Comparative efficacy, acceptability, and tolerability of dexmethylphenidate versus placebo in child and adolescent ADHD: a meta-analysis of randomized controlled trials.


Abstract
BACKGROUND:
The efficacy of dexmethylphenidate (d-MPH) has been proven in the treatment of children and adolescents with attention-deficit hyperactivity disorder (ADHD).

OBJECTIVE:
The aim of this systematic review is to determine the efficacy, acceptability, and tolerability of d-MPH in child and adolescent ADHD.

METHODS:
The searches of SCOPUS, MEDLINE, CINAHL, and Cochrane Controlled Trials Register were performed in February 2015. All randomized controlled trials of d-MPH versus placebo that were performed in children and adolescents with ADHD up to 18 years of age were included in the study. The efficacy was measured by using the pooled mean-endpoint or mean-changed scores of ADHD rating scales and the response rate. Acceptability and tolerability were measured by using the pooled rates of overall discontinuation and discontinuation due to adverse events, respectively.

RESULTS:
A total of 1,124 children and adolescents diagnosed as having ADHD were included in this review. In a laboratory school setting, the pooled mean-change and mean-endpoint scores in the d-MPH-treated group were significantly greater than those of the placebo-treated group with standardized mean difference (95% confidence interval [CI]) of -1.20 (-1.73, -0.67), I²=95%. Additionally, the pooled mean-changed scores of the ADHD rating scales for teachers and parents in the d-MPH-treated group were significantly greater than that of the placebo-treated group with weighted mean difference (95% CI) of -13.01 (-15.97, -10.05), I²=0% and (95% CI) of -12.99 (-15.57, -10.42), I²=0%, respectively. The pooled response rate in the d-MPH-treated groups had a significance higher than that of the placebo-treated group. The rates of pooled overall discontinuation and discontinuation due to adverse events between the two groups were not significantly different.

CONCLUSION:
Based on the findings in this review, it can be concluded that d-MPH medication is efficacious and tolerable in child and adolescent ADHD. However, the acceptability of d-MPH is no greater than that of the placebo. Further systematic studies may confirm these findings.