# It is illegal to post this copyrighted PDF on any website. Response of Refractory Gambling Disorder to Intravenous Ketamine

Jon E. Grant, JD, MD, MPH<sup>a,\*</sup>, and Samuel R. Chamberlain, MD, MPH<sup>b,c</sup>

Gambling disorder is a disabling condition with a lifetime prevalence of around 2% in the United States. It results in psychosocial impairment, financial and family problems, and elevated rates of suicide. Current treatments for gambling disorder include cognitive-behavioral therapy and opioid antagonists, but these treatments are often difficult for patients to access. By decreasing the incentive-motivational value of reward-related cues<sup>1</sup> via antagonism of *N*-methyl-D-aspartate receptors in the prefrontal cortex and mesolimbic regions,<sup>2</sup> ketamine merits consideration as a candidate treatment for gambling disorder, and its use may yield valuable information about the brain regions implicated in the pathophysiology of problematic gambling behaviors. We hereby present a case of gambling disorder that responded to intravenous ketamine.

## **Case Report**

Mr A was a 44-year-old man with gambling disorder of 20-year duration. He primarily engaged in casino gambling and did so on a weekly basis for at least 6 hours per episode, resulting in significant financial problems (in the last 12 months, he had lost 80% of his gross income to gambling) and frequent thoughts of suicide. He had completed trials, each of at least 6 weeks' duration, of selective serotonin reuptake inhibitors, naltrexone, lithium, and atypical antipsychotics. He had also completed several courses of individual and group cognitive-behavioral therapy for gambling specifically and had attended Gamblers Anonymous for many years. With all of these treatments, the longest abstinence he was able to achieve was approximately 1 month, and that was several years previously.

<sup>a</sup>Department of Psychiatry and Behavioral Neuroscience, University of Chicago, Chicago, Illinois

<sup>b</sup>Department of Psychiatry, University of Cambridge, Cambridge, United Kingdom

<sup>c</sup>Cambridge Peterborough NHS Foundation Trust, Cambridge, United Kingdom

\*Corresponding author: Jon E. Grant, JD, MD, MPH, Department of Psychiatry and Behavioral Neuroscience University of Chicago, 5841 S. Maryland Ave, Chicago, IL 60637 (jongrant@uchicago.edu). Prim Care Companion CNS Disord 2020;22(1):19/02480

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Before receiving ketamine, Mr A's score on the Yale-Brown Obsessive-Compulsive Scale adapted for Pathological Gambling (PG-YBOCS)<sup>3</sup> was 31, consistent with severe illness severity. At the time of receiving ketamine, he was taking no psychotropic medications.

Mr A underwent a total of 4 sessions of intravenous ketamine over 2 weeks. The dose of ketamine hydrochloride was 0.5 mg/kg, and it was delivered intravenously over 45 minutes twice weekly for 2 weeks. His overall gambling disorder symptoms improved from a pretreatment PG-YBOCS score of 31 to a score of 7 after the second infusion. This improvement has continued for the subsequent 6 months (ie, to date) with no gambling behavior and only fleeting thoughts of gambling. Mr A reported no side effects related to treatment.

## Discussion

This case illustrates that ketamine merits consideration as a treatment option for severe, refractory gambling disorder. Previous research<sup>4</sup> in the area of substance use disorders suggests that ketamine targets both craving and the disproportionate valuation of immediate over delayed rewards. Further research is needed to confirm these findings and characterize the neural mechanisms involved.

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