Atomoxetine for attention deficit hyperactivity disorder in the adulthood: a meta-analysis and meta-regression

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ABSTRACT
Purpose
Atomoxetine is a non-stimulant drug that could be an alternative to methylphenidate, whose benefit : risk balance for the treatment of adults with attention deficit hyperactivity disorder (ADHD) has recently been shown to be unclear. This study aimed to compare all-cause discontinuation rate between atomoxetine and placebo in adults with ADHD. Secondarily, efficacy and safety were investigated.

Methods
Systematic review and meta-analysis of randomized controlled trials comparing atomoxetine with placebo in adults with ADHD were performed. All-cause treatment discontinuation was the primary endpoint. Efficacy in reducing ADHD symptoms and safety were the secondary endpoints. Odds ratio (OR) and the standardized mean difference (SMD) were calculated for dichotomous and continuous outcomes, respectively. Data were pooled using the fixed and random effects model. The influence of study design-related, intervention-related and patient-related co-variables over the primary endpoint was investigated by means of meta-regression. This study is registered with the international prospective register of systematic reviews (PROSPERO): CRD 42012002042.

Results
Twelve studies (3375 patients) were included. Treatment discontinuation was larger with atomoxetine than with placebo (OR = 1.39). No co-variable was found to modify the effect of atomoxetine over treatment discontinuation. Atomoxetine showed modest efficacy in reducing ADHD symptoms irrespective of the assessor: patient (SMD = −0.33); clinician (SMD = −0.40). The rate of adverse events-induced discontinuation was higher with atomoxetine than with placebo (OR = 2.57).

Conclusion

This study suggests that atomoxetine has a poor benefit–risk balance for the treatment of adults with ADHD. The recommendation of atomoxetine use in this population is weak.