

Assessment of Biometal Profile in Children with Autism Spectrum Disorder, with Attention Deficit Hyperactivity Disorder, or with Other Psychiatric Diagnoses: A Comparative Outpatient Study

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Abstract

Background:

In recent years, the impact of various micronutrients on the symptoms of ADHD and ASD has been studied. Our study was aimed at evaluating the association between the level of serum magnesium, zinc and ferritin in children diagnosed with ADHD and/or ASD.

Methods:

This case-control pilot study consisted of 32 children who met DSM-V criteria for ADHD, 15 children who met DSM-V criteria for ASD and 12 age-matched control children from Electronic Medical Record database. Serum magnesium, zinc and ferritin values were compared with ANOVA.

Results:

Blood ferritin level was found to be significantly lower in affected groups ($F=5.9$, $p=0.0056$). A trend towards decreased values of plasma zinc level was also found in affected children ($F=2.25$, $p=0.12$); whereas no suggestion of any difference in blood magnesium levels between three groups was significant. Non-parametric analyses were also run and the p value for ferritin 0.08, showed weaker evidence of significance.

Conclusions:

Results of this study indicated that low level of blood ferritin may be a risk factor for development of ASD and ADHD. Future investigations with larger controlled trials are needed and correlational studies would also be helpful.