

Association of Risk of Suicide Attempts with Methylphenidate Treatment

Kenneth K. C. Man, MPH; David Coghill, MD; Esther W. Chan, PhD; Wallis C. Y. Lau, BSc; Chris Hollis, PhD; Elizabeth Liddle, PhD; Tobias Banaschewski, MD; Suzanne McCarthy, PhD; Antje Neubert, PhD; Kapil Sayal, PhD; Patrick Ip, MBBS; Martijn J. Schuemie, PhD; Miriam C. J. M. Sturkenboom, PhD; Edmund Sonuga-Barke, PhD; Jan Buitelaar, MD; Sara Carucci, MD; Alessandro Zuddas, MD; Hanna Kovshoff, PhD; Peter Garas, MD; Peter Nagy, MD; Sarah K. Inglis, PhD; Kerstin Konrad, PhD; Alexander Häge, MD; Eric Rosenthal, MD; Ian C. K. Wong, PhD

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Abstract

Importance

Patients with attention-deficit/hyperactivity disorder (ADHD) are at an increased risk of attempting suicide. Stimulants, such as methylphenidate hydrochloride, are the most common treatment for ADHD, but the association between their therapeutic use and suicide is unclear.

Objective

To investigate the association between methylphenidate and the risk of suicide attempts.

Design, Setting, and Participants

A population-based, electronic medical records database from the Hong Kong Clinical Data Analysis & Reporting System was used to identify 25 629 individuals aged 6 to 25 years who were treated with methylphenidate between January 1, 2001, and December 31, 2015. Those who had attempted suicide were included in the analysis. A self-controlled case series design was used to control for time-invariant characteristics of the patients.

Main Outcomes and Measures

Relative incidence of suicide attempt during periods when patients were exposed to methylphenidate compared with nonexposed periods.

Results

Among 25 629 patients with methylphenidate prescriptions, 154 had their first recorded suicide attempt within the study period; of these individuals, 111 (72.1%) were male; mean (SD) age at baseline was 7.15 (2.19) years. The overall incidence of suicide attempts during methylphenidate treatment was 9.27 per 10 000 patient-years. An increased risk of suicide attempts was detected during the 90-day period before methylphenidate was initiated, with an incidence rate ratio (IRR) of 6.55 (95% CI, 3.37-12.72). The IRR remained elevated during the first 90 days of treatment (IRR, 3.91; 95% CI, 1.62-9.42) before returning to baseline levels during ongoing treatment (IRR, 1.35; 95% CI, 0.77-2.38). When the risk during the first 90 days of treatment was compared with the 90 days preceding first treatment, the incidence of suicide attempts was not elevated (IRR, 0.78; 95% CI, 0.26-2.35).

Conclusions and Relevance

The incidence of suicide attempts was higher in the period immediately before the start of methylphenidate treatment. The risk remained elevated immediately after the start of methylphenidate treatment and returned to baseline levels during continuation of methylphenidate treatment. The observed higher risk of suicide attempts before treatment may reflect emerging psychiatric symptoms that trigger medical consultations that result in a decision to begin ADHD treatment. Therefore, this study's results do not support a causal association between methylphenidate treatment and suicide attempts.