A network meta-analysis of atomoxetine and osmotic release oral system methylphenidate in the treatment of attention-deficit/hyperactivity disorder in adult patients.

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Abstract

The lack of head-to-head clinical studies powered to compare atomoxetine and osmotic release oral system (OROS) methylphenidate necessitates treatment comparison by methods that include indirect evidence such as network meta-analysis (NMA). A NMA assessing the relative treatment effects of atomoxetine and OROS methylphenidate in adults with attention-deficit/hyperactivity disorder (ADHD) was conducted. Studies were identified by systematic literature review. Analyses summarised improvements in efficacy, measured by ADHD-specific scales, using Cohen's d to calculate the standardised mean difference (SMD), and all cause discontinuations. Results showed effect sizes (SMD, 95% credible interval (CrI)) relative to placebo that did not differ significantly between atomoxetine (0.46, 0.36-0.56) and OROS methylphenidate (0.51, 0.40-0.63) in clinical studies of up to 12 weeks' duration (SMD, 95% CrI for atomoxetine versus OROS methylphenidate: -0.05, -0.18-0.08). Patients treated with these medications responded better than those given placebo across all analyses. There was also no significant difference in discontinuation rates between atomoxetine and OROS methylphenidate (odds ratio, 95% CrI: 0.85, 0.53-1.35). Between-study heterogeneity was low overall. Results of this NMA suggest that the efficacy of atomoxetine and OROS methylphenidate in adults does not differ significantly. Clinical guidelines may require amendment to reflect these recent data.