

Genetic Overlap Between ADHD and Autism and Biochemical Factors Affecting It [Letter]

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Dear editor

We read a review article entitled “A Review on the Mechanism Between Different Factor and the Occurrence of Autism and ADHD” Xi et al published in Psychology Research and Behavior Management.¹ We appreciate the authors for this informative review article and would like to make some contributions.

In this review, the authors have specifically elaborated genetic aspects and pathogenic hypotheses of these two kinds of neurodevelopmental diseases in children, autism, and attention deficit hyperactivity disorder (ADHD) while analyzing the relationship between different environmental toxins and these two disorders.¹

Although, each disorder's individual genetic profile was described the review lacked a mention of the shared genetic overlap between the two disorders and the biochemical factors affecting it. We want to highlight those aspects by mentioning that in a recent study conducted by Ma et al SHANK2 has been shown to be a potential pleiotropic gene underlying the genetic overlap between ADHD and Autism.² It has been suggested that SHANK genes may play a crucial role in memory and executive dysfunctions found in a wide range of neuropsychiatric disorders, including ADHD and Autism Spectrum Disorder (ASD).³ There are also some biochemical factors that seem to affect the genes that ADHD and autism share. Recent studies have shown that Zn²⁺ ions are able to modulate the Postsynaptic Density (PSD) scaffold of synapses via the autism-associated proteins SHANK2 and SHANK3.⁴ Zinc deficiency has also been associated with ADHD. In a study conducted by El-Bakry et al Zinc was found to be significantly deficient in patients with ADHD compared with healthy controls, so it was concluded that zinc deficiency might play a role in the etiopathogenesis of ADHD.⁵

The shared genetic overlap between ADHD and Autism and the biochemical factors that affect that overlap makes it imperative that a thorough study is conducted in this direction to reduce the ambiguity underlying these disorders and to figure out efficient ways to prevent them.

Disclosure

The authors report no conflicts of interest in this communication.

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