**Supplemental Table 5. Baseline, intraoperative and postoperative characteristics by site.**

| **Factor** | **Total(N=4506)** | **Children’s Health at Dallas(N=2182)** | **Cleveland Clinic(N=2324)** | **p-value** | **ASD** |
| --- | --- | --- | --- | --- | --- |
| **AKI** | 499 (11.1) | 395 (18.1) | 104 (4.5) | ***<0.001c*** | 0.44 |
| **Lowest intraoperative MAP sustained for a cumulative of 5 minutes or more, mmHg** | 60 [53, 67] | 63 [57, 70] | 57 [50, 64] | ***<0.001b*** | 0.69 |
| **Age, years** | 9.6 ± 5.8 | 8.9 ± 5.5 | 10.2 ± 6.0 | ***<0.001a*** | 0.22 |
| **Age group** |  |  |  | ***<0.001c*** | 0.35 |
|  < 2 years old | 706 (15.7) | 326 (14.9) | 380 (16.4) |  |  |
|  2-6 years old | 778 (17.3) | 474 (21.7) | 304 (13.1) |  |  |
|  6-12 years old | 1062 (23.6) | 591 (27.1) | 471 (20.3) |  |  |
|  12-18 years old | 1960 (43.5) | 791 (36.3) | 1169 (50.3) |  |  |
| **Female** | 2080 (46.2) | 960 (44.0) | 1120 (48.2) | ***0.005c*** | 0.08 |
| **Weight, kg** | 37.7 ± 26.3 | 35.6 ± 25.2 | 39.7 ± 27.1 | ***<0.001a*** | 0.16 |
| **Baseline MAP, mmHg** | 79 ± 12 | 82 ± 11 | 77 ± 12 | ***<0.001a*** | 0.47 |
| **ASA status** |  |  |  | ***<0.001c*** | 0.47 |
| **I-II** | 1769 (39.3) | 617 (28.3) | 1152 (49.6) |  |  |
| **III** | 2396 (53.2) | 1357 (62.2) | 1039 (44.7) |  |  |
| **. IV-V** | 341 (7.6) | 208 (9.5) | 133 (5.7) |  |  |
| **Race** |  |  |  | ***<0.001c*** | 0.22 |
| . Black | 604 (13.4) | 356 (16.3) | 248 (10.7) |  |  |
| . Other | 742 (16.5) | 415 (19.0) | 327 (14.1) |  |  |
| . White | 3160 (70.1) | 1411 (64.7) | 1749 (75.3) |  |  |
| **Preoperative variables** |  |  |  |  |  |
| Preoperative creatinine, mg/dl | 0.50 [0.31, 0.67] | 0.50 [0.30, 0.70] | 0.51 [0.34, 0.67] | ***<0.001b*** | 0.10 |
| Preoperative hemoglobin, g/dl | 12.0 [10.3, 13.4] | 11.2 [9.7, 12.7] | 12.6 [11.1, 13.8] | ***<0.001b*** | 0.58 |
| Preoperative sepsis | 268 (5.9) | 61 (2.8) | 207 (8.9) | ***<0.001c*** | 0.26 |
| History of organ transplant | 177 (3.9) | 46 (2.1) | 131 (5.6) | ***<0.001c*** | 0.18 |
| Preoperative tacrolimus use | 114 (2.5) | 51 (2.3) | 63 (2.7) | 0.420c | 0.02 |
| Preoperative cyclosporine use | 17 (0.38) | 6 (0.27) | 11 (0.47) | 0.280c | 0.03 |
| Preoperative Furosemide use | 255 (5.7) | 148 (6.8) | 107 (4.6) | ***0.002c*** | 0.09 |
| Preoperative comorbidity |  |  |  |  |  |
|  *Congestive heart failure* | 27 (0.60) | 17 (0.78) | 10 (0.43) | 0.130c | 0.05 |
|  *Valvular disease* | 64 (1.4) | 34 (1.6) | 30 (1.3) | 0.450c | 0.02 |
|  *Pulmonary circulation disease* | 28 (0.62) | 14 (0.64) | 14 (0.60) | 0.870c | <0.01 |
|  *Peripheral vascular disease* | 43 (0.95) | 25 (1.1) | 18 (0.77) | 0.200c | 0.04 |
|  *Hypertension* | 282 (6.3) | 195 (8.9) | 87 (3.7) | ***<0.001c*** | 0.21 |
|  *Paralysis* | 405 (9.0) | 140 (6.4) | 265 (11.4) | ***<0.001c*** | 0.18 |
|  *Other neurological disorders* | 717 (15.9) | 231 (10.6) | 486 (20.9) | ***<0.001c*** | 0.29 |
|  *Chronic pulmonary disease* | 358 (7.9) | 183 (8.4) | 175 (7.5) | 0.290c | 0.03 |
|  *Diabetes w/o chronic complications* | 53 (1.2) | 25 (1.1) | 28 (1.2) | 0.850c | <0.01 |
|  *Hypothyroidism* | 91 (2.0) | 36 (1.6) | 55 (2.4) | 0.087c | 0.05 |
| *Liver disease* | 220 (4.9) | 143 (6.6) | 77 (3.3) | ***<0.001c*** | 0.15 |
| *Peptic ulcer Disease x bleeding* | 15 (0.33) | 14 (0.64) | 1 (0.04) | ***<0.001c*** | 0.10 |
| *Lymphoma* | 110 (2.4) | 64 (2.9) | 46 (2.0) | ***0.038c*** | 0.06 |
| *Metastatic cancer* | 157 (3.5) | 103 (4.7) | 54 (2.3) | ***<0.001c*** | 0.13 |
| *Solid tumor w/out metastasis* | 299 (6.6) | 171 (7.8) | 128 (5.5) | ***0.002c*** | 0.09 |
| *Rheumatoid arthritis/collagen vas* | 28 (0.62) | 13 (0.60) | 15 (0.65) | 0.830c | <0.01 |
| *Coagulopthy* | 308 (6.8) | 174 (8.0) | 134 (5.8) | ***0.003c*** | 0.09 |
| *Obesity* | 203 (4.5) | 144 (6.6) | 59 (2.5) | ***<0.001c*** | 0.20 |
| *Weight loss* | 499 (11.1) | 388 (17.8) | 111 (4.8) | ***<0.001c*** | 0.42 |
| *Fluid and electrolyte disorders* | 941 (20.9) | 515 (23.6) | 426 (18.3) | ***<0.001c*** | 0.13 |
| *Chronic blood loss anemia* | 106 (2.4) | 75 (3.4) | 31 (1.3) | ***<0.001c*** | 0.14 |
| *Deficiency Anemias* | 667 (14.8) | 342 (15.7) | 325 (14.0) | 0.110c | 0.05 |
| **Intraoperative variables** |  |  |  |  |  |
|  Norepinephrine, mg | 0.00 [0.00, 0.00] | 0.00 [0.00, 0.00] | 0.00 [0.00, 0.00] | ***<0.001b*** | 0.16 |
|  Phenylephrine, mg | 0.00 [0.00, 0.00] | 0.00 [0.00, 0.00] | 0.00 [0.00, 0.01] | ***<0.001b*** | 0.79 |
|  Ephedrine, mg | 0.00 [0.00, 0.00] | 0.00 [0.00, 0.00] | 0.00 [0.00, 0.00] | ***<0.001b*** | 0.33 |
| Vasopressor use | 672 (14.9) | 15 (0.69) | 657 (28.3) | ***<0.001c*** | 0.85 |
| *Norepinephrine*  | 36 (0.80) | 2 (0.09) | 34 (1.5) | ***<0.001c*** | 0.16 |
| *Phenylephrine*  | 613 (13.6) | 13 (0.60) | 600 (25.8) | ***<0.001c*** | 0.80 |
| *Ephedrine*  | 117 (2.6) | 0 (0.0) | 117 (5.0) | ***<0.001c*** | 0.33 |
| Crystalloid, ml | 675.0 [300.0, 1500.0] | 400.0 [220.0, 800.0] | 1100.0 [440.0, 2300.0] | ***<0.001b*** | 0.75 |
| Blood loss\* | 20.0 [5.0, 100.0] | 10.0 [3.0, 50.0] | 25.0 [5.0, 150.0] | ***<0.001b*** | 0.41 |
|  Use of intravenous contrast material | 189 (4.2) | 186 (8.5) | 3 (0.13) | ***<0.001c*** | 0.42 |
|  Ketorolac | 485 (10.8) | 167 (7.7) | 318 (13.7) | ***<0.001c*** | 0.20 |
|  Gentamycin | 88 (2.0) | 43 (2.0) | 45 (1.9) | 0.930c | <0.01 |
|  Vancomycin | 285 (6.3) | 48 (2.2) | 237 (10.2) | ***<0.001c*** | 0.34 |
| **Emergent surgery** | 691 (15.3) | 398 (18.2) | 293 (12.6) | ***<0.001c*** | 0.16 |
| **Surgery type** |   |   |   | ***<0.001c*** | 0.71 |
| Miscellaneous diagnostic and therapeutic procedures | 340 (7.5) | 166 (7.6) | 174 (7.5) |  |   |
| Operations on the cardiovascular system £ | 250 (5.5) | 165 (7.6) | 85 (3.7) |  |   |
| Operations on the digestive system | 1560 (34.6) | 839 (38.5) | 721 (31.0) |  |   |
| Operations on the hemic and lymphatic system | 254 (5.6) | 193 (8.8) | 61 (2.6) |  |   |
| Operations on the integumentary system | 244 (5.4) | 167 (7.7) | 77 (3.3) |  |   |
| Operations on the musculoskeletal | 568 (12.6) | 128 (5.9) | 440 (18.9) |  |   |
| Operations on the nervous system | 853 (18.9) | 240 (11.0) | 613 (26.4) |  |   |
| Operations on the respiratory system | 169 (3.8) | 112 (5.1) | 57 (2.5) |  |   |
| Operations on the urinary system | 86 (1.9) | 64 (2.9) | 22 (0.95) |  |   |
| Others | 182 (4.0) | 108 (4.9) | 74 (3.2) |  |   |
| **Surgery duration, minutes** | 217 ± 156 | 168 ± 134 | 264 ± 161 | ***<0.001a*** | 0.65 |
| **Intraoperative TWA MAP, mmHg** | 70 ± 11 | 73 ± 10 | 67 ± 11 | ***<0.001a*** | 0.58 |
| **Intraoperative mean MAP, mmHg** | 70 ± 11 | 74 ± 10 | 67 ± 11 | ***<0.001a*** | 0.64 |
| **Intraoperative BP measurement, arterial catheter** | 1224 (27.2) | 331 (15.2) | 893 (38.4) | ***<0.001c*** | 0.54 |

Note: \*Data not available for all subjects. Missing values: intraoperative blood loss = 654. ASD= absolute standardized difference; AKI= acute kidney injury; TWA= time-weighted average; MAP= mean arterial pressure; BP= blood pressure.

Statistics presented as Mean ± SD, Median [P25, P75], Median (min, max) or N (column %).
P values: a=ANOVA, b=Kruskal-Wallis test, c=Pearson's chi-square test, d=Fisher's Exact test.

£ Operations on cardiovascular system included other vascular catheterization; not heart, peripheral vascular bypass, other vascular bypass and shunt; not heart, hemodialysis, other operating room procedures on vessels of head and neck, embolectomy and endarterectomy of lower limbs, other operating room procedures on vessels other than head and neck, other diagnostic cardiovascular procedures, and other non-operating room therapeutic cardiovascular procedures.