

Table of Contents

Ilea, Ian - #5586 - Trends in ICU Utilization and Outcomes among Patients with Acute Respiratory Failure Admitted to VA Hospitals Over Time	1
Abstract submission for Institutional Repository	1



Research Week 2023

Trends in ICU Utilization and Outcomes among Patients with Acute Respiratory Failure Admitted to VA Hospitals Over Time

Ian Ilea, Jennifer Y. Scott, Christopher G. Slatore, Donald R. Sullivan, Kelly C. Vranas

Center to Improve Veteran Involvement in Care, VA Portland Health Care System; Portland, USA

Keywords

acute respiratory failure, aging, intensive care unit utilization

Abstract

Rationale

Acute respiratory failure (ARF) is a common and potentially life-threatening condition that frequently requires intensive care unit (ICU) admission and mechanical ventilation (MV). It is important to understand trends in ICU utilization over time to inform efforts to optimize patient-centered outcomes and resource utilization, particularly in the setting of the aging U.S. population.

Methods

We performed a retrospective cohort study of adults ≥ 18 years hospitalized with primary or secondary diagnoses of ARF (defined by ICD-9/10 codes) at VA hospitals between 2012-2021. We conducted mixed effects logistic regression to evaluate risk-adjusted odds of ICU admission over time, including a random effect for hospital and effect modification for age group. We adjusted for patient demographics, illness severity, code status, hospital complexity level, and hospitalizations that occurred during the COVID-19 pandemic.

Results

Among 219,632 hospitalizations for ARF, 66,855 (30.4%) were admitted to the ICU. Median age of patients admitted to the ward vs. ICU was 71 (IQR: 64,78) and 69 (IQR: 63,75), respectively. Among ICU patients, 26.0% received MV and 25.3% received non-invasive ventilation. The observed in-hospital mortality decreased from 26.4% in 2012 to 21.6% in 2021 among ICU patients, and forward patients from 21.8% to 12.6%. In adjusted analyses, we found the odds of ICU admission decreased over time from 2012 to 2021 (OR: 0.47; CI: 0.43-0.52). Compared to patients < 65 years, older patients had lower odds of ICU admission (patients ≥ 80 years OR: 0.42; CI: 0.37-0.47; patients 65-79 years OR: 0.75; CI: 0.69-0.82).

Conclusions

Among patients hospitalized with ARF, ICU utilization and mortality are decreasing over time; however, older ARF patients have lower odds of ICU admission compared to younger patients even after adjusting for code status and illness severity. Future work is required to understand factors driving admission decisions and outcomes for different age cohorts of ARF patients.