

The Use of Ketamine as a Treatment for Depression and Alcohol Use Disorders

Nusrath Zuha*

Department of nutrition, Bangabandhu Sheikh Mujibur Rahman Science and Technology University, Gopalganj, Bangladesh

Abstract

Ketamine, described by the formula $C_{13}H_{16}ClNO$, is most ordinarily related to adolescent and adult narcotic users and ravers who abuse this drug to experience a euphoric and dissociative state. Although this drug may be a federal schedule III drug as a result of this abuse potential, ketamine has experienced a renaissance in clinical interest in recent years.¹ Although clinical use of ketamine is controversial, it's become a focus of pharmacological research thanks to its considerably diverse molecular targets and neurophysiological properties.² In fact, recent studies have cited ketamine as a possible therapy for depression, including treatment resistant varieties, also as alcohol use disorders.

*Corresponding author:
Nusrath Zuha

✉ nusrathzuha@gmail.com

Department of Statistics, Bangabandhu Sheikh Mujibur Rahman Science and Technology University, Gopalganj, Bangladesh

Tel: 0026681357

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Pharmacological Profile of Ketamine

Ketamine may be a general anaesthetic used for brief term diagnostic procedures and surgery.⁴ However, expanded use in medical settings has been limited thanks to its negative psychological effects, including vivid hallucinations, agitation, and confusion.⁴ Ketamine's mechanism of action is different from most hypnotic, antidepressant and mood disorder treating pharmaceuticals like benzodiazepines, as ketamine doesn't interact with GABA receptors. Its specific and detailed physiological impacts haven't been entirely explored, but at a basic level, ketamine may be a non-competitive (allosteric) antagonist of N-methyl-D-aspartate (NMDA) receptors.²

Solution to Treatment Resistant Depression

Depression may be a sometimes episodic and sometimes chronic mental disease which will feature discrete symptomatic periods separated by periods of apparent wellness.⁸ It's the third leading explanation for disability worldwide affecting on the brink of 350 million individuals.^{9, 10} Depression in individuals can have varied causation and should be treated differently for various people. Due to this non-uniformity of causation and manifestation of depression, it's imperative that these underlying factors be examined to make sure that each one relevant issues are taken under consideration before treatment.

Treatment of Alcoholism

Substance overuse and abuse disorders like alcohol use disorder

and other substance use disorders are among the leading causes of avoidable mortality and morbidity worldwide, affecting 19.7 million individuals within the US over the age of 12.^{15, 16} Additionally, 74% of these that suffer from a drug abuse disorder are simultaneously affected by an alcohol use disorder.¹⁶ As a result, when treating for alcoholism, researchers must make sure that they examine the entire clinical formulation, treating all aspects and angles to make sure nothing is missed. A treatment serving as a suppressor of desire to consume alcohol in a private may convince be an ineffective therapy for the comorbid condition.

Conclusion

Based on the evidence provided by recent studies, the utilization of ketamine as a possible therapy for depression, including treatment resistant varieties, also as alcohol use disorders, has the potential to significantly benefit individuals suffering from these conditions as an alternate to traditional treatments. Future clinically directed research is warranted to work out whether ketamine treatment is that the psychological breakthrough which will best address these conditions.^L