**Supplementary Table S1**: Arrhythmia definitions

|  |  |
| --- | --- |
| **Arrhythmia type** | **Criteria** |
| Tachyarrhythmia: |  |
| * Atrial tachycardia | - atrial flutter: rapid and regular atrial rhythm with characteristic flutter waves  - atrial fibrillation: chaotic, irregular atrial rhythm  - ectopic atrial tachycardia: regular atrial tachycardia with abnormal P waves  - atrial tachycardia NOS: tachycardia (rate >10% above baseline) with distinct P waves and/or variable AV |
| * Junctional tachycardia | - junctional ectopic tachycardia: tachycardia of normal QRS duration and QRS rate ≥10% above baseline rate (noted before tachycardia) with the ventricular rate greater than the atrial rate  - accelerated junctional rhythm: tachycardia of normal QRS duration and QRS rate <10% above baseline with the ventricular rate greater than the atrial rate |
| * Other supraventricular tachycardia | - paroxysmal narrow complex tachycardia mediated by an atrioventricular accessory pathway or dual AV node physiology leading to AV nodal re-entry  - narrow complex tachycardia (rate >10% above baseline), which could not be definitively classified as atrial tachycardia, AVRT, or AVNRT |
| * Ventricular tachycardia | - monomorphic ventricular tachycardia: uniform wide-complex tachycardia (>10% above baseline) lasting at least 3 beats  - polymorphic ventricular tachycardia: wide-complex tachycardia of varying QRS morphology, rate >10% above baseline and lasting at least 3 beats  - accelerated ventricular rhythm: uniform wide-complex tachycardia <10% above baseline lasting at least 3 beats |
| Bradyarrhythmia: |  |
| * Sinus bradycardia | - symptomatic slow sinus rhythm  - symptomatic junctional escape rhythm: bradycardia of normal QRS and ventricular rate greater than the atrial rate |
| * Complete AV block | - atrioventricular dissociation with atrial rate > ventricular rate |
| * Other AV block | - non-physiologic 2nd degree AV block  - symptomatic 1st degree AV block prompting AV sequential pacing |

**Supplementary Table S2.** Most common congenital heart diagnoses and operations

|  |  |
| --- | --- |
| **Most common primary congenital heart diagnoses (n=1250):** | |
| Single ventricle | 264 (21%) |
| Atrial septal defect | 170 (14%) |
| Tetralogy of Fallot | 78 (6%) |
| Subaortic stenosis | 72 (6%) |
| Ventricular septal defect | 66 (5%) |
| **Most common primary operation (n=1250):** | |
| Fontan procedure | 187 (15%) |
| Secundum atrial septal defect surgery | 154 (12%) |
| Pulmonary valve replacement | 95 (8%) |
| Subaortic stenosis resection | 78 (6%) |
| Right ventricular to pulmonary artery conduit | 65 (5%) |

**Supplementary Table S3.** Incidence of any post-operative arrhythmia by BMI category, stratified by age quartile

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | BMI category | | | | |  |
| Age quartile | | Underweight | Normal | Overweight | Obese | P value | |
| 1 | (24-40mo, n=304) | 41% | 38% | 70% | 53% | 0.025 | |
| 2 | (41-68mo, n=319) | 20% | 34% | 31% | 38% | 0.274 | |
| 3 | (69-151mo, n=314) | 42% | 31% | 35% | 34% | 0.582 | |
| 4 | (≥152mo, n=313) | 31% | 49% | 42% | 51% | 0.259 | |

**Supplementary Table S4**. Postoperative treated arrhythmia: univariate analysis

|  |  |  |  |
| --- | --- | --- | --- |
|  | Treated Arrhythmia | No treated arrhythmia | P value |
| Absolute BMI (kg/m2) | 17.9 +/- 4.8 | 18.2 +/- 5.2 | 0.081 |
| Vasoactive-inotrope score at 48hrs | 1.82 +/- 4.24 | 0.66 +/- 3.14 | <0.001 |
| Maximum vasoactive-inotrope score | 6.71 +/- 9.05 | 3.35 +/- 6.35 | <0.001 |
| Cardiopulmonary bypass time (min) | 159 +/- 99.4 | 117 +/- 73.3 | 0.005 |
| Aortic cross clamp time (min) | 45.8 +/- 48.4 | 32.2 +/- 33.8 | <0.001 |

**Supplementary Table S5:** Postoperative treated arrhythmia: multivariate analysis

|  |  |  |
| --- | --- | --- |
|  | Odds ratio (95% CI) | P value |
| BMI category |  | 0.353 |
| * Obese vs. normal | 1.33 (0.75-2.37) | 0.325 |
| * Overweight vs. normal | 1.23 (0.69-2.2) | 0.476 |
| * Underweight vs. normal | 0.68 (0.36-1.3) | 0.248 |
| Maximum vasoactive-inotrope score | 1.03 (0.993-1.07) | 0.13 |
| Aortic cross clamp time (min) | 1.004 (0.999-1.01) | 0.149 |
| **Cardiopulmonary bypass time (min)** | **1.003 (1.001-1.006)** | **0.019** |
| Vasoactive-inotrope score at 48 hours | 1.001 (0.94-1.07) | 0.965 |
| STAT score category |  | 0.189 |
| * STAT 2 vs 1 | 1.36 (0.87-2.15) | 0.179 |
| * STAT 3 vs 1 | 1.27 (0.62-2.58) | 0.515 |
| * **STAT 4 vs 1** | **2.1 (1.16-3.81)** | **0.014** |

Bold text highlights those variables which remained significant in multivariate analysis