13.01 ± 3.2 years; 71.8% males and 28.2% females) diagnosed with ADHD according to the International Statistical Classification of Diseases, 10th Revision criteria and treated with various MPH preparations. They were divided into 2 groups by their treatment preparation as follows: MPH-immediate release (MPH-IR)-4 hour-acting pooled with MPH-slow release/long-acting (MPH-SR/LA)- 6 to 8 hour-acting versus osmotic controlled-release oral delivery system-MPH (OROS-MPH; Concerta)-12 hour-acting that consisted of pooling of OROS-MPH only and OROS-MPH combined with the other MPH preparations. The monthly rates of injury, specifically, late injury (occurrence between 4:00 p.m. to midnight) and for multiple injuries, the time interval between injuries, were assessed.

RESULTS:
No significant differences in monthly rate of nonfatal injuries were found between OROS-MPH with or without 4/6 to 8 hour-acting MPH-formulations versus only 4/6 to 8 hour-acting MPH-preparations (P = 0.53). Neither were differences found in the between-injury time interval (P = 0.83) or in late-injury-rates (P = 0.37) between those groups.

CONCLUSIONS:
This real-world-naturalistic study in the community demonstrates that, in ADHD pediatric populations, OROS-MPH preparation is not superior to short/medium-acting (4/6-8 hours) MPH preparations regarding the rate and timing of injuries.