

Design of the Multi-Centered International Retrospective Study: Worldwide Exploration of Renal Replacement Outcomes Collaborative in Kidney Disease (WE-ROCK)



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Introduction

- Acute kidney injury (AKI) and pathologic fluid overload (FO) are common in critically ill children and young adults, and continuous renal replacement therapy (CRRT) may be needed to manage the most severe of these
- There are limited contemporary pediatric multicenter studies of patients receiving CRRT for AKI or FO.
- The Worldwide Exploration of Renal Replacement Outcomes Collaborative in Kidney Diseases (WE-ROCK) investigator group was established in 2020 comprising pediatric physicians (intensivists, cardiac intensivists, nephrologists) and advanced practice nurses
- The global aim is to understand the epidemiology, practice differences, short- and long-term clinical and patient-centered outcomes of children receiving CRRT for AKI/FO.

Aims

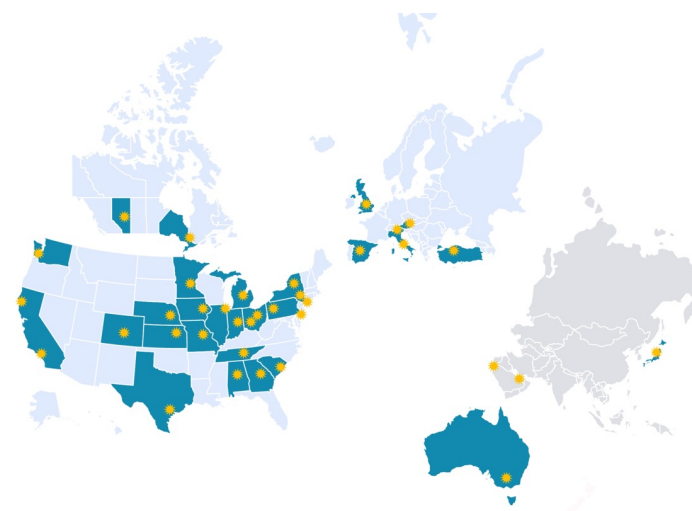
- (1) Describe the demographics and predictors of successful CRRT liberation
- (2) Understand the current CRRT techniques & practices
- (3) Evaluate the association of the timing of CRRT and pathologic FO at initiation on outcomes
- (4) Assess the patient centered outcomes among survivors using the functional status scale (FSS)

Methods and Materials

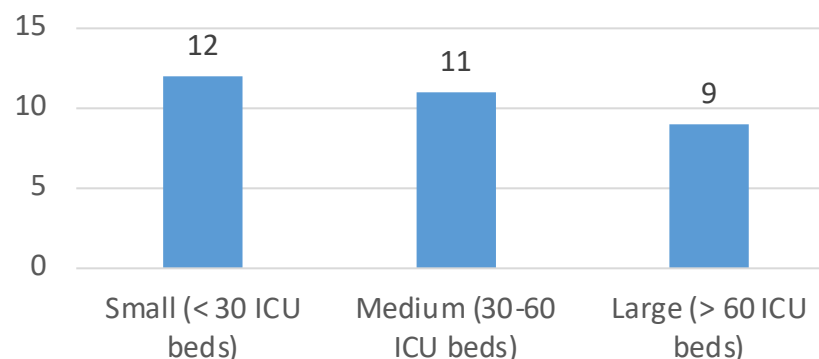
- Retrospective multi-center study
- Data entered into the registry from January to August 2022.
- **Inclusion:** Patients aged 0-25 years treated with CRRT for AKI, and/or FO from 2015-2021
- **Exclusion:**
 - ESKD and previous dialysis dependence
 - Infants with a known diagnosis of severe congenital anomalies of the kidney and urinary tract resulting in ESKD
 - CRRT for a non-AKI/FO indication (i.e., ingestion, inborn errors of metabolism, hyperammonemia).
 - Use of extracorporeal membrane oxygenation (ECMO) concurrently with CRRT or within the 7 days prior to CRRT initiation
 - Use of peritoneal dialysis (PD) in the same ICU admission prior to CRRT initiation (i.e., patients in the cardiac intensive care unit who received PD post-surgically)

Results

- Study enrollment: 992 patients from 32 centers, 7 nations
- Data collection includes baseline characteristics, CRRT prescription, outcomes through 90 days after CRRT initiation.

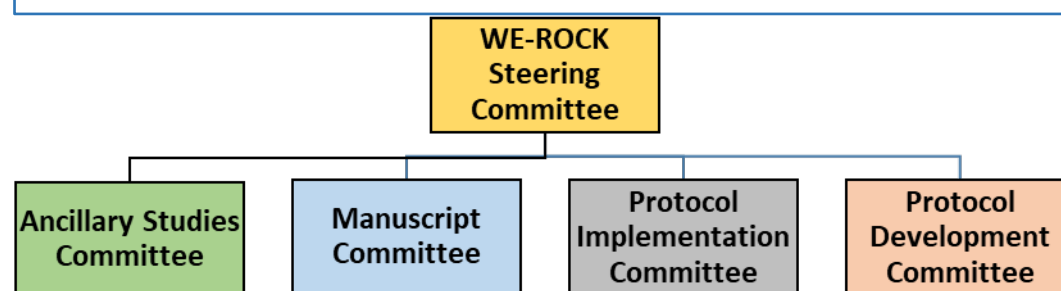


Distribution of centers by ICU size



Strengths

- Large, multicenter data (n=992)
- WE-ROCK has a robust infrastructure founded on the principles of inclusivity, diversity, and collaboration
- There are multiple subcommittees for planning ancillary studies using existing data, and to expand the repository to include CRRT for other indications, such as acute liver failure, or with other circulatory therapies such as ECMO.



Limitations

- All sites are tertiary or quaternary care centers in high resource settings
- Other modalities like peritoneal dialysis are not included
- Retrospective study design



THE 28TH INTERNATIONAL CONFERENCE ON
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AKI & CRRT 2023

MARCH 29 - APRIL 1 SAN DIEGO, CALIFORNIA