Antioxidant status and DNA damage in children with attention deficit hyperactivity disorder with or without comorbid disruptive behavioral disorders

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Abstract

Objective:
This aim of this study is to investigate oxidative stress and DNA damage among children with attention deficit hyperactivity disorder (ADHD) with or without disruptive behavioral disorders (DBD).

Methods:
A total of 49 treatment naïve children (M/F: 40/9) who were diagnosed with ADHD according to the Diagnostic and Statistical Manual of Mental Disorders (DSM) IV criteria were included. The patients with ADHD were divided into two groups, those with ADHD alone (n= 25) and ADHD plus DBD (n=24). The control group consisted of 40 age- and sex-similar healthy children. The Schedule for Affective Disorders and Schizophrenia for School Aged Children- Present and Life-time version (K-SADS-PL) was applied to all children. Children’s teachers completed the Turgay DSM-IV Based Child and Adolescent Behavior Disorders Screening and Rating Scale (T-DSM-IV-S). Serum glutathione peroxidase (GPx), coenzyme Q, 8-hydroxy-2-deoxyguanosine (8-OHdG) and superoxide dismutase (SOD) levels were measured by the ELISA method using commercial kits.

Results:
There were no significant differences in serum GPx, SOD, CoQ and 8-OHdG levels among the pure ADHD, ADHD plus DBD and the control groups (p>0.05). No statistically significant correlations were found between the severity of ADHD symptoms and GPx, SOD, CoQ and 8-OHdG levels.

Conclusion:
Our study suggests that oxidative stress may not play a key role in the pathogenesis of pure ADHD and ADHD plus DBD.