Acute kidney injury and outcomes in the cardiac intensive care unit. Data from the Critical Care Cardiology Trials Network (CCCTN) Registry

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BACKGROUND

• Acute kidney injury (AKI) is common in critically ill.
• Epidemiology of AKI in the contemporary cardiac intensive care unit (CICU) is not well studied.
• We aimed to describe the incidence, predictors, and outcomes of AKI in a multicenter CICU cohort.

METHODS

• The Critical Care Cardiology Trials Network (CCCTN) is an investigator-initiated multicenter network of advanced CICUs in the US & Canada.
• All consecutive medical admissions to each CICU (n = 42) were captured during annual 2-month collection periods (2017-2022, N=21,603).
• End-stage renal disease (ESRD) patients excluded.
• Logistic regression was used to assess predictors of AKI.

RESULTS

Table 1. KDIGO Stages and definitions

Table 2. Baseline parameters stratified by AKI stage

Table 3. Incidence of any AKI and AKI stage

Table 4. Incidence of AKI by CICU resource utilization

RESULTS (cont.)

• Sensitivity analysis with normal baseline eGFR subjects demonstrates a strong risk gradient with increase in AKI stage (Figure 2)
• The adjusted risk of in-hospital death was incrementally higher across AKI stages overall and for patients with ACS, CA, and CS (Figure 3).
• Limitation: “baseline” sCr was measured on CICU admission and may not reflect premorbid baseline.

CONCLUSIONS

• AKI affects nearly 1 in 4 patients in the CICU.
• In-hospital and CICU mortality increases with AKI severity and is ~40% in those with Stage 2 & 3 AKI.
• Strategies to mitigate AKI in CICU are necessary.

DISCLOSURE OF FACULTY RELATIONSHIPS:
The authors have no disclosures related to the content of this abstract.

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Figure 1. Overall incidence of AKI in the CICU

Figure 2. Mortality stratified by AKI Stages

Figure 3. Adjusted odds ratios of hospital death by AKI stage across selected cardiac diagnoses

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