

The Relationship Between Intensive Care Unit (ICU) Delirium Severity and 2-Year Mortality

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Background:

Delirium is an acute brain dysfunction characterized by altered cognition, attention, and level of consciousness. The presence of delirium is associated with increased risk of mortality, neurocognitive decline, and physical impairment; however, the role of ICU delirium severity in long-term health outcomes is less understood.

Objective:

Characterize the relationship between delirium severity and mortality risk in ICU survivors 2-years after discharge.

Methods:

A secondary analysis was performed on patient data collected in two randomized controlled trials (Pharmacological Management of Delirium and Deprescribing in the Pharmacologic Management of Delirium, 2009-2015). Participants received delirium assessments twice daily during hospitalization via the Confusion Assessment Method for the ICU (CAM-ICU-7). Patients enrolled at Eskenazi Hospital with complete mortality data were included in this study. Mean delirium severity was categorized as rapidly resolving (0-2), mild to moderate (2.1-5), or severe (>5). Cox proportional hazard model was used to quantify mortality risk associated with delirium severity. Analyses were adjusted for patient demographics, comorbidities, and severity-of-disease.

Results:

The cohort (n=434) was 54.6% female and 48.6% African American with an average age of 59.8 (SD 16.4). The admission diagnosis was acute respiratory failure/sepsis in 47.9% of patients across medical (n=272), progressive (n=52), and surgical (n=110) ICU types. Approximately one third of the original cohort (n=143) died within 2 years of index discharge. In the multivariate analysis, patients with severe delirium (>5) had nearly twice the adjusted hazard ratio for 2-year mortality compared to patients with mild-moderate delirium (aHR 2.1 [95% CI, 1.3-3.4] and aHR 1.1 [95% CI, 0.7-1.6], p=0.008).

Conclusion:

Severe delirium during ICU stay was significantly associated with increased 2-year mortality risk in comparison to mild-moderate (subsyndromal) delirium.

Impact:

The relationship between delirium severity and 2-year mortality underscores the need for further research on the mechanisms underlying ICU delirium and specific interventions to improve long-term outcomes.