

Ketamine vs. Midazolam: Comparative Analysis in Emergency Sedation

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ABSTRACT

This study compares the efficacy and safety of ketamine and midazolam for anxiety management in emergency department (ED) sedation, with emphasis on hemodynamic effects and relevance to the Saudi Arabian healthcare context. A literature review of peer-reviewed studies was conducted using PubMed, Scopus, and Web of Science. Comparative analyses focused on sedation effectiveness, onset time, hemodynamic stability, and respiratory effects. Ketamine provides rapid dissociative sedation with minimal respiratory depression but is associated with hypertension and emergence reactions. Midazolam offers smoother sedation with fewer psychiatric side effects but carries risks of hypotension and respiratory depression. Observational studies in Saudi Arabia indicate a need for tailored sedation strategies due to the high prevalence of cardiovascular disease and obesity, which influence drug metabolism and side effects. Both ketamine and midazolam have clinical utility in ED sedation, necessitating careful patient selection. While ketamine is effective for anxiety reduction, its hypertensive effects require monitoring. Midazolam provides controlled sedation but demands vigilance for respiratory depression. Further region-specific studies are essential to optimize sedation protocols for patient safety.

Keywords: Ketamine, Midazolam, Emergency Department, Sedation, Anxiety, Saudi Arabia

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