**Supplementary Table 1**

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| **Pneumonia severity index (PSI) classification** |
| **Class I: (patients who do not meet any of the following criteria)** |
| Patients older than 50 years old.Patients with a history of tumor disease, congestive heart failure, cerebrovascular disease, kidney disease or liver disease.Patients with altered conscious state, pulse rate >125 beats/min, breathing ≥30 beats/min, systolic blood pressure <90 mmHg, or body temperature ≤35 ℃ or ≥40 ℃. |
| **Class II-V needs to be scored according to the PSI scoring table** |
| **Items**  | **Score** |
| Age Complication Tumor Hepatopathy Congestive heart failure Cerebral vascular disease Nephropathy Physical examinationChange of mental state Respiratory rate ≥ 30 times / min Systolic pressure < 90mmHg Body temperature ≤35 ℃ or ≥40 ℃ pulse rate ≥125 beats/min Inspection indicatorArterial pH < 7.35 Blood urea nitrogen ≥ 11mmol / L Serum sodium < 130 mmol / L Blood glucose ≥ 14mmol / L HCT < 30% PO2 < 60 mmHg or oxygen saturation < 90% Pleural effusion  | male=age; Female=age-10 +30+20+10+10+10+20+20+20+15+10+30+20+10+10+10+10+10 |
| **Risk classification** | **Score**  | **Mortality**  |
| **I** | No scoring required | 0.1% |
| **II** | ≦70 | 0.6% |
| **III** | 71-90 | 0.9% |
| **IV** | 91-130 | 9.3% |
| **V** | >130 | 27% |

**Supplementary Table 2**

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| **APACHE II score table** |
| 1. Age
 | ≤44□0 45-54□2 55-64□3 65-74□≥5 | A score |  |
| 1. Severe organ system dysfunction or immune damage
 | After elective surgery or non-operative □ 2Emergency operation or without operation □ 5None of the above □ 0 | B score |  |
| GCS score | 6 | 5 | 4 | 3 | 2 | 1 |
| 1.Eye Opening Response |  |  | spontaneous | to speech | to pain | none |
| 2.Verbal Response |  | oriented | confused | inappropriate words | unintelligible sounds | none |
| 3.Motor Response | obey commands | localize | withdrawal | decorticate flexion | decerebrate extension | no response |
| GCS score=1+2+3 |  | C score=15-GCS |  |
| D. Physiological index | Score | D score |
| +4 | +3 | +2 | +1 | 0 | +1 | +2 | +3 | +4 |  |
| 1. Axillary body temperature (℃)
 | ≥41 | 39-40.9 |  | 38.5-38.9 | 36-38.4 | 34-35.9 | 32-33.9 | 30-31.9 | ≤29.9 |  |
| 1. Mean blood pressure (mmHg)
 | ≥160 | 130-159 | 110-129 |  | 70-109 |  | 50-69 |  | ≤49 |  |
| 1. Heart rate (beats/min)
 | ≥180 | 140-179 | 110-139 |  | 70-109 |  | 55-69 | 40-54 | ≤39 |  |
| 1. Respiratory frequency (times/min)
 | ≥50 | 35-49 |  | 25-34 | 12-24 | 10-11 | 6-9 |  | ≤5 |  |
| 1. PaO2（mmHg）(FiO2<50%) A-aDO2 (FiO2>50%)
 | ≥500 | 350-499 | 200-349 |  | ＞70＜200 | 61-70 |  | 55-60 | ＜55 |  |
| 1. Arterial blood PH

Serum HCO3 (mmol/L)(For use without blood gas) | ≥7.7≥52 | 7.6-7.6941-51.9 |  | 7.5-7.5932-40.9 | 7.33-7.4923-31.9 |  | 7.25-7.3218-21.9 | 7.15-7.2415-17.9 | ＜7.15＜15 |  |
| 1. Serum sodium (mmol/L)
 | ≥180 | 160-179 | 155-159 | 150-154 | 130-149 |  | 120-129 | 111-119 | ≤110 |  |
| 1. Serum potassium (mmol/L)
 | ≥7 | 6-6.9 |  | 5.5-5.9 | 3.5-5.4 | 3-3.4 | 2.5-2.9 |  | ＜2.5 |  |
| 1. Serum creatinine (mg/dL)
 | ≥3.5 | 2-3.4 | 1.5-1.9 |  | 0.6-1.4 |  | ＜0.6 |  |  |  |
| 1. Hematocrit (%)
 | ≥60 |  | 50-59.9 | 46-49.9 | 30-45.9 |  | 20-29.9 |  | ＜20 |  |
| 1. WBC (\*1000)
 | ≥40 |  | 20-39.9 | 15-19.9 | 3-14.9 |  | 1-2.9 |  | ＜1 |  |
| D score |  |
| APACHE Ⅱ score = A + B + C + D |