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Abstract 21-1-06

Title: Systematic review investigating the relationship between autism spectrum disorder and metabolic dysfunction

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Background: Comorbidities associated with autism spectrum disorder (ASD), such as obesity, hypertension and dyslipidemia, relate to result in significant morbidity and mortality. It is important to understand what roles metabolic dysfunction play in altering metabolic homeostasis that result in comorbid disease. The objective of this systematic review is to examine metabolic dysfunction, specifically metabolic syndrome and its components, as well as type 2 diabetes mellitus (T2DM) as it relates to individuals with a diagnosis of ASD.

Method: We searched PubMed, Embase, Cochrane, PsychInfo, and Scopus from January 1, 1998 to October 12, 2018 for English, peer-reviewed, original articles containing adult and pediatric populations with any form of ASD and metabolic dysfunction, including T2DM, hyperglycemia, hypertension, dyslipidemia, or central obesity. Exclusion criteria included studies without ASD-specific results, basic science research, review papers, case studies, and medication clinical trials. Eight studies were included in this review, with a total of 70,503 participants with ASD and 2,281,891 in comparison groups.

Results: Within ASD populations, higher prevalence for metabolic syndrome components hyperglycemia, hypertension, and dyslipidemia were observed, as well as increased incidence and prevalence of T2DM. However, heterogeneity of study definitions and measurements should be noted. Potential mediators or moderators include age, sex, atypical antipsychotic use, and other comorbidities. The relationship between ASD and metabolic syndrome as a diagnosis or abdominal obesity has is unknown.

Conclusion: While there is evidence of increased prevalence of T2DM, hyperglycemia, hypertension, and dyslipidemia for those with ASD, the relationship is poorly understood. There is also lack of research investigating central obesity and risk of metabolic syndrome as a diagnosis. More research addressing these gaps is warranted to evaluate the risk of metabolic dysfunction in populations with ASD.

References:

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