

Nonrenal Outcomes of Pediatric Continuous Renal Replacement Therapy (CRRT)

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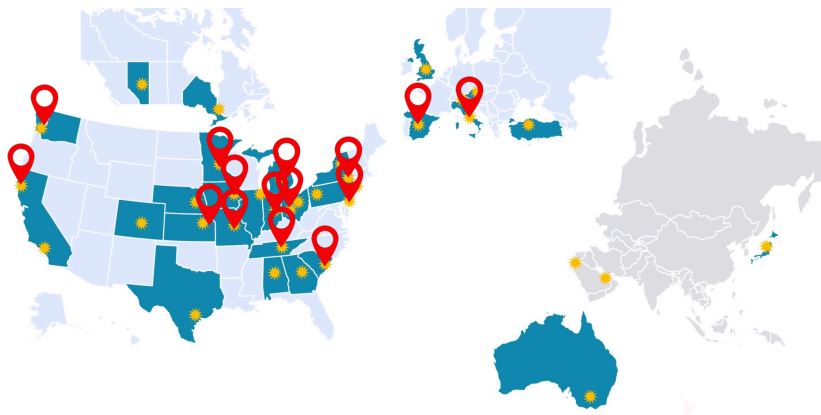


Introduction

- CRRT is routinely used in the pediatric intensive care unit (PICU) for critically ill children with acute kidney injury (AKI)
- Data on long-term morbidity and health related quality of life metrics are scarce
- Single-center study showed worsening functional status and new morbidities at PICU and hospital discharge in CRRT patients
- Worldwide Exploration of Renal Replacement Outcomes Collaborative in Kidney Disease (WE-ROCK) is an international 32 center collaborative investigating outcomes of pediatric patients receiving CRRT
- We aim to evaluate functional outcomes of patients enrolled in this collaborative

Methods and Materials

- WE-ROCK collaborative includes patients 0-25 receiving CRRT for AKI or fluid overload (FO)
- 15 centers participated in Functional Status Score (FSS) data collection between 2013-2021



Functional Status Score

- 6-7: Good
- 8-9: Mildly abnormal
- 10-15: Moderately abnormal
- 16-20: Severely abnormal
- 21-30: Very severely abnormal

FSS Domains

- Mental Status
- Sensory
- Communication
- Motor
- Feeding
- Respiratory

- New morbidity = increase in FSS by ≥ 3

Results

Total patients
n = 517

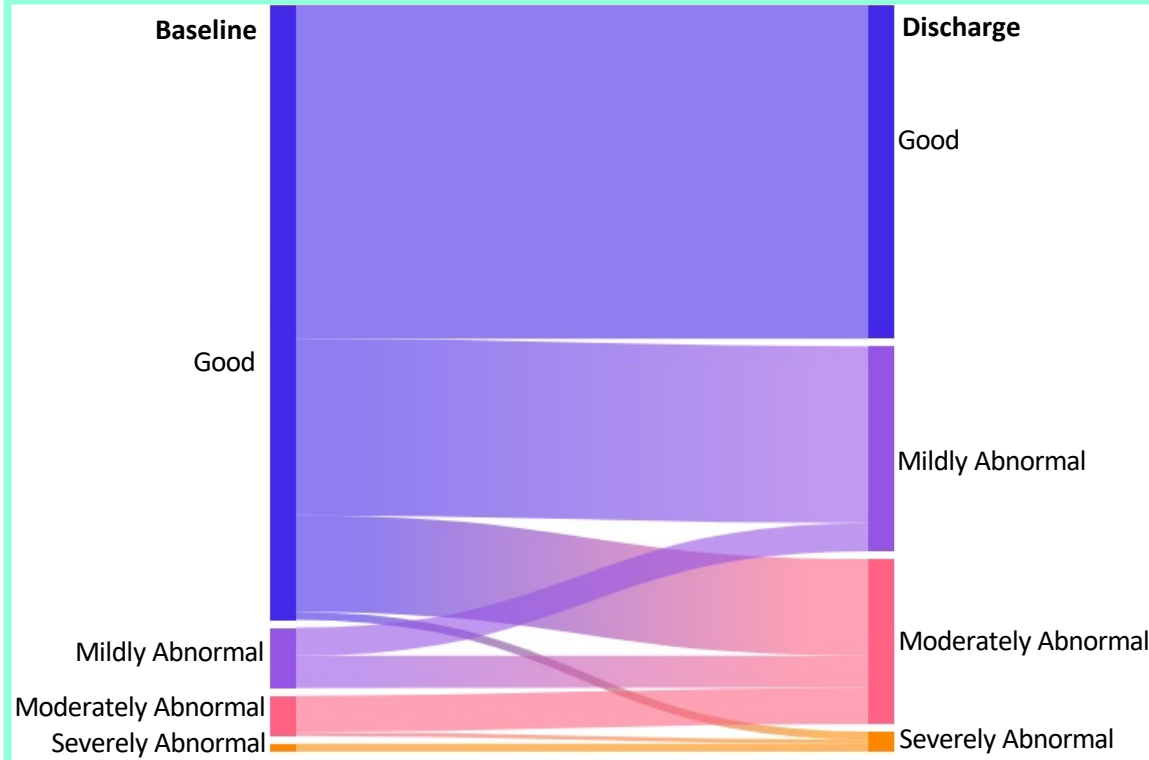


Survivors
n = 330

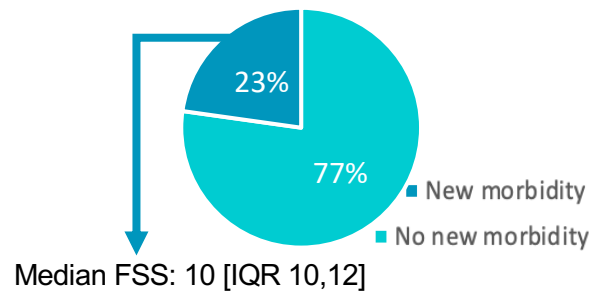


Survivors with complete data collection
n = 180

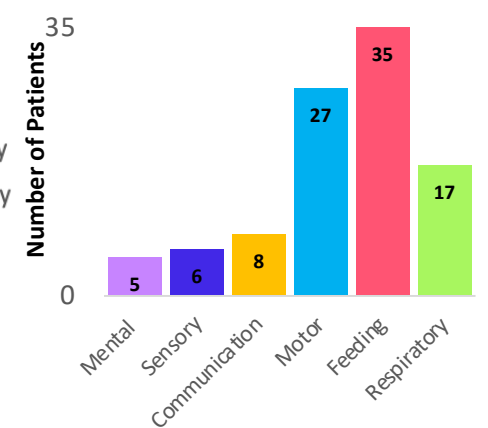
Total patients (n)	180
Male (n,%)	94 (52%)
Age (y) (median, IQR)	9.8 (2.8,15)
Sepsis at ICU admission (n,%)	78 (43%)
PELOD-2 score on CRRT initiation (median, IQR)	5 (4,8)
% FO at CRRT start (median, IQR)	7.66 (2.8,17.9)
Duration of CRRT (days) (median, IQR)	6 (3,12)
Mechanical ventilation (n,%)	142 (79%)



New Morbidity at Discharge

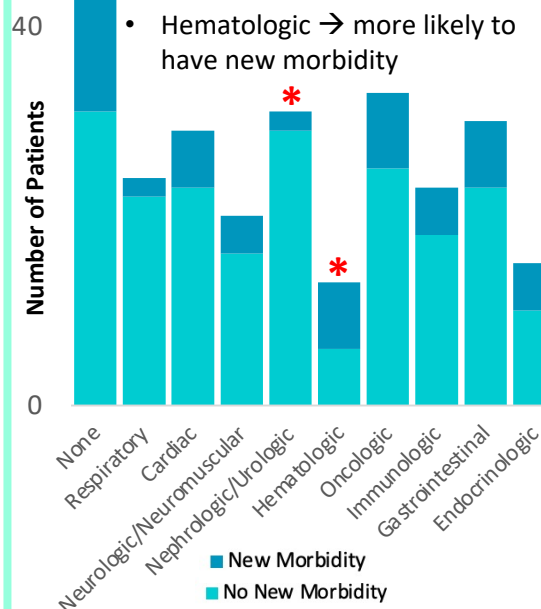


New Morbidity Category Increases



Comorbidities

- Nephrologic/urologic → less likely to have new morbidity
- Hematologic → more likely to have new morbidity



	New Morbidity	No New Morbidity	p value
Age (y) (median, IQR)	5.2 (1.7,15.8)	10.5 (3.6,14.7)	0.15
Admission weight (kg) (median, IQR)	18.5 (11.2,50.5)	34.7 (15.7,64.3)	0.061
Sepsis-ICU admission (n,%)	26 (63%)	52 (37%)	0.006
Percent FO (median, IQR)	15.4 (6.4, 26.3)	7.1 (2.4, 14.1)	0.001
CRRT days (median, IQR)	9 (4,16)	5 (3,11)	0.049
CRRT Dose (mL/kg/hr) (median, IQR)	42.7 (34,58.6)	39.9 (29.6,55)	0.2

Discussion

- 50% of patients had worsening FSS at discharge and 23% had new morbidity
- Those with new morbidity were more likely to have sepsis on admission, have longer duration of CRRT and higher percent FO on CRRT initiation
- There are an additional 35% of patients with worsening FSS at discharge but no new morbidity

Conclusions

- Despite good functional baseline, new morbidities are common at discharge in pediatric CRRT patients
- We plan to examine FSS post hospital discharge to determine post-ICU morbidity trajectory