Presentation Abstracts

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Incidence and impact of near-miss events during continuous renal replacement therapy in critically ill patients

Rogerio da Hora Passos[1], Isabela Argollo Ferreira[1], Bruno Zawadsky[2], Fernanda Oliveira Coelho[2]

[1] Hospital Israelita Albert Einstein, São Paulo, SP, Brazil.
[2] DaVita Tratamento Renal, São Paulo, SP, Brazil.

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Corresponding author
rogerio.passos@einstein.br

Introduction: Continuous Renal Replacement Therapy (CRRT) is essential for managing acute kidney injury (AKI) in critically ill patients.[1-4] However, the complexity of CRRT increases the risk of near-miss events-incidents that could cause harm but are intercepted before actual damage occurs.[5] This study investigates the incidence, risk factors, and outcomes of near-miss events during CRRT in a tertiary ICU setting. **Methods:** A retrospective cohort study was conducted over 24 months in the ICU of a tertiary care hospital. Data from 200 adult patients requiring CRRT for AKI were analyzed. Near-miss events, defined as incidents intercepted before causing harm, were identified and correlated with patient outcomes using descriptive statistics, multivariate logistic regression, and χ^2 tests. **Results:** Among 900 CRRT sessions, 150 near-miss events were recorded, yielding an incidence rate of 16.7 events per 100 sessions. Common near-miss events included circuit clotting (40%), electrolyte disturbances (30%), incorrect fluid balance adjustments (20%), and equipment malfunctions (10%). Key risk factors included higher APACHE II scores (OR=1.12), sepsis (OR=2.45), prolonged CRRT duration (OR=1.08 per 24 hours), and inadequate anticoagulation (OR=3.15). Patients experiencing near-miss events had higher ICU mortality (62% *versus* 32%), longer ICU stays (mean 14.2 *versus* 10.5 days), prolonged mechanical ventilation (mean 9.8 *versus* 6.7 days), and lower renal recovery rates (25% *versus* 40%). **Conclusion:** Near-miss events during CRRT are common and significantly impact patient outcomes. Enhanced monitoring, better anticoagulation protocols, and improved staff training are crucial to mitigating these risks and improving patient safety.

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