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Open-label trial of propranolol in autism spectrum disorder and effects on anxiety and GI symptoms

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Background: Many people with autism spectrum disorder (ASD) display significant gastrointestinal (GI) symptoms and exaggerated stress responses, the latter resulting in anxious and mood-related symptoms. Recent meta-analysis revealed that almost 40% of youth with ASD have at least one anxiety disorder. Many studies suggest that there is an increase in GI symptoms in those with ASD compared to those without ASD. In this study, the effects of the beta-blocker propranolol, which has anxiolytic effects, on these aspects of ASD were examined. Methods: Children and youths, ages 7-24, participated in a 12-week open-label trial of propranolol after completion of a 15-week propranolol clinical trial and 2-week wash out period. Clinical Global Impression (CGI) of severity (including anxiety and GI symptoms) and improvement were taken by an expert clinician at baseline and again after 12 weeks of taking propranolol. Results: Dependent samples t-tests with an alpha of 0.05 were used to determine significance. Propranolol significantly reduced anxiety after 12 weeks. Results for the effects of propranolol on GI symptoms are pending. We hypothesize that propranolol will also alleviate GI symptoms. Conclusions: Preliminary data shows that, in those with ASD, propranolol can lesson anxiety. This may result in a decrease in GI symptoms. Overall, this study may display a method of improving the quality of life for people with ASD.