**Table S1. Antimicrobial therapy and 90-day mortality in 71 patients with bloodstream infection caused by carbapenem-resistant *Klebsiella pneumoniae***

|  |  |  |  |
| --- | --- | --- | --- |
| **Definitive antimicrobial therapy** | **No. of deaths**  **/Total (%)** | **Hazard Ratio**  **(95% CI)** | ***P* value** |
| **Type of therapy** |  |  |  |
| High-dose extended/continuous infusion  of carbapenem monotherapy | 11/31 (35.5) | Ref | - |
| Amikacin + carbapenem | 4/9 (44.4) | 1.20 (0.38, 3.80) | 0.76 |
| Fosfomycin + carbapenem | 4/22 (18.2) | 0.51 (0.16, 1.60) | 0.25 |
| Polymyxin B + carbapenem | 2/9 (22.2) | 0.74 (0.16, 3.40) | 0.70 |
| **Polymyxin B/fosfomycin based therapy vs. other therapies** | | | |
| Polymyxin B/fosfomycin + carbapenem | 6/31 (19.4) | Ref | - |
| Amikacin + carbapenem | 4/9 (44.4) | 2.11 (0.59, 7.58) | 0.25 |
| Carbapenem monotherapy | 11/31 (35.5) | 1.76 (0.65, 4.79) | 0.26 |
| **Combination therapy vs. carbapenem monotherapy** | | | |
| Combination therapy | 10/40 (25.0) | Ref | - |
| Carbapenem monotherapy | 11/31 (35.5) | 1.39 (0.59, 3.29) | 0.45 |

**Table S2. Predictive performance of the single predictors and the combined models for predicting 90-day mortality**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Predictive model** | **AUC (95% CI)** | **Sensitivity** | **Specificity** | **Accuracy** | **PPV** | **NPV** |
| **Single predictors** | | | | | | |
| Prior hospitalization within 6 months ① | 0.64 (0.55, 0.73) | 0.67 | 0.61 | 0.62 | 0.33 | 0.86 |
| Intra-abdominal source ② | 0.68 (0.59, 0.77) | 0.67 | 0.88 | 0.79 | 0.53 | 0.85 |
| Premature ③ | 0.58 (0.49, 0.68) | 0.71 | 0.45 | 0.65 | 0.31 | 0.82 |
| Carbapenem-resistant isolate ④ | 0.60 (0.50, 0.69) | 0.64 | 0.56 | 0.58 | 0.30 | 0.84 |
| C-reactive protein (stratified) ⑤ | 0.72 (0.62, 0.82) | 0.58 | 0.82 | 0.77 | 0.49 | 0.87 |
| Albumin (stratified) ⑥ | 0.66 (0.55, 0.76) | 0.58 | 0.74 | 0.71 | 0.40 | 0.86 |
| Lactate (stratified) ⑦ | 0.61 (0.52, 0.71) | 0.48 | 0.74 | 0.68 | 0.36 | 0.83 |
| SOFA score ⑧ | 0.80 (0.71, 0.89) | 0.84 | 0.68 | 0.72 | 0.43 | 0.94 |
| **Adding predictors to the SOFA score** | | | | | | |
| SOFA + Prior hospitalization ① | **0.86 (0.79, 0.93)** | 0.78 | 0.80 | 0.79 | 0.52 | 0.92 |
| SOFA + Intra-abdominal source ② | **0.84 (0.76, 0.93)** | 0.59 | 0.96 | 0.88 | 0.79 | 0.89 |
| SOFA + Premature ③ | 0.80 (0.71, 0.89) | 0.84 | 0.68 | 0.72 | 0.43 | 0.94 |
| SOFA + Carbapenem-resistant isolate ④ | 0.81 (0.73, 0.90) | 0.81 | 0.76 | 0.77 | 0.49 | 0.93 |
| SOFA + C-reactive protein ⑤ | **0.84 (0.76, 0.92)** | 0.75 | 0.82 | 0.81 | 0.55 | 0.92 |
| SOFA + Albumin ⑥ | **0.83 (0.75, 0.91)** | 0.78 | 0.82 | 0.81 | 0.56 | 0.93 |
| SOFA + Lactate ⑦ | 0.81 (0.72, 0.90) | 0.84 | 0.64 | 0.68 | 0.40 | 0.94 |
| SOFA + ①② | **0.89 (0.82, 0.96)** | 0.86 | 0.84 | 0.87 | 0.64 | 0.95 |
| SOFA + ①⑤ | 0.88 (0.81, 0.95) | 0.84 | 0.80 | 0.81 | 0.54 | 0.95 |
| SOFA + ①⑥ | 0.89 (0.83, 0.95) | 0.75 | 0.85 | 0.77 | 0.60 | 0.92 |
| SOFA + ②⑤ | 0.86 (0.78, 0.93) | 0.78 | 0.81 | 0.80 | 0.53 | 0.93 |
| SOFA + ②⑥ | 0.86 (0.78, 0.93) | 0.88 | 0.73 | 0.77 | 0.48 | 0.95 |
| SOFA + ⑤⑥ | **0.86 (0.79, 0.93)** | 0.94 | 0.65 | 0.71 | 0.43 | 0.97 |
| SOFA + ①②⑤ | 0.89 (0.83, 0.96) | 0.88 | 0.85 | 0.86 | 0.62 | 0.96 |
| SOFA + ①②⑥ | 0.90 (0.85, 0.96) | 0.81 | 0.89 | 0.88 | 0.68 | 0.94 |
| SOFA + ①⑤⑥ | 0.90 (0.84, 0.96) | 0.81 | 0.89 | 0.87 | 0.67 | 0.94 |
| SOFA + ②⑤⑥ | 0.87 (0.80, 0.95) | 0.91 | 0.70 | 0.74 | 0.46 | 0.96 |
| SOFA + ①②⑤⑥ | 0.91 (0.85, 0.96) | 0.88 | 0.88 | 0.88 | 0.67 | 0.96 |

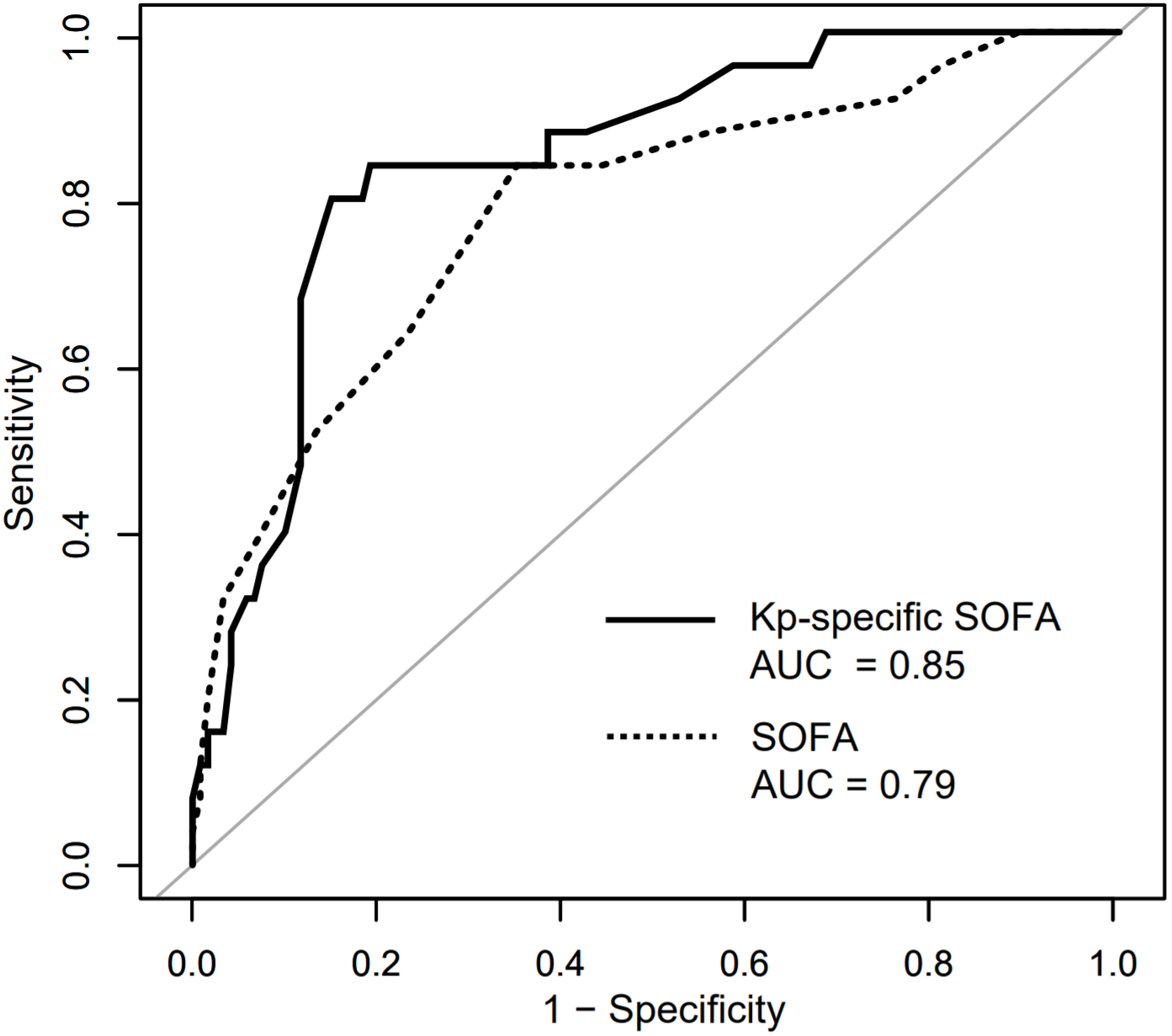
*AUC* area under the curve, *PPV* positive predictive value, *NPV* negative predictive value, *SOFA* sequential organ failure assessment.

**Table S3. The added prognostic value of the predictive models as determined by the integrated discrimination improvement index**

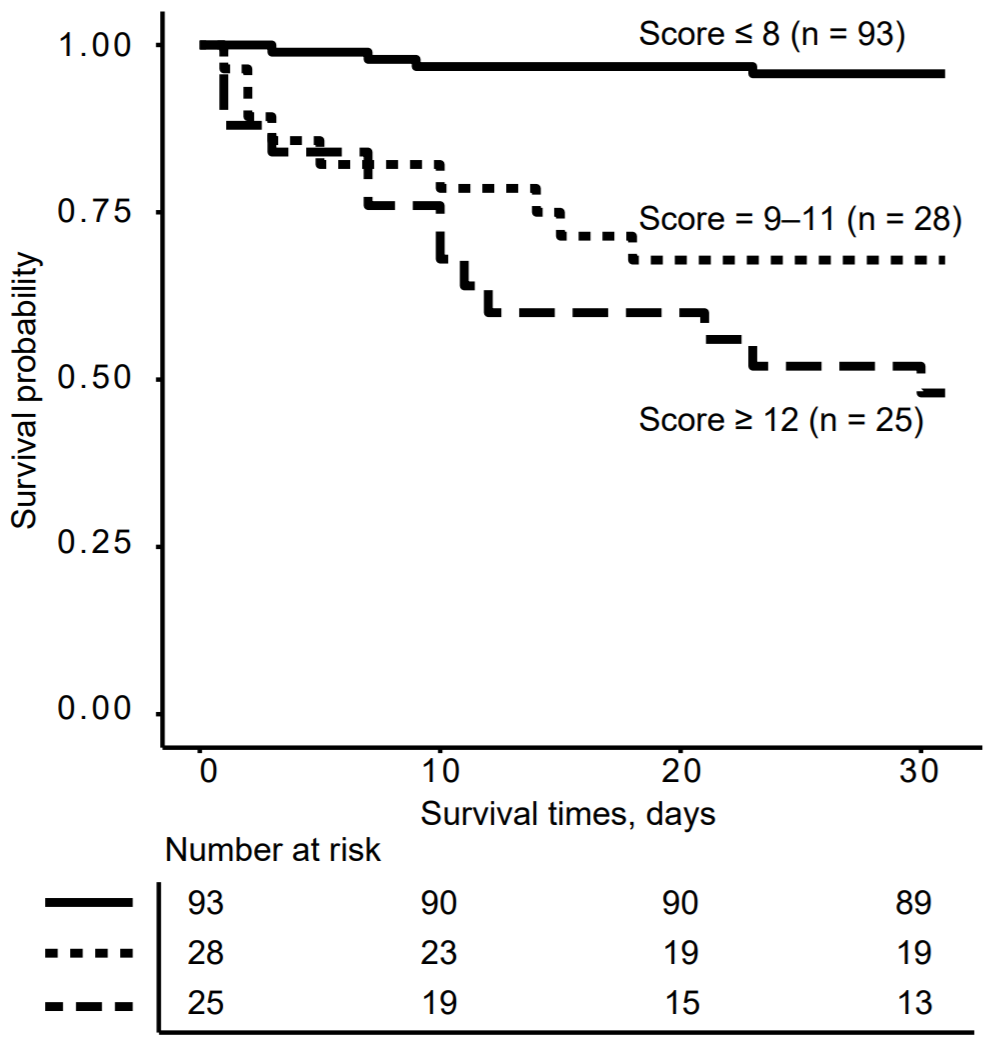
|  |  |  |  |
| --- | --- | --- | --- |
| **Predictive model** | **IDI (%)a** | **95% CI** | ***P* value** |
| SOFA + Prior hospitalization ① + C-reactive protein ② | -3.89 | (10.68, 2.89) | 0.26 |
| SOFA + Prior hospitalization ① + Albumin ③ | -2.91 | (-10.17, 4.36) | 0.43 |
| SOFA + Intra-abdominal source ④ + C-reactive protein ② | -5.72 | (-11.57, 0.13) | 0.55 |
| SOFA + Intra-abdominal source ④ + Albumin ③ | -4.77 | (-11.25, 1.71) | 0.15 |
| SOFA + C-reactive protein ② + Albumin ③ | -7.51 | (-16.38, 1.35) | 0.10 |
| SOFA + ①②④ | 1.83 | (-1.27, 4.93) | 0.24 |
| SOFA + ①③④ | 2.10 | (-1.34, 5.54) | 0.23 |
| SOFA + ①②③④ | 3.84 | (-0.39, 8.08) | 0.23 |

*IDI* integrated discrimination improvement

aCompared with the combined risk model of prior hospitalization within six months, intra-abdominal source of infection, and the SOFA score.



**Fig. S1.** **Receiver operating characteristic curves of the original SOFA score and the Kp-specific SOFA score for predicting 30-day mortality.**



**Fig. S2.** **Thirty-day survival probabilities at three risk categories (score ≤ 8, 9–11 and ≥ 12) after the onset of *Klebsiella pneumoniae* bloodstream infection in children estimated by the Kaplan-Meier analysis (log-rank test, P < 0.01).**