Is Cannabis Use Associated with the Worst Inpatient Outcomes in Attention Deficit Hyperactivity Disorder Adolescents?


Abstract

Objective
To determine the impact of cannabis use disorder (CUD) on the inpatient outcomes of attention deficit hyperactivity disorder (ADHD) in adolescents

Background
Previous studies have evaluated the impact of CUD on the health-related quality of life in ADHD patients.

Methods
We used the nationwide inpatient sample (NIS) from the Healthcare Cost and Utilization Project (HCUP) from years 2010–2014. We identified ADHD and cannabis use (CU) as the primary and the other diagnosis, respectively, using validated International Classification of Diseases, 9th Revision, and Clinical Modification (ICD-9-CM) codes. We used the binomial logistic regression model to generate adjusted odds ratios (aOR).

Results
We analyzed a total of 11,232 ADHD adolescent hospital admissions from years 2010-2014; of these, 1.79% had CUD. The mean age of adolescents was 14.1 years (SD = 1.79). The prevalence of CUD was highest in ADHD adolescents of 15-18 years (73%) and common in the white race (71%). A higher proportion of ADHD with CUD was transferred to acute care hospitals and skilled/other nursing facilities (5.4% and 7.4% vs. 1.1% and 2.6%, respectively, p-value < 0.001). CUD increases the risk of inpatient charges > $12,247 (median) by 0.6 times (aOR = 1.835; p-value = 0.002) and increases the risk of inpatient stay > 5 days (median) by 0.7 times (aOR = 2.099; p-value < 0.001). The utilization of psychotropic medications was reduced by 0.8 times in ADHD with CUD adolescents by 0.8 times (aOR = 0.448; p-value = 0.017), and the implication of behavioral therapy in the management of ADHD with CUD adolescents was reduced by 0.9 times (aOR = 0.412; p-value = 0.048). Also, there is a 2.8 times higher risk of comorbid alcohol abuse in ADHD with CUD adolescents (aOR = 17.141; p-value < 0.001).

Conclusion
The increased risk of substance use is a long-term implication of ADHD in adolescents. It has been determined that comorbid CUD in patients with ADHD not only increases the risk of acute inpatient care but also prolongs the inpatient stay, thus increasing the healthcare cost. Surprisingly, comorbid CUD decreases the utilization of psychotropic medications and behavioral therapy in ADHD. Another major issue is the higher risk of comorbid alcohol abuse in ADHD with CUD adolescents. Further exploration with randomized controlled studies would be required to support and highlight the growing issue of cannabis use among adolescents with ADHD.