Cognitive and emotional impairments in adults with attention-deficit/hyperactivity disorder and cocaine use


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Abstract

Background
Attention-deficit/hyperactivity disorder (ADHD) is an important modulator of cognitive and social functioning in cocaine addiction but it is unclear whether ADHD symptoms and cocaine use display mutually aggravating interaction effects on cognition, social functioning and depressive symptoms. Therefore, we investigated the interaction of cocaine use and adult ADHD on social and non-social cognition and depressive symptoms.

Methods
Twenty-four cocaine users with (CU + ADHD) and 30 without ADHD (CU-ADHD), 29 cocaine-naïve ADHD patients, and 40 cocaine-naïve healthy controls underwent comprehensive neuropsychological testing including assessment of social cognition (cognitive/emotional empathy and Theory-of-Mind). Additionally, depressive symptoms were measured with the Beck Depression Inventory.

Results
The effect size of global cognitive impairment was largest in CU + ADHD (d = 1.22 vs. controls) followed by CU-ADHD (d = 0.74), and cocaine-naïve ADHD patients (d = 0.33). A similar pattern appeared regarding depressive symptoms (CU + ADHD: d = 1.47; CU-ADHD: d = 0.49, ADHD: d = 0.34). In the measures of Theory-of-Mind (CU + ADHD: d = 0.76; CU-ADHD: d = 0.06, ADHD: d = 0.01) and cognitive empathy (CU + ADHD: d = 0.80; CU-ADHD: d = 0.39, ADHD: d = −0.11) only CU + ADHD showed moderate to large impairments. Moreover, two-way analyses of covariance revealed a significant interaction effect of the factors ADHD and cocaine use on depressive symptoms (p < .05) and Theory-of-Mind (p < .05) but not on global cognitive performance (p=.64).

Conclusions
When occurring together, cognitive impairments associated with both ADHD and cocaine use are largely additive, whereas both factors seem to mutually potentiate one another with respect to mood and mental perspective-taking disturbances. Given the high comorbidity between ADHD and cocaine use, longitudinal studies are needed to investigate the origin of these potentiated impairments.