**Supplemental tables:**

Supplemental Table S1. Distribution of Postoperative Hospital Length of Stay in Days

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Group | Frequency  (N) | Median | Mean | Minimum | Maximum |
| All | 251 | 19.45 (10.46, 31.58) | 28.94 + 34.09 | 0.24 | 275.29 |
| No complication | 43 | 14 (9.6, 19.5) | 15.87 + 9.66 | 1.78 | 39.92 |
| Complication | 208 | 21.5 (10.5, 34.6) | 31.39 + 36.40 | 0.24 | 275.29 |

Data presented as median (interquartile range) and mean + standard deviation.

Supplemental Table S2. Univariate analysis of several variable associations with prolonged postoperative hospital LOS

|  |  |  |  |
| --- | --- | --- | --- |
| **Characteristics** | **Normal PHLOS**  **(N=197)** | **Prolonged PHLOS**  **(N=54)** | **p-value** |
| **Age (days)** | 7 (5.00, 11.00) | 8 (6.00, 12.75) | 0.22 |
| **CPB (minutes)** | 106 (83.5, 132.0) | 123 (91.0, 172.0) | <0.01 |
| **ACC (minutes)** | 59 (34.00, 74.75) | 55 (37.00, 74.00) | 0.82 |
| **Weight (Kg)** | 3.17 + 0.53 | 3.03 + 0.50 | 0.05 |
| **Mechanical ventilation (days)** | 9.47 (5.84, 14.44) | 15.59 (10.54, 21.57) | <0.01 |
| **Syndrome, n (%)** | 14 (7.1) | 13 (24) | <0.08 |
| **High complexity surgery, n (%)** | 122 (62) | 46 (85) | <0.01 |
| **Failed extubation, n (%)** | 14 (7) | 28 (52) | <0.01 |
| **ECMO, n (%)** | 13 (6) | 28 (52) | <0.01 |
| **Arrhythmia, n (%)** | 47 (24) | 31 (66) | <0.01 |
| **Cardiac arrest, n (%)** | 12 (6) | 37 (67) | <0.01 |
| **Catheterization study, n (%)** | 18 (9) | 32 (59) | <0.01 |
| **Acute kidney injury, n (%)** | 45 (25) | 39 (72) | <0.01 |
| **Gastronomy tube, n (%)** | 36 (20) | 37 (69) | <0.01 |
| **Vocal cord paralysis, n (%)** | 18 (9) | 3 (5.5) | 0.4 |
| **CLABSI, n (%)** | 5 (2.5) | 10 (19) | <0.01 |

Data presented as mean + standard deviation and median (interquartile range)

Prolonged postoperative hospital length of stay defined as >75th percentile, in our cohort > 31.5 days.

PHLOS: Postoperative hospital length of stay; CPB: cardiopulmonary bypass; ACC: aortic cross clamp; ECMO: extracorporeal membrane oxygenation; CLABSI: central line associated blood stream infection

Supplemental Table S3. Risk factors of prolonged postoperative hospital LOS (> 75th percentile)

|  |  |  |
| --- | --- | --- |
| Risk factor | Odds ratio  95% CI | p-value |
| Age (day) | 1.022 (0.95, 1.09) | 0.53 |
| Syndrome | 6.174 (1.58, 24.20) | **0.01** |
| Single ventricle | 16.626 (3.33, 82.90) | **<0.01** |
| Gastrostomy tube | 3.807 (1.54, 9.39) | **<0.01** |
| Deep vein thrombosis | 3.802 (1.23, 11.75) | **0.02** |
| Any infection | 4.282 (1.21, 15.12) | **0.02** |
| STAT 4 & 5 | 2.469 (0.68, 8.97) | 0.17 |

CI: confidence interval; STAT: Society of Thoracic Surgeons-European Association for Cardiothoracic Surgery

Supplemental Table S4: Time of complication occurrence in percentile relative to time of surgery

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Complication\* | Frequency  (N) | Incidence  (%) | 25th Percentile  (days) | 50th Percentile  (days) | 75th Percentile  (days) | 90th Percentile  (days) |
| Early | | | | | | |
| ECMO | 41 | 16 | 0 | 0 | 1 | 8 |
| Arrhythmia | 78 | 31 | 0 | 0 | 3 | 9 |
| Cardiac arrest | 49 | 20 | -5 | 0 | 1 | 19 |
| Catheterization lab | 50 | 20 | 0 | 0 | 4 | 20 |
| IVH/ICH | 21 | 8 | -6 | 1 | 1 | 20 |
| Acute kidney injury | 84 | 33 | 0 | 1 | 1.5 | 4 |
| Late | | | | | | |
| Failed extubation | 42 | 17 | 1 | 6 | 11 | 20 |
| Necrotizing enterocolitis | 13 | 5 | 3 | 9 | 28 | 34 |
| Gastrostomy tube | 73 | 29 | 14 | 18 | 27 | 43 |
| Deep vein thrombosis | 44 | 18 | 1.5 | 9.5 | 34 | 77 |
| CLABSI | 15 | 6 | 5 | 12 | 17 | 33 |

Incidence is defined as the number of complications related to number of study subjects.

ECMO: extracorporeal membrane oxygenation; IVH: interventricular hemorrhage; ICH: intercranial hemorrhage; CLABSI: central line associated blood stream infection

\*each complication was reported in number and incidence rate, then the percentage of each complication happens at specific day in relation to surgery (pre or post OR), for example; the number of ECMO event is 41, with incidence rate of 16%, 75% of ECMO events took place by day1 post-surgery. Other complications that had relatively lower incidince were provided in the supplemental table S4.

Supplemental Table S5: List of other complications with lower frequency.

|  |  |  |
| --- | --- | --- |
| **Complication** | **Frequency (n)** | **Incidence rate (%)** |
| Pericardial effusion | 15 | 5.5% |
| Chest exploration | 19 | 7.7% |
| Re-operation | 13 | 5% |
| Diaphragm paralysis | 7 | 2.6% |
| Pneumothorax | 9 | 3.6% |
| Tracheostomy | 7 | 2.6% |
| Chylothorax | 5 | 2% |
| Vocal cords paralysis | 23 | 9% |
| Bowel perforation | 5 | 2% |
| Superficial surgical site infection | 9 | 3.6% |
| Deep surgical site infection | 2 | 0.7% |
| Urinary tract infection | 7 | 2.5% |
| Sepsis | 13 | 5% |
| Seizure | 12 | 4.8% |