**Supplemental Table 1. Estimated Associations Between FO and AKI with Duration of Mechanical Ventilation and ICU Length of Stay**

|  |  |  |
| --- | --- | --- |
| Predictor | MV Duration | ICU LOS |
| \*Beta (95% CI) | p-value | ^Beta (95% CI) | p-value |
| PRISM-III | 0.20 (0.09, 0.30) | 0.0003 | 0.19 (0.02, 0.35) | 0.0316 |
| FO | 0.52 (-1.66, 2.70) | 0.6368 | 1.93 (-1.60, 5.45) | 0.2814 |
| AKI | -1.57 (-3.66, 0.51) | 0.1383 | 2.29 (-1.08, 5.66) | 0.1818 |

*Pediatric Risk of Mortality-III (PRISM-III), Mechanical ventilation (MV), Intensive Care Unit Length of Stay (ICU LOS), Fluid Overload > 20% on Day 3 (FO), Any stage AKI on Day 3 (AKI)*

\*Test for interaction between FO and AKI non-significant (p=0.0640)

^Test for interaction between FO and AKI non-significant (p= 0.5334).

**Supplemental Table 2: Patient Characteristics by 28 Day Mortality**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Alive** **(n = 140)** | **Dead (n = 9)** | **P-value** |
| Male | 70 (50) | 7 (77.8) | 0.203 |
| Age (years) | 6.4 [2.7, 15.3] | 13.0 [9.2, 14.3] | 0.261 |
| Weight (kg) | 25.0 [13.2, 51.0] | 35.0 [27.0, 56.7] | 0.278 |
| History of transplant\* | 17 (12.1) | 3 (33.33) | 0.193 |
| Sepsis | 36 (25.7) | 4 (44.4) | 0.400 |
| AKI# | 25 (17.9) | 4 (44.4) | 0.051 |
| FO@ | 30 (25.2) | 6 (66.6) | 0.002 |
| PRISM-III | 8 [4, 13] | 19 [15, 21] | 0.0008 |
| MV duration (days) | 2 [0, 6] | 7 [5, 8] | 0.030 |
| CRRT use | 4 (2.9) | 3 (33.3) | 0.0007 |
| ICU LOS (days) | 6 [4, 12] | 7 [6, 8] | 0.496 |
| Hospital LOS (days) | 18 [10, 36] | 8 [7, 74] | 0.459 |

All continuous variables are presented as median with interquartile range. Categorical variables are presented as number with percent. \*Includes solid organ or stem cell, #All-stage AKI on Day 3, @FO%>20 on Day 3

*Pediatric Risk of Mortality-III (PRISM-III), Mechanical ventilation (MV), Continuous Renal Replacement Therapy (CRRT), Intensive Care Unit (ICU), Length of Stay (LOS). Data expressed as medians [interquartile ranges]*

**Supplemental Table 3: Mortality Associated with Fluid Overload and AKI Injury Phenotype**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **FO** | **-** | **-** | **+** | **+** |
| **AKI** | **-** | **+** | **-** | **+** |
| Uncorrected Creatinine | Mortality (n, %) | 1 (1) | 4 (15.4) | 2 (10.5) | 2 (20) |
|  | Odds Ratio  | n/a | 16.9 (1.8-158.8)p=0.013 | 10.9 (0.9-127.5)p=0.056 | 23.3 (1.9-285.2)p=0.014 |
|  | Relative Risk  | n/a | 14.5 (1.7-123.9)p=0.015 | 9.9 (0.9-103.7)p=0.056 | 18.8 (1.87-189.5)p=0.013 |
| Corrected Creatinine | Mortality (n, %) | 3 (3) | 4 (15.4) | 1 (11.1) | 1 (7.1) |
|  | Odds Ratio  | n/a | 5.9 (1.23-28.2)p=0.027 | 4.1 (0.4-43.5)p=0.249 | 2.5 (0.24-25.7)p=0.44 |
|  | Relative Risk  | n/a | 5.1 (1.2-21.5)p=0.025 | 3.7 (0.4-32.1)p=0.234 | 2.4 (0.3-21.3)p=0.438 |

Comparison of association with mortality for each fluid overload (FO) and acute kidney injury (AKI) phenotype as compared to the baseline of no injury ( FO-/AKI-). Values are expressed with 95% Confidence intervals.