Correction: Intensive care unit versus high-dependency care unit admission on mortality in patients with septic shock: a retrospective cohort study using Japanese claims data

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Following publication of the original article [1], the authors reported three errors in Tables 5 and 6.

In the annotation “a” of Table 5, “catecholamines” and “vasopressin” have been mistakenly listed as covariates and should be removed.

The correct annotation “a” of Table 5 should read: “Adjusted HR adjusted for age, sex, Charlson comorbidity index, admission year, ambulance use, teaching hospitals, emergency charge, hospital beds, patients from nursing home, source of infection, drainage, surgery, mechanical ventilation, CRRT, PMX-DHP, VA-ECMO, use of two or more catecholamines, transfusions (red blood cell, platelet, fresh frozen plasma), albumin, globulin, sedatives drugs, opioids drugs, recombinant thrombomodulin, antithrombin III, and hydrocortisone”.

In the annotation “a” of Table 6, “blood culture test”, “urinary chemistry test”, “catecholamines” and “vasopressin” have been mistakenly listed as covariates and should be removed.

The correct annotation “a” of Table 6 should read: “Adjusted for sex, Charlson comorbidity index, admission year, ambulance use, teaching hospitals, emergency charge, hospital beds, patients from nursing home, source of infection, drainage, surgery, mechanical ventilation, CRRT, PMX-DHP, VA-ECMO, use of two or more catecholamines, transfusions (red blood cell, platelet, fresh frozen plasma), albumin, globulin, sedatives drugs, opioids drugs, recombinant thrombomodulin, antithrombin III, and hydrocortisone”.

In addition, the “*” in annotation b and annotation c of both Tables 5 and 6 should be replaced by “a”.

The correct annotation b of Table 5 should read: “Adjusted odds ratio adjusted for the same covariates as a”.

The correct annotation c of Table 5 should read: “Regression coefficient adjusted for the same covariates as a”.

The correct annotation b of Table 6 should read: “Adjusted for age and the same covariates as a. Among these, procedure and source of infection that fell into each subgroup were excluded from the covariates”.

The correct annotation c of Table 6 should read: “Adjusted for age and the same covariates as a”.

The original article [1] has been updated.

The original article can be found online at https://doi.org/10.1186/s40560-022-00627-2.

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Table 5  Primary outcome and secondary outcomes

| Primary outcome                  | Overall  | ICU     | HDU     | Point estimates | 95% CI     | P value |
|---------------------------------|---------|---------|---------|----------------|------------|---------|
| 30-day mortality                | 2602 (24.0) | 1576 (23.9) | 1026 (24.2) | 0.89<sup>a</sup> | 0.83–0.96 | 0.005   |
| Secondary outcomes              |         |         |         |                |            |         |
| In-hospital death               | 3308 (30.6) | 2041 (31.0) | 1267 (29.9) | 0.82<sup>b</sup> | 0.75–0.90 | < 0.001 |
| Hospital length of stay, days   | 25.0 (13.0–46.0) | 26.0 (14.0–48.0) | 22.0 (12.0–43.0) | −0.31<sup>c</sup> | −1.92 to 1.28 | 0.69   |
| ICU or HDU length of stay, days | 6.0 (3.0–13.0) | 7.0 (4.0–14.0) | 5.0 (3.0–10.0) | 0.11<sup>c</sup> | −0.09 to 0.31 | 0.29   |
| Discharge to home               | 3504 (32.4) | 2036 (30.9) | 1468 (34.7) | 1.03<sup>b</sup> | 0.94–1.14 | 0.42   |
| Discharge to other hospitals    | 3501 (32.4) | 2289 (34.8) | 1212 (28.6) | 1.20<sup>b</sup> | 1.09–1.31 | < 0.001 |
| Discharge to nursing home       | 1310 (12.1) | 812 (12.3) | 498 (11.8) | 1.12<sup>b</sup> | 0.95–1.31 | 0.15   |
| Barthel index on discharge§     | 50.0 (0.0–100.0) | 50.0 (0.0–100.0) | 45.0 (0.0–100.0) | 2.32<sup>c</sup> | 0.12–4.53 | 0.038  |

Data are presented as number of events (%) or mean (IQR).

IQR interquartile range, CI confidence interval, CRRT continuous renal replacement therapy, PMX-DHP polymyxin B immobilized fiber column direct hemoperfusion, VA-ECMO venoatrial extracorporeal membrane oxygenation, IABP intra-aortic balloon pumping

§ The number of patients missing Barthel index: ICU 2499, HDU 1529

<sup>a</sup> Adjusted HR adjusted for age, sex, Charlson comorbidity index, admission year, ambulance use, teaching hospitals, emergency charge, hospital beds, patients from nursing home, source of infection, drainage, surgery, mechanical ventilation, CRRT, PMX-DHP, VA-ECMO, use of two or more catecholamines, transfusions (red blood cell, platelet, fresh frozen plasma), albumin, globulin, sedatives drugs, opioids drugs, recombinant thrombomodulin, antithrombin III, and hydrocortisone

<sup>b</sup> Adjusted odds ratio adjusted for the same covariates as<sup>a</sup>

<sup>c</sup> Regression coefficient adjusted for the same covariates as<sup>a</sup>
Table 6 Subgroup analysis and sensitivity analysis

| Subgroup analysis | 30-day mortality | Adjusted HR | 95% CI | P value |
|-------------------|------------------|-------------|--------|---------|
|                    | Number of events/number of patients (%) | Overall | ICU | HDU |
| **Subgroup analysis** |                  |           |      |      |
| Age, years         |                  |           |      |      |
| < 65               | 399/2149 (18.5)  | 282/1479 (19.0) | 117/670 (17.4) | 0.92<sup>a</sup> | 0.74–1.13 | 0.440 |
| 65–74              | 607/2657 (22.8)  | 376/1679 (22.3) | 231/978 (23.6) | 0.83<sup>a</sup> | 0.71–0.98 | 0.029 |
| 75–84              | 889/3679 (24.1)  | 540/2213 (24.4) | 349/1466 (23.8) | 0.93<sup>a</sup> | 0.82–1.06 | 0.33 |
| ≥ 85               | 707/2333 (30.3)  | 378/1213 (31.1) | 329/1120 (29.3) | 0.92<sup>a</sup> | 0.79–1.06 | 0.27 |
| **Procedures**     |                  |           |      |      |
| Mechanical ventilation | 1266/4049 (31.2) | 896/2986 (30.0) | 370/1063 (34.8) | 0.95<sup>b</sup> | 0.85–1.07 | 0.44 |
| CRRT               | 500/1691 (29.5)  | 403/1351 (29.8) | 97/340 (28.5) | 1.08<sup>b</sup> | 0.89–1.33 | 0.44 |
| PMX                | 257/1025 (25.0)  | 180/746 (24.1) | 77/279 (27.6) | 0.91<sup>b</sup> | 0.7–1.19 | 0.52 |
| VA-ECMO/IABP       | 67/200 (33.5)    | 51/172 (29.6) | 16/28 (57.1) | 0.35<sup>b</sup> | 0.17–0.69 | 0.002 |
| **Source of infection** |                |           |      |      |
| Respiratory disease | 442/1635 (27.0)  | 239/971 (24.6) | 203/664 (30.5) | 0.86<sup>b</sup> | 0.71–1.03 | 0.1 |
| Urinary tract disease | 102/1136 (8.9)  | 50/526 (9.5) | 52/610 (8.5) | 1.06<sup>b</sup> | 0.72–1.57 | 0.75 |
| Gastrointestinal disease | 379/1739 (21.7) | 278/1293 (21.5) | 101/446 (22.6) | 1.10<sup>b</sup> | 0.88–1.36 | 0.38 |
| Hepatobiliary disease | 128/848 (15.0)  | 61/451 (13.5) | 67/279 (16.8) | 0.68<sup>b</sup> | 0.47–0.99 | 0.046 |
| Skin/soft tissue    | 34/174 (19.5)    | 26/123 (21.1) | 8/51 (15.6) | 1.63<sup>b</sup> | 0.72–3.71 | 0.23 |
| **Sensitivity analysis** |                |           |      |      |
| (a) population which include the patients who met the exclusion criteria | 2859/11699 (24.4) | 1759/7218 (24.3) | 1100/4481 (24.5) | 0.9<sup>c</sup> | 0.84–0.97 | 0.008 |
| (b) ICD-9 codes from the previous study supplemented with the corresponding ICD-10 codes | 3204/13816 (23.1) | 1965/8484 (23.2) | 1239/5368 (23.0) | 0.92<sup>c</sup> | 0.86–0.98 | 0.02 |
| (c) Hospital with ICUs and HDUs | 1997/8311 (24.0) | 1395/5798 (24.0) | 602/2513 (23.9) | 0.86<sup>c</sup> | 0.78–0.95 | 0.002 |
| (d) 14-day mortality | 1800/10818 (16.6) | 1068/6584 (16.2) | 732/4234 (17.2) | 0.88<sup>c</sup> | 0.82–0.95 | 0.002 |
| (e) In-hospital mortality | 3308/10818 (30.5) | 2041/6584 (31.0) | 1267/4234 (29.9) | 0.89<sup>c</sup> | 0.83–0.96 | 0.005 |
| (f) changing the definition of exposure and comparison<sup>†</sup> |                |           |      |      |
| (1)                | 892/3539 (25.2)  | 167/671 (24.8) | 725/2868 (25.2) | 1.02<sup>a</sup> | 0.86–1.21 | 0.78 |
| (2)                | 589/2407 (24.4)  | 167/671 (24.8) | 422/1736 (24.3) | 0.86<sup>a</sup> | 0.71–1.04 | 0.14 |
| (3)                | 1147/4604 (24.9) | 725/2868 (25.2) | 422/1736 (24.3) | 0.88<sup>a</sup> | 0.77–1.00 | 0.052 |
| (g) propensity score-matched population | 1598/6788 (23.5) | 746/3394 (21.9) | 852/3394 (25.1) | 0.8<sup>a</sup> | 0.82–0.97 | 0.013 |
| (1) caliper width of 0.1 of SD | 1765/7432 (23.7) | 840/3716 (22.6) | 925/3716 (24.8) | 0.91 | 0.84–0.99 | 0.03 |

<sup>CI</sup> confidence interval, <sup>SD</sup> standard deviation, <sup>CRRT</sup> continuous renal replacement therapy, <sup>PMX-DHP</sup> polymyxin B immobilized fiber column direct hemoperfusion, <sup>VA-ECMO</sup> venoarterial extracorporeal membrane oxygenation, <sup>IABP</sup> intra-aortic balloon pumping

<sup>†</sup> P for interaction

<sup>a</sup> Adjusted for sex, Charlson comorbidity index, admission year, ambulance use, teaching hospitals, emergency charge, hospital beds, patients from nursing home, source of infection, drainage, surgery, mechanical ventilation, CRRT, PMX-DHP, VA-ECMO, use of two or more catecholamines, transfusions (red blood cell, platelet, fresh frozen plasma), albumin, globulin, sedatives drugs, opioids drugs, recombinant thrombomodulin, antithrombin III, and hydrocortisone

<sup>b</sup> Adjusted for age and the same covariates as <sup>a</sup>. Among these, procedure and source of infection that fell into each subgroup were excluded from the covariates

<sup>c</sup> Adjusted for age and the same covariates as <sup>a</sup>

<sup>†</sup> (1) ICU management fee 1 vs. ICU management fee 3 and "Emergency and critical care unit management fee 2", (2) ICU management fee 1 vs. "Emergency and critical care unit management fee 1", (3) ICU management fee 3 and "Emergency and critical care unit management fee 2" vs. "Emergency and critical care unit management fee 1"

<sup>‡</sup> The "number of events" indicates deaths within 30 days of hospitalization, except for "14-days mortality," which indicates deaths within 14 days
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Reference
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