Psychiatric Outcomes Following Ketamine Administration for Orthopedic Surgical Anesthesia

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Background: Ketamine is a non-barbiturate general anesthetic commonly used in a variety of medical settings for pain and sedation. Its use in treatment for psychiatric illnesses has been increasing in recent years, showing promise in reducing depressive and suicidal symptoms in patients, particularly surgical patients. However, it has a history of association with schizophrenia-like and psychotomimetic symptoms following administration, particularly in patient populations with previous mental illness and youths.

Objective: Using a retrospective cohort study of patient records from a large health database, we sought to investigate psychiatric outcomes in age-specific cohorts following ketamine administration for orthopedic surgical anesthesia.

Methods: This was a retrospective analysis of the TriNetX health database. We identified all patients undergoing orthopedic surgeries with anesthesia. We then performed four total group analyses between cohorts of patients receiving ketamine and cohorts not receiving ketamine. We had three sets of analysis based on age stratification and one ageless: pediatric (<18 years), adult (18–60 years), elderly (>60 years), and a reference analysis of all patients.

Results: In 406,384 patients studied, nearly every measured event displayed an increased risk for patients receiving ketamine as part of their anesthesia. Apart from anhedonia, which had a decreased risk of occurrence, every event displayed increased incidence in at least two of the cohorts. For all but one event, nicotine use, the significant differences between groups were in concordance with each other.

Conclusion: Our findings suggest ketamine use should be investigated further in different age groups and corresponding psychiatric outcomes.