**SDC 9, Table 4.** Respiratory Parameters

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **VT (mL/kg)** | **BASELINE** | **30 min** | **60 min** | **FINAL** | **Time Effect** | **Group Effect** | **Interaction** |
| Control-1 | 5.3 ± 0.4 | 5.1 ± 0.4 | 5.4 ± 0.1 | 5.5 ± 0.2 | 0.235 | 0.115 | 0.589 |
| Control-2 | 5.4 ± 0.3 | 5.3 ± 0.2 | 5.4 ± 0.2 | - |  |  |  |
| Shorter RR adaptation | 5.5 ± 0.4 | 5.5 ± 0.4 | 5.5 ± 0.3 | 5.4 ± 0.4 |  |  |  |
| Longer RR adaptation | 5.6 ± 0.2 | 5.6 ± 0.2 | 5.6 ± 0.3 | 5.9 ± 0.2 |  |  |  |
| **RR (bpm)** | **BASELINE** | **30 min** | **60 min** | **FINAL** | **Time Effect** | **Group Effect** | **Interaction** |
| Control-1 | 70 ± 0 | 70 ± 0 | 70 ± 0 | 70 ± 0 |  |  |  |
| Control-2 | 70 ± 0 | 130 ± 0 | 130 ± 0 | - |  |  |  |
| Shorter RR adaptation | 70 ± 0 | 70 ± 0 | 130 ± 0 | 130 ± 0 |  |  |  |
| Longer RR adaptation | 70 ± 0 | 100 ± 0 | 130 ± 0 | 130 ± 0 |  |  |  |
| **Inspiratory Flow (cmH2O)** | **BASELINE** | **30 min** | **60 min** | **FINAL** | **Time Effect** | **Group Effect** | **Interaction** |
| Control-1 | 22.0 ± 4.7 | 21.7 ± 5.0  | 23.2 ± 6.1 | 22.5 ± 4.0 | <0.0001 | 0.046 | <0.0001 |
| Control-2 | 20.8 ± 2.4 | 24.8 ± 3.4 | 31.7 ± 4.8\* | - |  |  |  |
| Shorter RR adaptation | 19.2 ± 4.2 | 25.1 ± 7.5 | 30.0 ± 7.0\* | 29.1 ± 3.4 |  |  |  |
| Longer RR adaptation | 23.5 ± 2.8 | 29.1 ± 7.0\* | 32.7 ± 7.5\* | 29.1 ± 3.3 |  |  |  |
| **ePEEP (cmH2O)** | **BASELINE** | **30 min** | **60 min** | **FINAL** | **Time Effect** | **Group Effect** | **Interaction** |
| Control-1 | 3.7 ± 0.6 | 3.7 ± 0.6 | 3.7 ± 0.6 | 3.7 ± 0.6 | <0.0001 | 0.875 | 0.999 |
| Control-2 | 3.5 ± 0.4 | 3.6 ± 0.7 | 3.6 ± 0.5 | - |  |  |  |
| Shorter RR adaptation | 3.5 ± 0.4 | 3.5 ± 0.4 | 3.5 ± 0.4 | 3.5 ± 0.4 |  |  |  |
| Longer RR adaptation | 3.5 ± 0.4 | 3.5 ± 0.4 | 3.5 ± 0.4 | 3.5 ± 0.4 |  |  |  |
| **iPEEP (cmH2O)** | **BASELINE** | **30 min** | **60 min** | **FINAL** | **Time Effect** | **Group Effect** | **Interaction** |
| Control-1 | 0.12 ± 0.34 | 0.18 ± 0.24 | 0.15 ± 0.26 | 0.21 ± 0.19 | <0.0001 | 0.001 | <0.0001 |
| Control-2 | 0.00 ± 0.0 | 0.85 ± 0.23 | 1.35 ± 0.37\* | - |  |  |  |
| Shorter RR adaptation | 0.00 ± 0.0 | 0.25 ± 0.30 | 1.07 ± 0.45\* | 1.00 ± 0.72\* |  |  |  |
| Longer RR adaptation | 0.00 ± 0.0 | 0.45 ± 0.46 | 1.04 ± 0.45\* | 1.09 ± 0.60\* |  |  |  |
| **Ppeak,rs** **(cmH2O)** | **BASELINE** | **30 min** | **60 min** | **FINAL** | **Time Effect** | **Group Effect** | **Interaction** |
| Control-1 | 11.6 ± 1.5 | 11.7 ± 2.3 | 12.6 ± 2.2 | 12.4 ± 1.2 | <0.0001 | 0.039 | <0.0001 |
| Control-2 | 12.9 ± 2.1 | 16.4 ± 2.2 | 18.2 ± 2.0\* | - |  |  |  |
| Shorter RR adaptation | 13.2 ± 2.6 | 13.2 ± 2.1 | 16.4 ± 2.9\* | 16.1 ± 2.3\* |  |  |  |
| Longer RR adaptation | 13.0 ± 2.8 | 14.5 ± 2.6 | 15.4 ± 2.2 | 14.0 ± 1.1 |  |  |  |
| **Pplat,rs (cmH2O)** | **BASELINE** | **30 min** | **60 min** | **FINAL** | **Time Effect** | **Group Effect** | **Interaction** |
| Control-1 | 10.1 ± 1.4 | 10.2 ± 2.0 | 10.8 ± 1.7 | 10.8 ± 1.2 | <0.0001 | 0.047 | <0.0001 |
| Control-2 | 10.9 ± 2.0 | 13.9 ± 2.1 | 16.5 ± 1.6\* | - |  |  |  |
| Shorter RR adaptation | 11.4 ± 2.0 | 11.8 ± 1.8 | 14.0 ± 2.0\* | 13.7 ± 0.9\* |  |  |  |
| Longer RR adaptation | 11.0 ± 1.9 | 12.9 ± 3.2\* | 13.0 ± 2.9 | 12.3 ± 1.6 |  |  |  |
| **∆P,rs (cmH2O)** | **BASELINE** | **30 min** | **60 min** | **FINAL** | **Time Effect** | **Group Effect** | **Interaction** |
| Control-1 | 6.4 ± 1.0 | 6.5 ± 1.6 | 7.1 ± 1.3 | 7.1 ± 0.7 | <0.0001 | 0.017 | <0.0001 |
| Control-2 | 7.4 ± 1.9 | 10.5 ± 1.9 | 11.5 ± 1.9\* | - |  |  |  |
| Shorter RR adaptation | 8.6 ± 2.5 | 8.2 ± 1.6 | 10.5 ± 2.3\* | 10.1 ± 1.2\* |  |  |  |
| Longer RR adaptation | 7.4 ± 1.8 | 9.4 ± 3.3\* | 9.5 ± 3.0 | 8.7 ± 1.6 |  |  |  |
| **Mechanical Power (mJ/min)** | **BASELINE** | **30 min** | **60 min** | **FINAL** | **Time Effect** | **Group Effect** | **Interaction** |
| Control-1 | 107 ± 11 | 104 ± 20 | 119 ± 27 | 122 ± 25 | <0.0001 | <0.0001 | <0.0001 |
| Control-2 | 118 ± 20 | 243 ± 28 | 281 ± 20\* | - |  |  |  |
| Shorter RR adaptation | 119 ± 22 | 122 ± 15† | 277 ± 40\* | 263 ± 43\* |  |  |  |
| Longer RR adaptation | 124 ± 29 | 186 ± 18\*# | 265 ± 27\* | 247 ± 15\* |  |  |  |
| **Cumulative Mechanical Power (mJ/min)** | **BASELINE** | **30 min** | **60 min** | **FINAL** | **Time Effect** | **Group Effect** | **Interaction** |
| Control-1 | 549 ± 75 | 3,280 ± 549 | 7,307 ± 1,858 | 16,102 ± 4,770 | <0.0001 | <0.0001 | <0.0001 |
| Control-2 | 592 ± 67 | 7,493 ± 548\* | 14,986 ± 998\* | - |  |  |  |
| Shorter RR adaptation | 578 ± 167 | 3,930 ± 709† | 9,756 ± 1,261\*† | 25,058 ± 2,551\* |  |  |  |
| Longer RR adaptation | 552 ± 115 | 4,199 ± 261† | 10,410 ± 887\*† | 26,437 ± 2,430\* |  |  |  |

Values are mean ± SD of 7 animals/group. Control-1 group: ventilation with RR = 70 bpm for 2 h; Control-2 group: submitted to abrupt increase of RR (from 70 bpm up to 130 bpm) and ventilated for 1 h; Shorter RR adaptation: ventilation with RR = 70 bpm during the first 30 min and gradual increase from 70 bpm up to 130 bpm (2-breath increment per minute) at 60 minutes, followed by constant 130 bpm during the second hour; Longer RR adaptation: ventilation with RR = 70 bpm, immediately followed by a gradual increase from 70 bpm up to 130 bpm (1 breath increment per minute) at 60 minutes, followed by constant 130 bpm during the second hour. VT = tidal volume; RR = respiratory rate; ePEEP = extrinsic positive end-expiratory pressure; iPEEP = Intrinsic positive end-expiratory pressure; Pplat,rs = respiratory system plateau pressure; ∆P,rs = respiratory system driving pressure. Comparisons were done using mixed linear model based on random intercept followed by Holm-Šidák comparison tests (p<0.05). \*Significantly different from Control, † Significantly different from Abrupt increase of RR for 1 h during 1 h.