Cite this as: Peiying TAN, Xiaolin SHEN, Lizhang ZENG, Xuchu WENG, Hongyan GENG, 2024. Pharmacotherapy for the core symptoms of autism spectrum disorder. *Journal of Zhejiang University-Science B (Biomedicine & Biotechnology)*, 25(11):956-971. https://doi.org/10.1631/jzus.B2300864

JZUS-B

Pharmacotherapy for the core symptoms of autism spectrum disorder

Key words: Autism spectrum disorder (ASD); Core symptom; Pharmacotherapy; Repetitive behaviors; Social dysfunction

Research summary

This review mainly focused on medications that can treat core symptoms of autism in children and adolescents, and based on the drug target and mechanism of action we classify these drugs into the following categories :

- **Atypical psychotropic medications**
- **Anti-inflammatory and antioxidant medications**
- **hormonal medications**
- **ion channel medications**
- **gastrointestinal medications**

JZUS-B

Innovation points

- **Introduction** of the effective medications for treating ASD in children and adolescents, categorizing the drugs by their potential mechanisms of action.

- **Summary** of the advantages and disadvantages of these drug treatments and the shortcomings of the clinical studies

- **Emphasis** of the possible etiology of ASD and the need for improved drug research



IZUS-B

Figure 4

Innovation points

A comprehensive tables were generated to summarize the drugs mentioned in the review.

Table 1 | Systematic review of pharmacologic treatments for ASD, summarizing the medications included in selected papers and providing information about clinical trials.

Classification	Medication	Doses	Type of study	Subjects	Period of treatment	Outcome measures	Trial outcome
Atypical psychotropic medications	Risperidone (Pandina et al., 2007)	1.37 mg/day	Double-blind, placebo-controlled trial	55 individuals aged 5-12	8 weeks	Aberrant Behavior Checklist-Irritability (ABC-I) subscale	Well tolerated and significantly improved irritability and related aggressive behaviors
	Risperidone or Aripiprazole (Alsayouf et al., 2021)	Risperidone 0.25-2 mg/day Aripiprazole 1-10mg/day	Retrospective case study	10 individuals aged 2 and 4	2 weeks	Childhood Autism Rating Scale 2-Standard Test and Clinical Global Impression scales	Improvement of ameliorating comorbid behaviors
	Fluoxetine (Reddihough et al., 2019)	4 or 8 mg/day-20 or 30 mg/day	Multicenter, randomized, placebo-controlled clinical trial	146 individuals aged 7.5-18	16 weeks	CYBOCS-PDD	Significantly lower scores for obsessive-compulsive behaviors
	Fluoxetine (Herscu et al., 2020)	11.8 mg/day	Randomized controlled trial	158 individuals aged 5-17	14 weeks	Children's Yale-Brown Obsessive Compulsive Scale	No significant improvement were noted on the Children's Yale-Brown Obsessive Compulsive Scale

JZUS-B