**Respiratory variables during the study.**

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| **Respiratory variables during study: moderate ARDS**  |
|  | **FiO2-guided PEEP** | **Compliance-guided PEEP** | **p** | **FiO2-guided PEEP** | **Compliance-guided PEEP** | **p** | **FiO2-guided PEEP** | **Compliance-guided PEEP** | **p** |
|  | **Basal** | **6 hours** | **24 hours** |
| Minute ventilation (l/min) | 11.4±2.3 | 12.5±2.3 | 0.10 | 10.9±2.6 | 12.3±2.4 | 0.05 | 11.9±2.6 | 12.4±2.1 | 0.41 |
| Respiratory rate (cicles/min) | 21.9±4.9 | 23.7±5.2 | 0.21 | 22.8±5.1 | 24.6±5.1 | 0.20 | 23.9±5.1 | 25.2±4.7 | 0.34 |
| Peak pressure (cmH2O) | 36.7±7.1 | 36.9±7.5 | 0.93 | 35.3±6.6 | 35.7± 7.2 | 0.85 | 36.6±5.9 | 34.8±6.2 | 0.29 |
| Plateau pressure (cmH2O) | 29.1±6.8 | 27.6±7.7 | 0.44 | 27.0±6.9 | 26.1±6.3 | 0.62 | 26.8±7.0 | 25.7±6.2 | 0.54 |
| PEEP (cmH2O) | 9.9±3.1 | 10.1±2.6 | 0.84 | 10.0±2.5 | 10.6±2.5 | 0.45 | 9.7±2.2 | 10.6±2.7 | 0.18 |
| Compliance (ml/cmH2O) | 30.0±10.3 | 34.5±13.7 | 0.18 | 31.6±12.8 | 36.3±14.5 | 0.21 | 32.9±14.3 | 37.4±16.7 | 0.30 |
| PaO2/FiO2 (mmHg) | 147.9±23.7 | 158.3±24.8 | 0.12 | 156.2±31.5 | 155.1±39.0 | 0.91 | 167.0±42.6 | 180.4±51.4 | 0.43 |
| pH | 7.35±0.06 | 7.34±0.06 | 0.52 | 7.33±0.07 | 7.33±0.06 | 0.96 | 7.35±0.07 | 7.34±0.07 | 0.45 |
| PaCO2 | 42.8±5.6 | 41.2±5.4 | 0.28 | 44.5±8.7 | 42.6±5.6 | 0.35 | 44.3±6.9 | 42.5±6.1 | 0.33 |
|  | **48 hours** | **72 hours** | **7 days** |
| Minute ventilation (l/min) | 12.0±.2.3 | 12.7±1.7 | 0.21 | 11.8±2.6 | 12.5±2.6 | 0.32 | 13.0±2.8 | 12.8±2.8 | 0.83 |
| Respiratory rate cicles/min) | 25.1±5.7 | 25.1±4.5 | 0.98 | 24.2±6.2 | 25.1±5.9 | 0.58 | 24.6±5.7 | 22.9±5.0 | 0.32 |
| Peak pressure (cmH2O) | 36.0±6.8 | 35.5±7.1 | 0.79 | 35.2±7.8 | 33.7±7.3 | 0.50 | 33.4±9.2 | 31.6±9.0 | 0.52 |
| Plateau pressure (cmH2O) | 26.7±7.9 | 26.0±7.1 | 0.73 | 26.5±7.9 | 25.1±7.3 | 0.52 | 26.3±8.3 | 23.5±7.3 | 0.26 |
| PEEP (cmH2O) | 9.2±2.2 | 10.3±2.2 | 0.07 | 8.7±2.4 | 10.0±2.5 | 0.07 | 8.2±2.8 | 8.7±3.0 | 0,57 |
| Compliance (ml/cmH2O) | 31,5±14.7 | 42.7±45.9 | 0.25 | 32.3±14.4 | 47.5±55.4 | 0.19 | 37.0±23.1 | 47.4±27.5 | 0.19 |
| PaO2/FiO2 (mmHg) | 180.1±47.4 | 196.4±77.1 | 0.37 | 196.2±52.0 | 203.7±83.4 | 0.69 | 199.5±52.9 | 187.6±63.6 | 0.52 |
| pH | 7.36±0.05 | 7.36±0.07 | 0.99 | 7.38±0.06 | 7.37±0.06 | 0.41 | 7.39±0.06 | 7.39±0.06 | 0.87 |
| PaCO2 | 44.9±6.7 | 41.4±6.31 | 0.06 | 42.5±6.6 | 43.3±7.6 | 0.67 | 40.5±6.4 | 41.1±7.0 | 0.79 |
|  | **14 days** | **21 days** | **28 days** |
| Minute ventilation (l/min) | 11.4±2.8 | 13.3±3.5 | 0.20 | 12.0±3.2 | 13.4±1.9 | 0.43 | 9.50±32.6 | 11.2±3.4 | 0.45 |
| Respiratory rate cicles/min) | 24.2±5.5 | 23.7±5.5 | 0.84 | 22.2±4.9 | 20.6±2.5 | 0.40 | 18.2±3.3 | 18.6±5.6 | 0.91 |
| Peak pressure (cmH2O) | 36.5±8.2 | 33.5±9.1 | 0.44 | 33.4±7.4 | 32.4±3.0 | 0.78 | 25.5±6.4 | 30.2±10.2 | 0.45 |
| Plateau pressure (cmH2O) | 27.2±9.6 | 25.4±7.1 | 0.62 | 26.0±7.1 | 24.6±2.8 | 0.69 | 20.7±6.2 | 24.0±8.0 | 0.52 |
| PEEP (cmH2O) | 8.4±2.9 | 7.8±2.0 | 0.59 | 6.2±2.9 | 8.6±2.2 | 0.17 | 6.2±1.7 | 8.6±3.3 | 0.23 |
| Compliance (ml/cmH2O) | 30.5±15.7 | 38.4±19.6 | 0.97 | 27.9±9.1 | 40.4±12.7 | 0.11 | 41.3±14.8 | 49.9±24.7 | 0.56 |
| PaO2/FiO2 (mmHg) | 205.9±58.5 | 196.0±72.9 | 0.72 | 260.1±40.2 | 200.4±29.4 | 0.02 | 297.1±51.5 | 266.6±89.8 | 0.56 |
| pH | 7.38±0.07 | 7.40±0.05 | 0.36 | 7.40±0.06 | 7.38±0.06 | 0.51 | 7.41±0.05 | 7.36±0.03 | 0.09 |
| PaCO2 | 40.8±9.7 | 41.2±7.5 | 0.92 | 39.2±6.3 | 36.5±4.1 | 0.45 | 38.7±2.8 | 41.6±6.5 | 0.44 |
| Data are presented as mean ± standard deviation.Abbreviations: PEEP: Positive end-expiratory pressure. PaO2/FiO2: ratio to the partial pressure of arterial oxygen to the fraction of inspired oxygen. PaCO2: partial pressure of arterial dioxide of carbon. |

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| **Respiratory variables during study: severe ARDS.** |
|  | **FiO2-guided PEEP** | **Compliance-guided PEEP** | **p** | **FiO2-guided PEEP** | **Compliance-guided PEEP** | **p** | **FiO2-guided PEEP** | **Compliance-guided PEEP** | **p** |
|  | **Basal** | **6 hours** | **24 hours** |
| Minute ventilation (l/min) | 13.3±2.6 | 14.6±3.1 | 0.34 | 12.9±2.0 | 13.9±2.62 | 0.39 | 13.4±2.5 | 14.7±2.8 | 0.33 |
| Respiratory rate (cicles/min) | 24.5±4.7 | 28.8±4.9 | 0.09 | 26.9±4.7 | 29.8±5.9 | 0.28 | 27.7±3.2 | 29.2±7.2 | 0.46 |
| Peak pressure (cmH2O) | 40.4±6.5 | 41.0±7.2 | 0.85 | 41.4±8.3 | 40.2±5.3 | 0.73 | 41.8±7.4 | 41.0±8.9 | 0.84 |
| Plateau pressure (cmH2O) | 35.4±8.8 | 31.0±7.8 | 0.32 | 36.0±10.7 | 31.8±7.0 | 0.40 | 34.5±9.6 | 31.2±6.7 | 0.46 |
| PEEP (cmH2O) | 12.7±2.5 | 12.8±3.1 | 0.94 | 13.2±2.5 | 13.8±2.2 | 0.60 | 13.1±3.4 | 14.5± 2.2 | 0.37 |
| Compliance (ml/cmH2O) | 27.0±7.9 | 30.5±8.9 | 0.42 | 25.0±10.6 | 30.4±13.6 | 0.37 | 26.8±10.3 | 35.2±18.6 | 0.24 |
| PaO2/FiO2(mmHg) | 99.6±35.1 | 90.2±26.6 | 0.57 | 98.7±22.6 | 94.6±23.5 | 0.72 | 106.2±23.2 | 104.6±28.6 | 0.90 |
| pH | 7.31±0.07 | 7.26±0.03 | 0.18 | 7.28±0.06 | 7.24±0.05 | 0.26 | 7.27±0.05 | 7.24±0.04 | 0.31 |
| PaCO2 | 43.9±10.1 | 45.6±6.9 | 0.72 | 48.8±15.5 | 45.0±6.1 | 0.56 | 48.6±8.6 | 46.8±7.8 | 0.68 |
|  | **48 hours** | **72 hours** | **7 days** |
| Minute ventilation (l/min) | 13.6±1.7 | 14.4±2.8 | 0.52 | 14.6±1.8 | 15.2±3.1 | 0.63 | 16.2±2.5 | 14.8±3.1 | 0.45 |
| Respiratory rate (cicles/min) | 29.3±4.7 | 29.6±2.3 | 0.89 | 29.1±3.9 | 31.4±6.1 | 0.40 | 30.0±3.3 | 29.0±1.7 | 0.64 |
| Peak pressure (cmH2O) | 39.3±7.7 | 41.8±9.2 | 0.58 | 37.1±9.5 | 40.6±9.6 | 0.52 | 39.6±8.0 | 33.7± 4.0 | 0.26 |
| Plateau pressure (cmH2O) | 31.8±10.0 | 35.2±7.7 | 0.51 | 32.1±8.6 | 32.6±8.0 | 0.91 | 35.7±8.5 | 28.3± 9.1 | 0.23 |
| PEEP (cmH2O) | 13.7±3.03 | 15.6±3.3 | 0.30 | 12.4±2.8 | 14.2±3.4 | 0.31 | 13.4±3.6 | 11.3±7.6 | 0.54 |
| Compliance (ml/cmH2O) | 33.9±17.7 | 27.6±12.4 | 0.49 | 29.0±8.9 | 33.5±20.9 | 0.58 | 25.1±4.5 | 28.8±4.7 | 0.26 |
| PaO2/FiO2 (mmHg) | 124.8±41.2 | 149.9±71.5 | 0.39 | 121.3±30.9 | 153.62±67.1 | 0.19 | 132.9±55.0 | 210.6±77.0 | 0.09 |
| pH | 7.27±0.04 | 7.29±0.07 | 0.40 | 7.28±0.06 | 7.32±0.07 | 0.25 | 7.28±0.08 | 7.37±0.10 | 0.20 |
| PaCO2 | 47.6±9.5 | 43.2±12.4 | 0.46 | 48.9±8.2 | 43.8±8.6 | 0.29 | 49.0±9.9 | 40.5±6.9 | 0.21 |
|  | **14 days** | **21 days** | **28 days** |
| Minute ventilation (l/min) | 16.5±3.8 | 12.9 | 0.45 | 15.3±1.0 | 16.2 | 0.52 | 13.7±1.8 |  |  |
| Respiratory rate (cicles/min) | 25.2±3.4 | 24.0 | 0.76 | 24.7±5.0 | 24.0 | 0.91 | 26.7±5.1 |  |  |
| Peak pressure (cmH2O) | 39.2±11.8 | 34.0 | 0.71 | 33.3±3.0 | 33.0 | 0.93 | 21.7±14.6 |  |  |
| Plateau pressure (cmH2O) | 35.0±12.0 | 27.0 | 0.59 | 21.3±4.2 | 20.0 | 0.80 | 17.7±8.0 |  |  |
| PEEP (cmH2O) | 11.0±3.8 | 8.0 | 0.53 | 7.0±2.6 | 6.0 | 0.77 | 6.3±1.5 |  |  |
| Compliance (ml/cmH2O) | 29.1±17.1 | 28.4 | 0.97 | 45.7±17.3 | 43.9 | 0.93 | 76.4±55.3 |  |  |
| PaO2/FiO2 (mmHg) | 160.9± 60.6 | 285.0 | 0.16 | 219.5±38.2 | 380.0 | 0.06 | 252.4±82.5 |  |  |
| pH | 7.35±0.08 | 7.50 | 0.22 | 7.45±0.05 | 7.43 | 0.74 | 7.36±0.02 |  |  |
| PaCO2 | 46.6±8.3 | 35.4 | 0.32 | 34.5±9.5 | 38.4 | 0.75 | 41.4±12.8 |  |  |
| Data are presented as mean ± standard deviation. Abbreviations: PEEP: Positive end-expiratory pressure. PaO2/FiO2: ratio to the partial pressure of arterial oxygen to the fraction of inspired oxygen. PaCO2: partial pressure of arterial dioxide of carbon. |