Efficacy and Tolerability of Different Interventions in Children and Adolescents with Attention Deficit Hyperactivity Disorder

Ruiling Luan, Zhiling Mu, Fang Yue, Shaoying He

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Background:
Our study is an analysis of multiple publications involving assessing the comparable efficacy and tolerability of six interventions, which are lisdexamfetamine dimesylate (LDX), atomoxetine (ATX), methylphenidate (MPH), clonidine hydrochloride (CLON), guanfacine extended release (GXR), and bupropion, for young patients (6–18 years old) suffering from attention deficit hyperactivity disorder (ADHD).

Methods:
A conventional meta-analysis (MA) was performed to give direct comparisons and a network meta-analysis (NMA) was used to show the combination of direct and indirect evidence. Ranking preference for all the interventions under a certain outcome was given by the surface of cumulative ranking curve area (SUCRA).

Results:
Overall, 15,025 participants from 73 studies were involved in our analysis. In the pairwise MA, LDX was associated with less withdrawal than ATX for lack of efficacy. MPH showed less effectiveness than LDX according to ADHD Rating Scale score. Based on the analysis of our NMA, significant results of efficacy that LDX is a competitive drug were observed when evaluating LDX in comparison with other drugs except for CLON. ATX and GXR presented higher rates of abdominal pain morbidity versus inactive treatment.

Conclusion:
The stimulants LDX and MPH are still highly recommended because they are highly effective and are tolerated well by patients. Among the non-stimulants, CLON can be taken into consideration for its appreciable effectiveness and tolerability. ATX and GXR can be seen as moderate choices.