The Relation Between ADHD Medication and Mild Cognitive Impairment, as Assessed by the Montreal Cognitive Assessment (MoCA), in Patients Entering Substance Use Disorder Inpatient Treatment

Helene Bergly T, Julius Sømhovd M.


Abstract

OBJECTIVE:
Attention-deficit/hyperactivity disorder (ADHD) frequently co-occurs with substance use disorders and has some overlapping symptoms with mild cognitive impairment, including executive functions. We wanted to investigate whether patients with ADHD have an excess risk of mild cognitive impairment-like symptoms, as defined by the Montreal Cognitive Assessment (MoCA). Second, we assessed the impact of ADHD medication on the dichotomized MoCA for patients with ADHD.

METHODS:
The participants in this study were 129 inpatients at seven treatment clinics in Norway. All were screened with the MoCA. We calculated relative risk estimates (RR) for scoring in the mild cognitive impairment range (< 26) for those having ADHD. Finally, we calculated the RR for the patients within the ADHD group who were taking medication.

RESULTS:
Of the 129 participants included in the analyses, 38 (29.5%) scored below the MoCA threshold (< 26), and 24 (18.6%) had ADHD that was diagnosed before or during the inpatient treatment. Of the 105 participants without ADHD, 31 (29.5%) scored below the threshold. Seven (29.2%) of those with ADHD scored below the threshold. The risk of scoring in the mild cognitive impairment range for those with and without ADHD was equal (RR = 0.98). Of the 24 patients with ADHD, 9 (37.5%) were taking medication at the time of testing. One of the patients taking medication scored below the threshold compared to six of those not taking medication. This suggests a 72% lower risk of mild cognitive impairment-like symptoms when taking medication (RR = 0.28); however, the effect was not significant.

CONCLUSIONS:
We revealed no excess risk of mild cognitive impairment-like symptoms for the ADHD group. However, within the ADHD group, there was a possible lower risk of mild cognitive impairment-like symptoms for patients taking medication. These results suggest that there may be a confounding overlap of symptoms between ADHD and cognitive function screens that necessitates adequate assessment and treatment of ADHD before screening or measuring cognitive function.