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PRONE VENTILATION IN INTUBATED COVID-19 PATIENTS: SYSTEMATIC REVIEW AND META-ANALYSIS

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INTRODUCTION: Prone ventilation is a well-established strategy in patients with severe ARDS as it has been shown to improve survival and mortality. However, in intubated patients with COVID-19 pneumonia, the data are limited, with no substantial evidence supporting its use. This meta-analysis is the first to examine the mortality benefit of prone ventilation in intubated COVID-19 patients.

METHODS: A systematic search according to Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines in Medline, Embase, and Web of Science databases was conducted in January 2022 for published studies assessing the mortality benefit of prone ventilation in intubated COVID-19 patients.

RESULTS: Four hundred sixty-seven studies were identified. Of those, five studies met the inclusion criteria studies were included. The total number of patients included in the studies was 4247 patients. In four studies, ARDS prevalence was reported. The prone group had a higher prevalence of severe ARDS rates than the supine group. No significant difference was found between prone or supine groups in ICU mortality (OR: 1.39; 95%CI: 0.80-2.43; p=0.24). Regarding overall mortality, No difference was detected between the prone or the supine groups (OR: 1.04; 95%CI: 0.57-1.87; p = 0.9), with significant heterogeneity (I²= 93; p < 0.001). The length of hospital stay (LOS) was reported in two studies. Our analysis showed that LOS did not differ between the prone and supine groups (SMD: 0.77; 95%CI: -0.33-1.86; p=0.17).

CONCLUSIONS: Prone ventilation in intubated COVID-19 patients does not offer a mortality benefit. Randomized controlled trials are warranted to confirm this finding and clarify whether specific subpopulations may benefit from prone ventilation.

RISK FACTORS FOR COPD EXACERBATION DURING HOSPITALIZATION AND THEIR IMPACT ON INPATIENT MORTALITY

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INTRODUCTION: Although the risk factors for COPD exacerbation have been identified, risk factors associated with COPD exacerbation during hospitalization and their impact on inpatient mortality remain to be studied. We conducted a retrospective data analysis to identify the most common admitting diagnoses among COPD patients who experienced an exacerbation during their hospitalization and studied their impact on inpatient mortality.

METHODS: Data from Health Care Utilization Project's National Inpatient Sample (NIS) 2019 were analyzed. The ICD-10 codes were used to identify the admitting diagnosis for all discharges with a secondary diagnosis of COPD exacerbation. We omitted discharges for patients under the age of 40 to avoid misclassification. The Rao-Scott Chi-square test was used to compare categorical variables. The odds ratios were calculated using multivariable logistic regression. National estimates were based on sample weights.

RESULTS: A total of 1,018,715 discharges had a secondary diagnosis of COPD exacerbation. The top admitting diagnoses were respiratory failure (20.4%), septicemia (17.9%), heart failure (HF) (14.4%), pneumonia (12.7%), bronchiectasis (4.8%), acute myocardial infarction (AMI) (2.2%), influenza (2.1%), cardiac dysrhythmias (1.9%), and aspiration pneumonitis (1.7%). All-cause mortality for all discharges with COPD exacerbation was 3.9%. Among discharges that experienced COPD exacerbation during hospitalization, higher mortality was noted for admitting diagnosis of septicemia (7.2%), AMI (5.6%), and aspiration pneumonitis (5.6%) (p < 0.0001 for all). In regression analysis, admitting diagnoses of septicemia (aOR:1.8;95% CI: 1.7-1.9; p < 0.0001) and AMI (aOR:1.3; 95% CI: 1.2-1.5;p < 0.0001) were associated with higher odds of inpatient mortality.

CONCLUSIONS: The most common admission diagnoses associated with COPD exacerbation during hospitalization were respiratory failure, septicemia, heart failure, and pneumonia. In addition, patients admitted for septicemia and AMI who experienced COPD exacerbation had a higher likelihood of inpatient mortality. COPD patients admitted for septicemia and AMI should be closely monitored for early identification of COPD exacerbations.