**Supplementary material**

Supplementary Table 1. Characteristics of severe trauma patients according to prehospital alcohol use.

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| Variables | Trauma patients with alcohol drinking | Trauma patients without alcohol drinking |
| All | Shock index | *p*-value | All | Shock index | *p*-value |
| Abnormal (>0.9) | Normal (≤0.9) | Abnormal (>0.9) | Normal (≤0.9) |
| All | 168 (100.0) | 26 (100.0) | 142 (100.0) |  | 551 (100.0) | 96 (100.0) | 455 (100.0) |  |
| Age |
|  | 18–65 | 135 (80.4) | 20 (76.9) | 115 (81.0) | 0.63 | 345 (62.6) | 69 (71.9) | 276 (60.7) | 0.014 |
| 65–120 | 33 (19.6) | 6 (23.1) | 27 (19.0) | 206 (37.4) | 27 (28.1) | 179 (39.3) |
| Sex, male | 118 (70.2) | 19 (73.1) | 99 (69.7) | 0.73 | 348 (63.2) | 62 (64.6) | 286 (62.9) | 0.75 |
| Place of injury, home | 63 (37.5) | 10 (38.5) | 53 (37.3) | 0.91 | 195 (35.4) | 23 (24.0) | 172 (37.8) | <0.001 |
| Activity before injury |
|  | Work | 7 (4.2) |  (0.0) | 7 (4.9) | 0.51 | 95 (17.2) | 12 (12.5) | 83 (18.2) | <0.001 |
| Leisure | 31 (18.5) | 5 (19.2) | 26 (18.3) | 114 (20.7) | 32 (33.3) | 82 (18.0) |
| Other | 130 (77.4) | 21 (80.8) | 109 (76.8) | 342 (62.1) | 52 (54.2) | 290 (63.7) |
| Mechanism of injury |
|  | Traffic accident | 37 (22.0) | 9 (34.6) | 28 (19.7) | 0.23 | 187 (33.9) | 41 (42.7) | 146 (32.1) | 0.12 |
| Fall-down | 43 (25.6) | 5 (19.2) | 38 (26.8) | 165 (29.9) | 27 (28.1) | 138 (30.3) |
| Other | 88 (52.4) | 12 (46.2) | 76 (53.5) | 199 (36.1) | 28 (29.2) | 171 (37.6) |
| Injury area |
|  | Head | 53 (31.5) | 7 (26.9) | 46 (32.4) | 0.58 | 222 (40.3) | 37 (38.5) | 185 (40.7) | 0.7 |
| Neck and face | 42 (25.0) | 4 (15.4) | 38 (26.8) | 0.22 | 114 (20.7) | 13 (13.5) | 101 (22.2) | 0.06 |
| Chest | 35 (20.8) | 8 (30.8) | 27 (19.0) | 0.17 | 172 (31.2) | 45 (46.9) | 127 (27.9) | 0.013 |
| Abdomen | 19 (11.3) | 4 (15.4) | 15 (10.6) | 0.48 | 104 (18.9) | 36 (37.5) | 68 (14.9) | <0.001 |
| Spine | 8 (4.8) | 2 (7.7) | 6 (4.2) | 0.45 | 45 (8.2) | 6 (6.3) | 39 (8.6) | 0.45 |
| Extremity | 32 (19.0) | 6 (23.1) | 26 (18.3) | 0.57 | 210 (38.1) | 49 (51.0) | 161 (35.4) | <0.001 |
| Other | 67 (39.9) | 13 (50.0) | 54 (38.0) | 0.25 | 169 (30.7) | 28 (29.2) | 141 (31.0) | 0.72 |
| Prehospital GCS |
|  | Alert | 80 (47.6) | 11 (42.3) | 69 (48.6) | <0.001 | 365 (66.2) | 53 (55.2) | 312 (68.6) | 0.04 |
| Drowsy | 19 (11.3) | 1 (3.8) | 18 (12.7) | 57 (10.3) | 14 (14.6) | 43 (9.5) |
| Stupor | 14 (8.3) | 4 (15.4) | 10 (7.0) | 33 (6.0) | 5 (5.2) | 28 (6.2) |
| Coma | 55 (32.7) | 10 (38.5) | 45 (31.7) | 96 (17.4) | 24 (25.0) | 72 (15.8) |
| Prehospital advanced airway, yes | 42 (25.0) | 6 (23.1) | 36 (25.4) | 0.81 | 72 (13.1) | 25 (26.0) | 47 (10.3) | 0.021 |
| Prehospital fluid resuscitation, yes | 13 (7.7) | 3 (11.5) | 10 (7.0) | 0.43 | 16 (2.9) | 2 (2.1) | 14 (3.1) | 0.6 |
| ER SBP (mmHg), mean (IQR) | 130 (112–141) | 100 (88–105) | 130 (122–145) | <0.001 | 130 (110–150) | 100 (80–110) | 137 (120–155) | <0.001 |
| ER HR (times/min), mean (IQR) | 83 (77–98) | 104 (96–120) | 78 (77–91) | <0.001 | 84 (74–98) | 108 (92–120) | 80 (71–93) | <0.001 |
| ISS, mean (IQR) | 27 (22–32) | 27 (25–30) | 25 (20–33) | <0.001 | 22 (17–27) | 22 (19–27) | 22 (17–27) | 0.14 |
| Clinical outcome |
|  |  Poor functional outcome | 50 (29.8) | 7 (26.9) | 43 (30.3) | 0.73 | 216 (39.2) | 56 (58.3) | 160 (35.2) | <0.001 |
|  In-hospital mortality | 35 (20.8) | 4 (15.4) | 31 (21.8) | 0.46 | 57 (10.3) | 15 (15.6) | 42 (9.2) | 0.06 |

GCS, Glasgow coma scale; SBP, systolic blood pressure; HR, heart rate; IQR, interquartile range, ISS, injury severity scale.

Supplementary Table 2. Characteristics of severe trauma patients according to age group.

|  |  |  |
| --- | --- | --- |
| Variables | Young Trauma Patients | Old trauma patients |
| All | Shock index | *p*-value | All | Shock index | *p*-value |
| Abnormal (>0.9) | Normal (≤0.9) | Abnormal (>0.9) | Normal (≤0.9) |
| All | 480 (100.0) | 89 (100.0) | 391 (100.0) |  | 239 (100.0) | 33 (100.0) | 206 (100.0) |  |
| Sex, male | 318 (66.3) | 58 (65.2) | 260 (66.5) | 0.81 | 148 (61.9) | 23 (69.7) | 125 (60.7) | 0.32 |
| Place of injury, home | 173 (36.0) | 26 (29.2) | 147 (37.6) | 0.14 | 85 (35.6) | 7 (21.2) | 78 (37.9) | 0.3 |
| Activity before injury |
|  | Work | 72 (15.0) | 9 (10.1) | 63 (16.1) | 0.02 | 30 (12.6) | 3 (9.1) | 27 (13.1) | 0.14 |
| Leisure | 96 (20.0) | 27 (30.3) | 69 (17.6) | 49 (20.5) | 10 (30.3) | 39 (18.9) |
| Other | 312 (65.0) | 53 (59.6) | 259 (66.2) | 160 (66.9) | 20 (60.6) | 140 (68.0) |
| Mechanism of injury |
|  | Traffic accident | 154 (32.1) | 36 (40.4) | 118 (30.2) | 0.07 | 70 (29.3) | 14 (42.4) | 56 (27.2) | 0.86 |
| Fall-down | 120 (25.0) | 24 (27.0) | 96 (24.6) | 88 (36.8) | 8 (24.2) | 80 (38.8) |
| Other | 206 (42.9) | 29 (32.6) | 177 (45.3) | 81 (33.9) | 11 (33.3) | 70 (34.0) |
| Injury area |
|  | Head | 163 (34.0) | 29 (32.6) | 134 (34.3) | 0.76 | 112 (46.9) | 15 (45.5) | 97 (47.1) | 0.04 |
| Neck and face | 112 (23.3) | 12 (13.5) | 100 (25.6) | 0.01 | 44 (18.4) | 5 (15.2) | 39 (18.9) | 0.6 |
| Chest | 138 (28.8) | 38 (42.7) | 100 (25.6) | <0.001 | 69 (28.9) | 15 (45.5) | 54 (26.2) | 0.02 |
| Abdomen | 90 (18.8) | 30 (33.7) | 60 (15.3) | <0.001 | 33 (13.8) | 10 (30.3) | 23 (11.2) | <0.001 |
| Spine | 37 (7.7) | 5 (5.6) | 32 (8.2) | 0.41 | 16 (6.7) | 3 (9.1) | 13 (6.3) | 0.55 |
| Extremity | 156 (32.5) | 41 (46.1) | 115 (29.4) | <0.001 | 86 (36.0) | 14 (42.4) | 72 (35.0) | 0.41 |
| Other | 184 (38.3) | 35 (39.3) | 149 (38.1) | 0.99 | 52 (21.8) | 6 (18.2) | 46 (22.3) | 0.59 |
| Prehospital GCS |
|  | Alert | 307 (64.0) | 52 (58.4) | 255 (65.2) | 0.64 | 138 (57.7) | 12 (36.4) | 126 (61.2) | <0.001 |
| Drowsy | 47 (9.8) | 11 (12.4) | 36 (9.2) | 29 (12.1) | 4 (12.1) | 25 (12.1) |
| Stupor | 31 (6.5) | 6 (6.7) | 25 (6.4) | 16 (6.7) | 3 (9.1) | 13 (6.3) |
| Coma | 95 (19.8) | 20 (22.5) | 75 (19.2) | 56 (23.4) | 14 (42.4) | 42 (20.4) |
| Prehospital advanced airway, yes | 82 (17.1) | 23 (25.8) | 59 (15.1) | <0.001 | 32 (13.4) | 8 (24.2) | 24 (11.7) | 0.81 |
| Prehospital fluid resuscitation, yes | 20 (4.2) | 1 (1.1) | 19 (4.9) | <0.001 | 9 (3.8) | 4 (12.1) | 5 (2.4) | 0.03 |
| ER SBP (mmHg), mean (IQR) | 398 (82.9) | 100 (80–110) | 133 (120–152) | 0.02 | 133 (112–164) | 100 (88–105) | 130 (122–145) | 0.05 |
| ER HR (times/min), mean (IQR) | 98 (85–105) | 106 (92–120) | 80 (73–92) | 0.11 | 91 (78–109) | 104 (96–120) | 78 (77–91) |  0.003 |
| ISS, mean (IQR) | 20 (4.2) | 22 (19–29) | 22 (17–29) | <0.001 | 22 (17–27) | 22 (19–27) | 22 (17–27) | 0.93 |
| Clinical outcome |
|  | Poor functional outcome | 157 (32.7) | 40 (44.9) | 117 (29.9) | <0.001 | 109 (45.6) | 23 (69.7) | 86 (41.7) | <0.001 |
| In-hospital mortality | 50 (10.4) | 7 (7.9) | 43 (11.0) | 0.38 | 42 (17.6) | 12 (36.4) | 30 (14.6) | <0.001 |

GCS, Glasgow coma scale; SBP, systolic blood pressure; HR, heart rate; IQR, interquartile range, ISS, injury severity scale.