Assessing the Neuropsychiatric Sequelae of Ketamine After Use for Acute Agitation

Steven Sun, MD, Henry Slone, MD, Katherine Martin, MD, Edward Norris, MD, FACLP, DFAPA Lehigh Valley Health Network, Allentown, Pa.

Background

Ketamine is primarily known as a commonly used anesthetic agent, but in recent years has increasingly become a mainstay for treatment of acute agitation in emergency departments (EDs). 1,2,3 Recent studies have focused on its efficacy in treating acute agitation and subsequent complications thereof. However, there remains conflicting information and gaps in knowledge regarding the neuropsychiatric sequelae of ketamine administration for acute agitation. 1,2,4,5

Methods

A retrospective chart review of any patient over the age of 18 years old given ketamine for agitation in Lehigh Valley Health Network's ED between 04/26/21 through 10/22/21 was performed. Patients receiving ketamine for procedural or anesthetic use were excluded. The following variables were collected: age, gender, previous psychiatric diagnosis, initial delirium, follow up delirium, emergence reaction, and new psychiatric diagnosis or exacerbation of a prior psychiatric disorder within 30 days of administration. Subsequently, descriptive statistics were conducted.

Results

186 charts were identified, but only 33 met criteria for inclusion. There were 21 males and 12 females. Age of patients ranged from 20-74 years old with a mean age of 43 years. 70% of patients had a previous psychiatric diagnosis, 24% had initial delirium, 0% had follow up delirium, 3% had an emergence reaction, 24% had the onset of a new psychiatric disorder, and 15% had an exacerbation of their psychiatric disorder.

DEMOGRAPHICS

Total Patient Population from 04/26/21 to 10/22/21	186 pts
Eligible Patients	33 pts/186 pts = 18% 21 M/33 pts = 64% 12 F/33 pts = 36%
Age	Range = 20-74 years Mean = 43.42 years Standard Deviation = 14.47

DESCRIPTIVE STATISTICS, TOTAL POPULATION

Variable	Yes	No
Previous psychiatric diagnosis	23/33 = 69%	10/33 = 30%
Initial Delirium	8/33 = 24%	25/33 = 76%
Follow Up Delirium	0/33 = 0%	33/33 = 100.%
Emergence Reaction	1/33 = 3.%	32/33 = 97%
New Schizophrenia	1/33 = 3%	32/33 = 97%
New Mood disorder	5/33 = 15%	28/33 = 85%
New Anxiety Disorder	2/33 = 6%	2/33 = 97%
Exacerbation within 30 days	5/33 = 15%	28/33 = 85%

Discussion

The results showed minimal risk of neuropsychiatric side effects following ketamine administration for acute agitation. The development of emergence reactions and post-ketamine delirium was rare. Additionally, only a minority of patients had the onset of a new psychiatric disorder.

Conclusions/Implications

This study demonstrates the relative lack of neuropsychiatric sequelae following ketamine administration for acute agitation.

REFERENCES

- 1. Green, Steven M., Mark G. Roback, Robert M. Kennedy, and Baruch Krauss. 2011. "Clinical Practice Guideline for Emergency Department Ketamine Dissociative Sedation: 2011 Update." Annals of Emergency Medicine 57 (5): 449–61.
- 2. Mo, Hanjie, Matthew J. Campbell, Baruch S. Fertel, Simon W. Lam, Elizabeth J. Wells, Elizabeth Casserly, and Stephen W. Meldon. 2020. "Ketamine Safety and Use in the Emergency Department for Pain and Agitation/Delirium: A Health System Experience." The Western Journal of Emergency Medicine 21 (2): 272–81.9
- 3. Roppolo, Lynn P., David W. Morris, Fuad Khan, Rohini Downs, Jeffery Metzger, Tiffany Carder, Ambrose H. Wong, and Michael P. Wilson. 2020. "Improving the Management of Acutely Agitated Patients in the Emergency Department through Implementation of Project BETA (Best Practices in the Evaluation and Treatment of Agitation)." Journal of the American College of Emergency Physicians Open 1 (5): 898–907.
- 4. Hopper, Austin B., Gary M. Vilke, Edward M. Castillo, Ashleigh Campillo, Timothy Davie, and Michael P. Wilson. 2015. "Ketamine Use for Acute Agitation in the Emergency Department." The Journal of Emergency Medicine 48 (6): 712–19.
- 5. Sullivan, Natalie, Chen Chen, Rebecca Siegel, Yan Ma, Ali Pourmand, Nataly Montano, and Andrew Meltzer. 2020. "Ketamine for Emergency Sedation of Agitated Patients: A Systematic Review and Meta-Analysis." The American Journal of Emergency Medicine 38 (3): 655–61.





