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Submission Title: Impact of Prior and ICU Psychoactive Medication Use on Delirium in Critical Care Patients

SUBMISSION PREVIEW: IMPACT OF PRIOR AND ICU PSYCHOACTIVE MEDICATION USE ON DELIRIUM IN CRITICAL CARE PATIENTS

Impact of Prior and ICU Psychoactive Medication Use on Delirium in Critical Care Patients

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Abstract Content

INTRODUCTION

Delirium is a common and serious complication in critically ill patients, associated with worse outcomes. While various risk factors have been identified, the relationship between pre-ICU psychoactive medication

use, continuation in the ICU, and delirium outcomes remains unclear. This study investigates the association between prior psychoactive medication use, use in the ICU, and occurrence of delirium in critical care patients.

METHODS

We conducted a retrospective cohort study using electronic health record data from adult ICU patients. Psychoactive medication use was categorized as prior use (within 6 months before ICU admission) and ICU use. The primary outcome was delirium occurrence, assessed using the Confusion Assessment Method for ICU (CAM-ICU). Data were analyzed using Python, with missing data handled through imputation. We compared delirium rates across four groups: no prior use/no ICU use, prior use/no ICU use, no prior use/ICU use, and prior use/ICU use. Proportions of delirium cases with 95% confidence intervals were calculated for each group. Chi-square test assessed the overall relationship between medication use patterns and delirium occurrence.

RESULTS

The study included 38,021 patients (43% females; median age 64 years, IQR: 52-74). Delirium rates varied significantly across medication use patterns: 17.87% (95% CI: 17.37-18.37%) in patients with no prior or ICU use, 26.70% (95% CI: 25.87-27.53%) in those with prior use but no ICU use, 23.30% (95% CI: 21.25-25.34%) in those with ICU use only, and 32.96% (95% CI: 31.13-34.80%) in patients with both prior and ICU use. Chi-square analysis revealed a significant association between psychoactive medication use patterns and delirium occurrence ($\chi^2 = 550.0752$, $p < 0.0001$).

CONCLUSIONS

Our findings suggest that both prior and ICU use of psychoactive medications are associated with increased rates of delirium in critical care patients, with the highest risk observed in patients with both prior and ICU use. These results highlight the importance of considering psychoactive medication history in delirium risk assessment and management strategies.

Categories

General Classification
Clinical

Patient Type
Adult

Category
Research

Category Alternate 1
Neuroscience

Category Alternate 2

Keywords
delirium

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