EFFECTS OF BETA-ADRENERGIC ANTAGONISM IN AUTISM SPECTRUM DISORDER

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ABSTRACT

Effective treatments for individuals with autism spectrum disorder are lacking, especially when it comes to pharmacological intervention, which can be an important addition to behavioral therapy. Currently available agents target co-occurring symptoms, such as aggression and irritability, and many cause considerable off-target effects. Few agents have been shown to reliably and effectively reduce the impact of other aspects of this disorder, particularly core symptomatology. In the present studies, the noradrenergic system was explored as a target for autism pharmacotherapy, given evidence suggesting elevated anxiety and autonomic dysregulation in individuals with autism. The effects of the beta-adrenergic antagonist propranolol on facial scanning, verbal problem solving, and a measure of social functioning were examined in adults and adolescents with autism via single-dose psychopharmacological challenges. Improvements associated with propranolol administration were observed for each of these domains, and some evidence supports a role of anxiety and autonomic activity in predicting response to treatment. Additionally, the assessment of an ongoing pilot trial investigating the combined effects of propranolol and early intensive behavioral intervention in young children with autism suggests that serial-dose studies with this agent are feasible. This line of work proposes beta-adrenergic antagonism as a potential therapeutic option for individuals with autism that merits further investigation in the form of large, randomized controlled clinical trials.