



How effective is medication for ADHD symptoms in children with ASD?

By Dr. Jessica Edwards

Clinically significant attention-deficit/hyperactivity disorder (ADHD) symptoms are common and impairing in children with autism spectrum disorder (ASD).¹ Moreover, ADHD is the most common co-occurring mental health diagnosis driving increased rates of medication use in children with ASD.² Today, the rates of polypharmacy in this population are high and a variety of medication classes are being prescribed, without established evidence to support their use.³ To address this knowledge gap, Rebecca Rodrigues and colleagues compiled a Practitioner Review for the *Journal of Child Psychology and Psychiatry* on the pharmacological treatment of ADHD symptoms in children with ASD.

“Prior to our study, a small number of reviews were available that synthesized efficacy evidence and provided clinical recommendations for assessment and management of ADHD in ASD; however, since their publication, new empirical studies have been published that examine efficacy of additional medications”, explains study author Stephanie Ameis. “Therefore, our Practitioner Review aimed to provide one comprehensive resource to: (1) synthesize the available evidence testing efficacy of all pharmacological treatments for ADHD symptoms in children and youth with ASD through our systematic review and meta-analysis; and (2) provide guidance to translate the current evidence base into recommendations for clinical care”.

Ameis and colleagues identified 25 randomized controlled trials (RCTs) involving participants <25 years-of-age diagnosed with ASD and that evaluated ADHD outcomes after treatment with medication. Results from their meta-analysis showed that methylphenidate, atomoxetine, and guanfacine seem to have small-to-large effects on hyperactivity and inattention in children with ASD. However, the overall quality of the available evidence was low to very low. Additionally, indirect low-quality evidence indicated that aripiprazole and risperidone might reduce hyperactive symptoms in children and youth with ASD who were treated for significant irritability, but these results are only exploratory and may not generalise. They also found that the evidence for long-term medication treatment is limited, and the evidence for effects on real-world function (e.g., adaptive, cognitive, academic) is minimal or altogether lacking in the current literature.

The researchers' take-home message for clinical care is that methylphenidate remains the first-line medication treatment option, while emerging evidence suggests that atomoxetine and guanfacine might reduce ADHD symptoms in ASD. "Clinicians should evaluate the current evidence-base with families, consider personalized child, any familial and environmental factors, the adverse effects, the administration and discontinuation profiles of each second-line option and ultimately undertake a shared-decision making process to support choice among second-line medication treatment options", says Ameis. "Ongoing evaluation of the need for continuous pharmacological treatment has to be an integral component of care for children and youth with ASD and ADHD".

Going forward, Ameis and colleagues hope that future studies will evaluate the impact of medication treatment for ADHD in ASD on academic performance and school adjustment to examine whether clinical effects translate into improvement in real world functioning. They also consider that long-term efficacy studies are needed that can provide information on whether initial ADHD treatment effects are maintained or enhanced with longer-term treatment in children with ASD.

Referring to:

Rodrigues, R., Lai, M-C., Beswick, A., Gorman, D.A., Anagnostou, E., Szatmari, P., Anderson, K.K. & Ameis, S.H. (2020), *Practitioner Review: Pharmacological treatment of attention-deficit/hyperactivity disorder symptoms in children and youth with autism spectrum disorder: a systematic review and meta-analysis*. *J. Child Psychol. Psychiatr.* doi: 10.1111/jcpp.13305.

See Figure 3 in this paper for a helpful medication choice pathway.

References:

- ¹ Lai, M-C. et al. (2019). *Prevalence of co-occurring mental health diagnoses in the autism population: A systematic review and meta-analysis*. *Lancet Psychiatry*, 6, 819–829. doi: 10.1016/S2215-0366(19)30289-5.
- ² Jobski, K. et al. (2017). *Use of psychotropic drugs in patients with autism spectrum disorders: A systematic review*. *Acta Psychiatr. Scand.* 135, 8–28. doi: 10.1111/acps.12644.
- ³ Houghton, R. et al. (2018). *Psychiatric comorbidities and psychotropic medication use in autism: A matched cohort study with ADHD and general population comparator groups in the United Kingdom*. *Autism Res.* 11, 1690–1700. doi: 10.1002/aur.2040.