**Supplementary Table 1. Multivariate analysis of factors that influenced unfavorable neurological outcomes**

|  |  |  |  |
| --- | --- | --- | --- |
| Variable | OR | 95% CI | *p*-value |
| Age >65 years | 10.80 | 4.86–23.90 | <0.01 |
| Sex (female) | 0.80 | 0.36–1.78 | 0.59 |
| H&K grade  | 2.46 | 1.73–3.51 | <0.01 |
| Treatment approach (clip) | 0.74 | 0.32–1.73 | 0.49 |
| Hyperoxia subgroups (1–4) | 1.55 | 0.99–2.44 | 0.06 |

OR, odds ratio; CI, confidence interval; H&K, Hunt and Kosnik.

Hyperoxia subgroups (1–4): 1, normoxia (max PaO2, 60–120 mmHg); 2, mild hyperoxia (max PaO2, 121–200 mmHg); 3, moderate hyperoxia (max PaO2, 201–300 mmHg); 4, severe hyperoxia (max PaO2 > 300 mmHg)

**Supplementary Table 2. Multivariate analysis of factors that influenced unfavorable neurological outcomes in patients with H&K grades I to III**

|  |  |  |  |
| --- | --- | --- | --- |
| Variable | OR | 95% CI | *p*-value |
| Age >65 years | 19.10 | 6.47–56.40 | <0.01 |
| Sex (female) | 0.39 | 0.14–1.09 | 0.07 |
| H&K grade  | 3.30 | 1.61–6.75 | <0.01 |
| Treatment modality (clip) | 0.44 | 0.15–1.31 | 0.14 |
| Hyperoxia subgroups (1–4) | 2.01 | 1.11–3.64 | 0.02 |

OR, odds ratio; CI, confidence interval; H&K, Hunt and Kosnik.

Hyperoxia subgroups (1–4): 1, normoxia (max PaO2, 60–120 mmHg); 2, mild hyperoxia (max PaO2, 121–200 mmHg); 3, moderate hyperoxia (max PaO2, 201–300 mmHg); 4, severe hyperoxia (max PaO2 > 300 mmHg)

**Supplementary Table 3.** **Baseline characteristics of the patients with H&K grades I to III across hyperoxia subgroups**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Variables | Normoxia(N = 11) | Mild hyperoxia(N = 72) | Moderate hyperoxia (N = 43) | Severe hyperoxia(N = 18) | *p*-value |
| Age (years) | 64.2 ± 15.2 | 61.0 ± 18.0 | 62.9 ± 16.7 | 64.7 ± 16.6 | 0.82 |
| Sex (male) |  3 (27.3)  | 25 (34.7)  | 11 (25.6)  |  4 (22.2)  | 0.63 |
| H&K grades |  |  |  |  | 0.26 |
| I |  2 (18.2)  | 12 (16.7)  |  7 (16.3)  |  2 (11.1)  |  |
| II |  9 (81.8)  | 39 (54.2)  | 20 (46.5)  |  8 (44.4)  |  |
| III |  0 (0.0)  | 21 (29.2)  | 16 (37.2)  |  8 (44.4)  |  |
| Treatment approach |  |  |  |  | 0.04 |
| Coil |  7 (63.6)  | 49 (68.1)  | 32 (74.4)  | 14 (77.8)  |  |
| Clip |  3 (27.3)  | 23 (31.9)  | 11 (25.6)  |  4 (22.2)  |  |
| Not coil or clip |  1 (9.1)  |  0 (0.0)  |  0 (0.0)  |  0 (0.0)  |  |
| Number of arterial blood gas analyses during the first 24 hours in the ICU | 5.0 [5.0–6.0] | 5.0 [4.0–6.0] | 5.0 [5.0–6.0] | 5.0 [5.0–6.0] | 0.61 |
| Median PaO2 during the first 24 h in ICU (mmHg) | 87 [80–94] | 127 [113–146] | 164 [152–184] | 157 [138–182] | <0.01 |
| Maximum PaO2 level during the first 24 h in ICU (mmHg) | 107 [101–110] | 162 [147–179] | 236 [223–250] | 403 [328–468] | <0.01 |
| Minimum PaO2 level during the first 24 h in ICU (mmHg) | 80 [72–81] | 94 [79–115] | 118 [97–132] | 116 [94–138] | <0.01 |
| Hypoxia (PaO2 < 60 mmHg) | 1 (9.1) | 3 (4.2) | 1 (2.3) | 0 (0.0) | 0.58 |
| Modified Rankin Scale |  |  |  |  | 0.80 |
| 0 |  5 (45.5)  | 19 (26.4)  | 10 (23.3)  |  2 (11.1)  |  |
| 1 |  3 (27.3)  | 16 (22.2)  |  7 (16.3)  |  4 (22.2)  |  |
| 2 |  2 (18.2)  | 14 (19.4)  |  9 (20.9)  |  2 (11.1)  |  |
| 3 |  1 (9.1)  |  8 (11.1)  |  7 (16.3)  |  4 (22.2)  |  |
| 4 |  0 (0.0)  | 10 (13.9)  |  5 (11.6)  |  4 (22.2)  |  |
| 5 |  0 (0.0)  |  2 (2.8)  |  4 (9.3)  |  1 (5.6)  |  |
| 6 |  0 (0.0)  |  3 (4.2)  |  1 (2.3)  |  1 (5.6)  |  |
| DCI |  0 (0.0)  |  9 (12.5)  |  8 (18.6)  |  3 (16.7)  | 0.42 |
| Duration of mechanical ventilation | 1 [1–2] | 2 [1–5] | 1 [1–6] | 2 [1–4] | 0.33 |
| ICU stay | 13 [11–15] | 15 [12–17] | 15 [13–19] | 16 [13–17] | 0.53 |
| Hospital stay | 20 [19–23] | 26 [22–38] | 28 [22–37] | 30 [24–44] | 0.04 |

Data are expressed as mean ± standard deviation, number (percentage), or median [interquartile range].

H&K, Hunt and Kosnik; DCI, delayed cerebral ischemia; ICU, intensive care unit.

Hyperoxia subgroups (1–4): 1, normoxia (max PaO2, 60–120 mmHg); 2, mild hyperoxia (max PaO2, 121–200 mmHg); 3, moderate hyperoxia (max PaO2, 201–300 mmHg); 4, severe hyperoxia (max PaO2 > 300 mmHg).

**Supplementary Table 4. Association between PaO2 levels and DCI (univariate analysis)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variable | All patients(N = 196) | DCI(N = 27) | No DCI(N = 169) | *p*-value |
| Age (years) | 62.7 ± 16.8 | 63.5 ± 15.2 | 62.5 ± 17.1 | 0.78 |
| Sex (male) | 63 (32.1) |  9 (33.3)  |  54 (32.0)  | 1.00 |
| H&K grades |  |  |  | 0.01 |
| I |  23 (11.7)  |  1 (3.7)  |  22 (13.0)  |  |
| II |  76 (38.8)  |  6 (22.2)  |  70 (41.4)  |  |
| III |  45 (23.0)  | 13 (48.1)  |  32 (18.9)  |  |
| IV |  36 (18.4)  |  6 (22.2)  |  30 (17.8)  |  |
| V |  16 (8.2)  |  1 (3.7)  |  15 (8.9)  |  |
| Treatment approach |  |  |  | 0.08 |
| Coil | 144 (73.5)  | 16 (59.3)  | 128 (75.7)  |  |
| Clip |  50 (25.5)  | 10 (37.0)  |  40 (23.7)  |  |
| Not coil or clip |  2 (1.0)  |  1 (3.7)  |  1 (0.6)  |  |
| Number of ABG analyses during the first 24 h in ICU | 5.0 [4.0–6.0] | 5.0 [4.0–6.0] | 5.0 [5.0–6.0] | 0.23 |
| Median PaO2 during the first 24 h in ICU (mmHg) | 140 [118–169] | 149 [123–178] | 137 [117–167] | 0.19 |
| Maximum PaO2 level during the first 24 h in ICU (mmHg) | 193 [155–250] | 216 [172–261] | 193 [150–245] | 0.09 |
| Minimum PaO2 level during the first 24 h in ICU (mmHg) | 103 [82–130] | 115 [84–142] | 101 [82–130] | 0.31 |
| Hypoxia (PaO2 <60 mmHg) | 5 (2.6) |  1 (3.7)  |  4 (2.4)  | 0.53 |
| Hyperoxia subgroups |  |  |  | 0.15 |
| Normoxia (max PaO2 60–120 mmHg) |  13 (6.6)  |  0 (0.0)  |  13 (7.7)  |  |
| Mild (max PaO2 121–200 mmHg) |  95 (48.5)  | 10 (37.0)  |  85 (50.3)  |  |
| Moderate (max PaO2 201–300 mmHg) |  62 (31.6)  | 13 (48.1)  |  49 (29.0)  |  |
| Severe (max PaO2 >300 mmHg) |  26 (13.3)  |  4 (14.8)  |  22 (13.0)  |  |
| Modified Rankin Scale |  |  |  | 0.04 |
| 0 |  41 (20.9)  |  2 (7.4)  |  39 (23.1)  |  |
| 1 |  30 (15.3)  |  1 (3.7)  |  29 (17.2)  |  |
| 2 |  35 (17.9)  |  6 (22.2)  |  29 (17.2)  |  |
| 3 |  31 (15.8)  |  9 (33.3)  |  22 (13.0)  |  |
| 4 |  31 (15.8)  |  4 (14.8)  |  27 (16.0)  |  |
| 5 |  16 (8.2)  |  3 (11.1)  |  13 (7.7)  |  |
| 6 |  12 (6.1)  |  2 (7.4)  |  10 (5.9)  |  |
| Duration of mechanical ventilation | 2 [1–9] | 3 [1–13] | 2 [1–9] | 0.54 |
| ICU stay | 15 [13–19] | 20 [15–23] | 15 [12–18] | <0.01 |
| Hospital stay | 28 [22–44] | 38 [30–68] | 26 [22–40] | <0.01 |
| Hospital mortality | 12 (6.1) |  2 (7.4)  |  10 (5.9)  | 0.67 |

Data are expressed as mean ± standard deviation, number (percentage), or median [interquartile range].

H&K, Hunt and Kosnik; ABG, arterial blood gas; DCI, delayed cerebral ischemia; ICU, intensive care unit.