Investigation of Anti-Toxoplasma Antibodies in children and adolescents with Attention Deficit Hyperactivity Disorder

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Abstract

Background:
There is evidence to suggest that Toxoplasma gondii, which causes toxoplasmosis, changes the metabolism of neurotransmitters especially dopamine and causes neurological and psychiatric disorders. On the other hand catecholaminergic dysregulation, especially norepinephrine and dopamine have been proposed in the pathophysiology of attention deficit hyperactivity disorder (ADHD). The aim of the present study was to investigate the anti-Toxoplasma antibodies in children and adolescents with ADHD and compare it with healthy individuals.

Materials and methods:
A total of 117 outpatient children and adolescents with ADHD and 83 healthy children and adolescents participated in the study. They were tested for the presence of anti-T. gondii antibodies by ELISA. Parent ADHD Rating Scale and Clinical Global Impression-severity Scale (CGI-S) also completed. Data were analysed using Chi-square test and Fisher exact test.

Results:
Anti-Toxoplasma antibodies were detected in 18.1% of patients with ADHD disorder and 24.09 % of healthy individuals. There was no significant difference in seropositivity between two groups (P> 0.05). The seroprevalence of T. gondii infection in the three sub- groups was 0%, 21.42%, and 16.9%, respectively. The differences in infection rate among the subgroups were not statistically significant (P > 0.05).

Conclusion:
The present study does not support the contamination with toxoplasma gondii as a risk factor for ADHD.