Availability of dopamine transporters and auditory P300 abnormalities in adults with attention-deficit hyperactivity disorder: preliminary results.

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Abstract

OBJECTIVE:
Previous studies have indicated that there is dopamine transporter (DAT) dysregulation and P300 abnormality in adults with attention-deficit hyperactivity disorder (ADHD); however, the correlations among the three have not been fully explored.

METHODS:
A total of 11 adults (9 males and 2 females) with ADHD and 11 age-, sex-, and education-level-matched controls were recruited. We explored differences in DAT availability using single-photon emission computed tomography and P300 wave of event-related potentials between the two groups. The correlation between DAT availability and P300 performance was also examined.

RESULTS:
DAT availability in the basal ganglia, caudate nucleus, and putamen was significantly lower in the ADHD group. Adults with ADHD had lower auditory P300 amplitudes at the Pz and Cz sites, as well as longer Fz latency than controls. DAT availability was negatively correlated to P300 latency at Pz and Fz.

CONCLUSIONS:
Adults with ADHD had both abnormal DAT availability and P300 amplitude, suggesting that ADHD is linked to dysfunction of the central dopaminergic system and poor cognitive processes related to response selection and execution.