**Table 1. Components of cardioplegia**

| **Del Nido cardioplegia** | |  | **Cardioplegia with Custodiol solution (1 L)** | |
| --- | --- | --- | --- | --- |
| Components | Volume | | Components | Volume |
| Plasmalyte A base solution, mL | 1000 | | L-histidine, G | 27.9289 |
| Potassium chloride, meqv/kg | 2 | | L-histidine chloride monohydrate, G | 3.7733 |
| Sodium hydrocarbonate, mL | 13 | | L-tryptophan, mg | 408.5 |
| Mannitol 20%, mL | 16.3 | | Potassium chloride, mg | 671 |
| Magnesium sulfate 50%, mL | 4 | | Calcium chloride dehydrate, mg | 2.2 |
| Lidocaine 2%, mL | 6.5 | | Potassium ketoglutarate, mg | 184.2 |
| Cardioplegia: the crystalloid to blood ratio | 4:1 | | Magnesium chloride hexahydrate, mg | 813.2 |
|  |  | | Mannitol, G | 5.4651 |
|  |  | | Sodium chloride, mg | 876.6 |

**Table 2. Patient characteristics**

|  |  |  |  |
| --- | --- | --- | --- |
| **Parameters** | **Del Nido group**  **(N = 102)** | **Custodiol group**  **(N = 102)** | **P value** |
| Age, months | 5 [4; 8] | 5 [3; 7] | 0.286 |
| Body weight, kg | 6 [5; 7,2] | 5,95 [5; 7] | 0.233 |
| Body surface area, m2 | 0.32 [0.28; 0.36] | 0.32 [0.29; 0.35] | 0.928 |
| Gender, M/F, N (%) | 61 (59.8) / 41 (40.2) | 55 (53.9) / 47 (46.1) | 0.398\*  (χ2 = 0.716, DF = 1, φ = 0.059) |
| Heart failure functional class, modified Ross scale, N (%) | | | |
| I | 9 (8.8) | 7 (6.9) | 0.354\*  (χ2 = 2.076, DF = 2) |
| II | 58 (56.9) | 68 (66.7) |
| III | 35 (34.3) | 27 (26.5) |
| HR, beats per minute | 133 [128; 135] | 133 [128; 143] | 0.253 |
| IVSD size, mm | 9 [8; 10] | 9 [7,9; 10] | 0.729 |
| Peak pressure gradient at IVSD, mmHg | 20 [15; 24] | 19 [13; 22] | 0.164 |
| Qp/Qs | 3 [2.9; 3.2] | 3 [2.4; 3.7] | 0.234 |
| hs-TnI before surgery, ng/mL | 0.03 [0.025; 0.04] | 0.03 [0.018; 0.06] | 0.715 |
| LV EF (by Simpson), % | 67 [61; 69] | 66 [61; 69] | 0.877 |
| LV GLS (reference range, -25 ± 7), % | -16.5 [-17.6; -11.4] | -14.1 [-17.6; -11.4] | 0.152 |
| LV GSR (reference range, -1.9 ± 0.7), s-1 | -0.83 [-1; -0.63] | -0.81 [-1; -0.61] | 0.782 |
| CPB duration, min | 43.5 [37; 52] | 43 [38; 50] | 0.781 |
| Aortic clamp time duration, min | 23 [20; 32] | 25 [22; 32] | 0.296 |
| MV, h | 19 [10; 27] | 20 [9; 28] | 0.798 |
| Days in the hospital | 14 [11; 18] | 15 [11; 19] | 0.433 |
| Days in ICU | 2 [1; 3] | 2 [1; 3] | 0.753 |
| hs-TnI at 6 h after surgery, ng/mL | 5.83 [4.65; 6.69] | 7.01 [5.99; 7.7] | < 0.0001 |
| hs-TnI at 24 h after surgery, ng/mL | 4.85 [3.1; 5.73] | 4.27 [4.03; 5.74] | 0.401 |
| hs-TnI at day 10 after surgery, ng/mL | 0.18 [0.11; 0.23] | 0.18 [0.15; 0.34] | 0.172 |
| LV EF (by Simpson) at 6 h after surgery, % | 54 [45; 60] | 55 [45; 60] | 0.725 |
| LV EF at 24 hours after surgery, % | 48 [40; 55] | 46.5 [38; 55] | 0.708 |
| LV EF at day 10 after surgery, % | 52 [44; 58] | 53 [46; 58] | 0.431 |
| LV GLS at 6 h after surgery, % | -3.5 [-8; -2.5] | -3.5 [-6; -2.5] | 0.797 |
| LV GLS at 24 h after surgery, % | -14.8 [-16.5; -10] | -10 [-14.1; -6.27] | < 0.0001 |
| LV GLS at day 10 after surgery, % | -16.5 [-18.3; -12.9] | -14.3 [-16.8; -12.9] | 0.006 |
| LV GSR at 6 h after surgery, s-1 | -0.44 [-1; -0.3] | -0.44 [-0.9; -0.3] | 0.784 |
| LV GSR at 24 h after surgery, s-1 | -0.71 [-0.9; -0.52] | -0.57 [-0.76; -0.44] | 0.0049 |
| LV GSR at day 10 after surgery, s-1 | -0.85 [-0.98; -0.7] | -0.81 [-1.1; -0.67] | 0.813 |
| Vasoactive inotropic index | 3 [3; 3.7] | 4 [3; 9.01] | < 0.0001 |
| Decrease in LV GLS at 6 h after surgery by 50% from baseline, N (%) | 77 (75.5) | 78 (76.5) | 0.87\*  (χ2 = 0.027, DF = 1, φ = 0.011) |
| Ischemic type ECG abnormalities (ST elevation > 1 mm or ST depression > 1 mm in ≥ 2 adjacent leads), N (%) | 55 (53.9) | 61 (59.8) | 0.39\*  (χ2 = 0.716, DF = 1, φ = 0.059) |

ECG, electrocardiography; EF, ejection fraction; F, female patients; CPB, cardiopulmonary bypass; GLS, global longitudinal strain; GSR, global strain rate; HF, heart failure; HR, heart rate; hs-TnI, highly sensitive troponin I in plasma; IVSD, interventricular septal defect; LV, left ventricle; M, male patients; MV, mechanical ventilation; Qp/Qs, ratio of pulmonary to systemic blood flow measured by the integral of linear blood flow

The values are given as median and interquartile range (Me [Q1; Q3]) or as absolute numbers and frequencies

\* Pearson's χ2