**Table S1.** Comparison of ventilatory parameters between groups at 0, 1, 3, 5 and 7 days after enrollment.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Day 0 | Day 1 | Day 3 | Day 5 | Day 7 | Between subjects p for trend |
| Tidal volume (ml/kg/PBW) *a* APRV LTV | 6.6 ± 0.86.5 ± 0.8 | \*7.4 ± 1.06.7 ± 0.5 | \*7.4 ± 1.16.6 ± 0.6 | \*8.1 ± 1.37.1 ± 1.1 | \*8.6 ± 1.07.2 ± 0.9 | <0.001 |
| Minute ventilation (L/min) APRV LTV | 9.4 ± 1.69.3 ± 1.5 | 8.1 ± 1.18.4 ± 1.3 | \*8.1 ± 2.010.3 ± 1.9 | \*7.9 ± 2.49.7 ± 2.3 | 9.4 ± 2.810.1 ± 2.0 | 0.001 |
| Spontaneous minute ventilation (%)  APRV LTV | 00 | 00 | 00 | \*0 (0-25)0 (0-0) | \*20 (0-30)0 (0-0) | 0.10 |
| Mandatory respiratory rate (bpm) APRV LTV | 19 (17-22)19 (17-23) | \*15 (15-17)19 (16-22) | \*13 (12-14)20 (18-25) | \*11 (10-12)18 (16-21) | \*13 (12-14)19 (17-21) | <0.001 |
| Mean airway pressure (cmH2O) APRV LTV | 20 ± 2.619 ± 2.8 | \*22.9 ± 3.019.2 ± 3.3 | \*22.9 ± 3.017.4 ± 3.2 | \*20 ± 3.717 ± 4.3 | \*19 ± 4.316 ± 3.7 | <0.001 |
| Total PEEP (cmH2O) (IQR) *b* APRV LTV | 14 (14-16)14 (12-16) | 12 (11-13)14 (10-15) | 16.1 (12.8-17.9)12.8 (9.8-16.8) | \*14 (12-17)12 (10-24) | 12 (9-13)9.5 (7-13) | 0.03 |
| Plateau pressure (cmH2O) *c* APRV LTV | 28 (26-29)27 (26-29) | 26 (24-28)25 (24-26) | 26 (24-28)24 (20-28) | 24 (21-27)22 (20-25) | 22 (20-26)22 (18-24) | 0.02 |
| Driving pressure (cmH2O) d APRV LTV | 13.7 ± 3.613.8 ± 4.7 | \*13.8 ± 2.711.7 ± 2.4 | \*10.2 ± 2.011.3 ± 2.0 | 9.5 ± 2.410 ± 2.7 | 10.6 ± 1.911 ± 2.3 | 0.94 |
| Static compliance (ml/cmH2O)  APRV LTV | 30 ± 9.732 ± 9.2 | 35 ± 1238 ± 11 | \*47 ± 1438 ± 10 | \*55 ± 1448 ± 16 | \*52 ± 1243 ± 13 | 0.03 |
| FiO2(%) (IQR) APRV LTV | 65 (50-80)50 (45-79) | \*50 (40-60)55 (50-70) | \*40 (40-50)50 (40-56) | \*42 (40-50)50 (45-60) | \*50 (40-60)55 (41-70) | 0.01 |
| PaO2 (mmHg) (IQR) APRV LTV | 87 (70-99)83 (73-91) | 87 (80-98)83 (74-92) | \*80 (73-90)74 (70-83) | \*87 (80-90)80 (69-87) | \*85 (77-96)76 (66-81) | <0.001 |
| PaCO2 (mmHg) APRV LTV | 51 ± 1250 ± 12 | \*45 ± 1648 ± 11 | \*49 ± 747 ± 13 | 51 ± 1047 ± 12 | 46 ± 1448 ± 11 | 0.91 |
| PaO2/FiO2 ratio (SD) APRV LTV | 140 ± 42149 ± 50 | \*185 ± 53152 ± 43 | \*192 ± 55162 ± 40 | \*195 ± 40153 ± 50 | \*181 ± 43136 ± 44 | <0.001 |

\*Two-tailed p-value <0.05 between groups for each day.

*a* For APRV, recorded tidal volumes were the release volumes

*b* Corresponds to total (extrinsic + intrinsic) PEEP measured at an expiratory pause maneuver in both groups.

*c* Measured at an inspiratory pause maneuver in LTV. Corresponds to P-High (at zero flow, w/o patient effort) in APRV.

d Calculated as plateau pressure – PEEP.