Brain Dopamine Transporter Availability is Associated with Response Time (RT) Variability in Adults with ADHD

Wei-Chen Chuang, Chin-Bin Yeh, Wen-Sheng Huang, Susan Shur-Fen Gau, Jia-Fwu Shyu, Kuo-Hsing Ma

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Abstract

Objectives:
This study evaluated dopamine transporter availability (DAT) in the response time (RT) variability of adults with attention-deficit/hyperactivity disorder (ADHD).

Methods:
Twenty-four adults with ADHD and 12 healthy control subjects completed the Connors’ Continuous Performance Test (CPT) and were then screened with the Adult Self-Report Scale (ASRS). The severity of ADHD was assessed with the Conners’ Adult ADHD Rating Scales (CAARS). The sub-scores on the CPT were selected as the variables of RT variability. Pearson’s correlation was utilized to investigate the association of DAT and RT variability in adults with ADHD.

Results:
There were significant associations between RT variability and DAT availability concentration. More RT variability, including Hit reaction time standard error, Variability of Standard Error, Hit Reaction Time Block Change, and Hit Standard Error Block Reaction Time change, as well as attention problems (omission errors) and cognitive inflexibility (perseveration) on the CPT, were present in adults with ADHD compared to healthy controls.

Conclusions:
Abnormal brain dopamine transmission might be associated with greater RT variability, which might lead adults with ADHD to have inconsistent and poorer performance on higher-order cognitive activities.