**Supplemental Table 1. Center differences in patients pre-, peri- and postoperative characteristics and outcomes.**

|  |  |  |  |
| --- | --- | --- | --- |
| *Variable* | Center 1(n=95) | Center 2(n=73) | P-Value |
| *Demographics and Pre-operative Characteristics* |
| Age at surgery, days | 4.9±2.4 | 6.4±2.4 | 0.0001 |
| Gender: Male,  | 63 (66) | 48 (66) | 0.93 |
| Gestational age, weeks | 38.4±1.4 | 38.4±1.7 | 0.98 |
| Weight, kilograms | 3.1±0.5 | 3.2±0.4 | 0.77 |
| Genetic abnormalities: Yes | 1 (1) | 2 (3) | 0.58 |
| Pre-operative MV: Yes | 11 (12) | 21 (29) | 0.005 |
| *Operative Characteristics* |
| CPB duration, minutes | 176.1±39.8 | 170.9±64.6 | 0.5 |
| ACC, minutes | 69.4±16.2 | 74.8±26.2 | 0.10 |
| Circulatory arrest, minutes | 9.5±13.9 | 12.8±21.5 | 0.24 |
| Shunt type |  |  | <0.0001 |
|  *Sano* | 66 (70) | 72 (99) |  |
|  *mBTTS* | 29 (30) | 1 (1) |  |
| ECMO in operating room | 1 (1) | 3 (4) | 0.44 |
| Open Sternum: Yes, n (%) | 51 (53.7) | 63 (86.3) | <0.001 |
| *Post-operative characteristics* |
| Post-operative ECMO | 7 (7) | 13 (18) | 0.04 |
| Post-operative cardiac arrest | 10 (11) | 18 (25) | 0.01 |
| VIS |  |  |  |
|  *Admit* | 14±5 | 15±8 | 0.16 |
|  *POD-1* | 19±7 | 24±17 | 0.02 |
|  *POD-2* | 16±7 | 18±2 | 0.09 |
|  *POD-3* | 12±7 | 14±8 | 0.19 |
| Percentage of Cumulative daily fluid overload, (L/kg)\*100% |  |  |  |
|  0 | 2.3±3.5 | 3.0±9.2 | 0.50 |
|  1 | 3.1±6.5 | 0.4±11.9 | 0.06 |
|  2 | -1.3±8.0 | -3.4±13.3 | 0.20 |
|  3 | -5.2±9.1 | -7.5±14.2 | 0.22 |
|  4 | -5.9±10.7 | -10.2±15.8 | 0.04 |
| Peritoneal drain (yes), n (%) | 47 (50) | 71 (97) | <0.001 |
| Hemodialysis, n (%) | 3 (3) | 4 (5) | 0.72 |
| Prolonged peritoneal dialysis (%) | 0 (0) | 13 (18) | <0.001 |
| AKI  |  |  | <0.001 |
|  None | 72 (76) | 27 (37) |  |
|  Transient | 13 (14) | 16 (22) |  |
|  Persistent  | 10 (11) | 30 (41) |  |
| *Outcomes* |
| Reintubated within 48 hours, n (%) | 10 (11) | 17 (23) | 0.04 |
| Duration of MV, hours | 98 (70,144) | 142 (93,234) | 0.001 |
| ICU Length of stay, days (n=148) | 16 (12, 22) | 21 (12, 30) | 0.15 |
| Hospital length of stay, days | 32 (20,44) | 24 (15,37) | 0.01 |
| Mortality, n (%) | 12 (13) | 16 (22) | 0.16 |

Continuous data presented as mean ± standard deviation or median (IQR). Abbreviations: MV = mechanical ventilation, CPB=cardiopulmonary bypass, ACC=aortic cross clamp, mBTTS=modified Blalock-Thomas-Taussig shunt, ECMO=extracorporeal membrane oxygenation, AKI=acute kidney injury, VIS=vasoactive inotrope score, UOP=urine output, POD=post-operative day, MV = mechanical ventilation, ICU = intensive care unit.

**Supplemental table 2. Differences in pre-peri- and postoperative characteristics and outcomes stratified by none, transient and persistent acute kidney injury.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variable | No AKI(n=99) | Transient AKI(n=40) | Persistent AKI(N=29) | P Value |
| ***Demographics and pre-operative characteristics*** |
| Age at surgery, days | 5±2 | 6±3 | 6±3 | 0.01 |
| Gender: Male | 69 (70) | 29 (73) | 13 (45) | 0.023 |
| Gestational age, weeks | 38±1.3 | 39±2 | 38±2 | 0.09 |
| Weight, kilograms | 3.1±0.4 | 3.3±0.5 | 3.1±0.5 | 0.20 |
| Genetic abnormalities: Yes | 1 (1) | 1 (3) | 1 (3) | 0.53 |
| Pre-operative MV: Yes | 17 (17) | 10 (25) | 5 (17) | 0.55 |
| ***Operative Characteristics*** |
| CPB, minutes | 167±41 | 178±66 | 194±59 | 0.03 |
| ACC, minutes | 69±17 | 73±29 | 80±20 | 0.03 |
| Circulatory arrest, minutes | 9±15 | 11±20 | 16±21 | 0.21 |
| Shunt type |  |  |  |  |
|  *Sano* | 80 (81) | 35 (88) | 23 (79) | 0.59 |
|  *mBTTS* |  |  |  |  |
| ECMO in operating room | 1 (1) | 1 (3) | 2 (7) | 0.19 |
| Open Sternum: Yes, n (%) | 9 (9) | 3 (8) | 8 (28) | 0.02 |
| ***Postoperative Characteristics*** |
| VIS |  |  |  |  |
|  *Admit* | 14±6 | 16±7 | 15± 6 | 0.12 |
|  *POD-1* | 19±6 | 22±11 | 30±22 | <0.001 |
|  *POD-2* | 16±6 | 17±13 | 21±10 | 0.02 |
|  *POD-3* | 12±6 | 12±8 | 16±7 | 0.04 |
| Post-operative ECMO | 9 (9) | 3 (8) | 8 (28) | 0.02 |
| Post-operative cardiac arrest | 11 (11) | 5 (13) | 12 (41) | <0.001 |
| Peritoneal Drain, n (%) | 61 (62) | 34 (85) | 23 (79) | 0.01 |
| Cumulative percent fluid overload (daily) |  |  |  |  |
|  0 | 2.3±4.6 | 1.7±8.8 | 4.9±8.3 | 0.11 |
|  1 | 1.4±7.6 | 0.3±11.3 | 6.3±10.4 | 0.02 |
|  2 | -2.8±8.8 | -3.3±12.1 | 1.2±13.7 | 0.15 |
|  3 | -6.2±9.5 | -6.9±13.7 | -5.1±14.9 | 0.81 |
|  4 | -6.3±11.2 | -9.0±15.8 | -11.2±15.8 | 0.18 |
| ***Outcomes*** |
| Mortality, n (%) | 10 (10) | 6 (15) | 12 (41) | <0.001 |
| Duration of M, hours,  | 98 (70, 154) | 118 (92, 149) | 158 (142, 308) | <0.001 |
| ICU Length of stay, days (n=148) | 17(12, 24) | 22 (15, 30) | 16 (13, 22) | 0.27 |
| Hospital Length of stay, days | 30(21, 40) | 29 (18, 38) | 22 (14, 41) | 0.38 |

Continuous data presented as mean ± standard deviation or median (IQR). P-values represent comparisons across all 3 groups. Abbreviations: MV = mechanical ventilation, CPB=cardiopulmonary bypass, ACC=aortic cross clamp, mBTTS=modified Blalock-Thomas-Taussig shunt, ECMO=extracorporeal membrane oxygenation, AKI=acute kidney injury, VIS=vasoactive inotrope score, UOP=urine output, POD=post-operative day.