INPLASY PROTOCOL

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Support: **NA.**

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Conflicts of interest:
None declared.

Etomidate Vs Ketamine in Rapid Sequence Intubation in Emergency Department

Beg, S[1]; Palta, KP[2]; Roy, B[3].

Review question / Objective: **Review Question: Does induction with etomidate for for a rapid sequence intubation in emergency department have be better results in terms of decreased mortality and improved clinical outcomes in comparison to induction with Ketamine ?**
Condition being studied: **Mortality and clinical outcomes after rapid sequence intubation in emergency department. Eligibility criteria: Inclusion criteria: studies with patients above 18 years old, male or female who has reported to emergency department and undergoing emergency endotracheal intubation for critical illness, including but not limited to trauma, stroke, myocardial infarction, arrhythmia, septic shock, hypovolaemic or haemorrhagic shock, and undifferentiated shock states; patient undergoing Rapid Sequence Intubation with Etomidate, patient undergoing Rapid Sequence Intubation with Ketamine; Randomized Control Trial, Prospective trials. No language restrictions.Exclusion criteria: animal studies, case-control studies, cross-sectional studies, case report or series, conference abstracts or poster presentations.**

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 28 March 2022 and was last updated on 28 March 2022 (registration number INPLASY202230159).

INTRODUCTION

Review question / Objective: **Review Question: Does induction with etomidate for for a rapid sequence intubation in emergency department have be better results in terms of decreased mortality and improved clinical outcomes in comparison to induction with Ketamine ?**

Rationale: **According to the published research, different combinations of drugs are used for rapid sequence intubation (RSI) based on hospital standard and**

policy; nonetheless, there is still debate over which is the best option. Propofol is the most often used medication for RSI in emergency dependents (ED), because of the shorter period of induction, fast recovery of consciousness and less adverse effects. Etomidate and ketamine have also been identified as the popular sedatives used in RSI, which has not been assessed much in the published literature.

Condition being studied: Mortality and clinical outcomes after rapid sequence intubation in emergency department.

METHODS

Search strategy: Following PRISMA guidelines, we will devise a methodological search approach. We will conduct a grey literature research, which includes looking through medical publication and bibliographies of the pertinent studies. We will include randomized and randomized prospective trials in which ketamine and etomidate are compared to each other or another intravenous sedative in the process of endotracheal intubation and at least one outcome of the interest is reported.

Participant or population: Patients presenting to the emergency department requiring endotracheal intubation.

Intervention: Rapid sequence intubation with etomidate as an induction medication.

Comparator: Rapid sequence intubation with ketamine as an induction medication.

Study designs to be included: Randomized controlled trials, non-randomized retrospective or prospective trial, prospective observational cohort studies.

Eligibility criteria: Inclusion criteria: studies with patients above 18 years old, male or female who has reported to emergency department and undergoing emergency endotracheal intubation for critical illness, including but not limited to trauma, stroke, myocardial infarction, arrhythmia, septic shock, hypovolaemic or haemorrhagic shock, and undifferentiated shock states; patient undergoing Rapid Sequence Intubation with Etomidate, patient undergoing Rapid Sequence Intubation with Ketamine; Randomized Control Trial, Prospective trials. No language restrictions.Exclusion criteria: animal studies, case-control studies, cross-sectional studies, case report or series, conference abstracts or poster presentations.

Information sources: Published databases and non-published databases including Google Scholar, PubMed, Medline, Web of Science, Scopus, Embase, Cochrane, and grey literature.

Main outcome(s): Comparison of mortality, improved clinical outcomes and post intubation complications in people undergoing RSI.

Additional outcome(s): Period of induction, recovery of consciousness, total mechanical ventilator days, post intubation hemodynamic compromise, first attempt intubation, Hospital length of stay, ICU length of stay, any other adverse effects.

Data management: Two researchers will screen the titles and abstracts of search results and select the studies. If the results are not clearly irrelevant, the full text will be downloaded and reviewed. Both reviewers will individually rate each other selected studies and solve disagreements by consensus. A third and more experienced reviewer will be consulted when disagreements persist. The same two reviewers will then perform data extraction using pre established forms, including data on: - Title of the study, Authors, Journal name, Year, Pages, Database, Aim/ objective of the study, type of study, inclusion and exclusion criteria, Intervention and comparison, Methods of study selection, Patients' characteristics, Description and Assessment of outcome, Conclusions of the study.

Quality assessment / Risk of bias analysis: Risk of bias will be assessed using the Rob-2 Cochrane risk of bias tool. Downs

and Black 1998 criteria for scoring reporting bias, power, external validity, internal validity, and confounding, will be done.

Strategy of data synthesis: For data synthesis a standardized forms will be developed extracting information on Title of the study, Authors, Journal name, Year, Pages, Database, Aim/objective of the study, type of study, inclusion and exclusion criteria, Intervention and comparison, Methods of study selection, Patients' characteristics, Description and Assessment of outcome, Conclusions of the study. We plan to perform descriptive synthesis of the relevant data. Publication bias will be assessed by drawing funnel plots, while using I^2 heterogeneity will be assessed.

Subgroup analysis: Not planned.

Sensitivity analysis: Not planned.

Language: English.

Country(ies) involved: India.

Keywords: Etomidate; Rapid Sequence Intubation; Ketamine; Emergency Department.

Contributions of each author:

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