**Supplementary material**

Table E2 Characteristics of the patients with and without tracheostomy at randomization

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|  | Tracheostomized patient (n=34) | Non-tracheostomized patient (n=65) | *P* |
| Gender, M (%) | 23 (68) | 43 (66) | >0.999 |
| Age, years | 74 (60, 79.0) | 78 (64, 81) | 0.323 |
| Predicted body weight, kg | 66 (54, 71) | 66 (54, 69) | 0.240 |
| APACHEⅡ | 20 (16, 24) | 22 (16, 27) | 0.247 |
| Comorbidity |
| Respiratory system, n (%) | 4 (12) | 17 (26) | 0.123 |
| Cardiovascular System, n (%) | 10 (29) | 40 (62) | 0.002 |
| Others, n (%) | 16 (47) | 22 (34) | 0.199 |
| Duration of MV prior to inclusion, days | 7.5 (3.9, 15.4) | 4.2 (2.5, 7.4) | 0.006 |
| Main diagnosis |
| Pneumonia, n (%) | 10 (29) | 17 (26) | 0.730 |
| Extrapulmonary sepsis, n (%) | 0 (0) | 2 (3) | 0.301 |
| ACS or CHF, n (%) | 3 (9) | 13 (20) | 0.947 |
| AECOPD | 2 (6) | 8 (12) | 0.314 |
| Nervous system disease with regular spontaneous breathing, n (%) | 7 (20) | 7 (11) | 0.183 |
| Abdominal surgery, n (%) | 3 (9) | 6 (9) | 0.947 |
| Thoracic surgery, n (%) | 2 (6) | 1 (2) | 0.231 |
| Sever trauma, n (%) | 4 (12) | 4 (6) | 0.331 |
| Others, n (%) | 3 (9) | 7 (11) | 0.760 |
| Respiratory mechanics |
| Respiratory system static compliance, ml / cmH2O | 34.8 (32.9, 46.0) | 38.6 (32.9, 45.4) | 0.967 |
| Airway resistance, cmH2O / L. S-1 | 10.0 (8.9, 11.0) | 10.0 (9.0, 12.3) | 0.837 |
| Type of difficult weaning |
| Failure of first SBT, n (%) | 29 (85) | 49 (75) | 0.252 |
| Reintubation within 48 h after extubation, n (%) | 5 (11) | 16 (25) | 0.252 |
| Ventilator settings and respiratory parameters |
| PEEP, cmH2O | 6 (5, 6) | 5 (5, 6) | 0.831 |
| PS, cmH2O | 8 (8, 10) | 8 (7, 10) | 0.460 |
| FIO2, % | 40 (40, 40) | 40 (40, 40) | 0.767 |
| Tidal volume, ml/kg (Ideal body weight) | 6.1 (5.7, 7.3) | 6.8 (5.8, 7.6) | 0.116 |
| Respiratory rate, breath/min | 25 (18, 28) | 20 (16, 5) | 0.059 |
| Minute ventilation, L/min | 8.5 (6.7, 12.7) | 8.1 (6.8, 10.4) | 0.231 |
| pH | 7.43 (7.40, 7.46) | 7.44 (7.38, 7.46) | 0.839 |
| PaO2/FiO2, mmHg | 303 (233, 352) | 266 (230, 307) | 0.148 |
| PaCO2, mmHg | 31 (29, 38) | 36 (33, 42) | 0.009 |

Data are presented as frequency (%) or median (interquartile range), PSV, pressure support ventilation; NAVA, neurally adjusted ventilatory assist; PEEP, positive end-expiratory pressure; PS, pressure support; APACHE II, Acute Physiology and Chronic Health Evaluation II; MV, mechanical ventilation; ACS, Acute coronary syndrome; CHF, Congestive heart failure; FIO2, fraction of inspired oxygen; SBT, Spontaneous breathing trial.