

Latar belakang: Sistem penilaian tingkat keparahan (*Severity scoring systems*) mengintegrasikan data klinis pasien untuk memperkirakan probabilitas dari mortalitas, yang dapat digunakan untuk memfasilitasi penggunaan sumber daya ataupun untuk peningkatan kualitas maupun untuk stratifikasi pasien dalam kepentingan penelitian klinis. Saat ini di Indonesia sendiri belum adanya sistem skor dalam memprediksi mortalitas di ICU berdasarkan populasi yang ada disini. Identifikasi skor mortalitas pasien ICU di RSUP Dr. Sardjito dengan populasi pasien tahun 2019 telah dilakukan sebelumnya. Dimana didapatkan hasil penggunaan obat *support*, gangguan neurologis, gagal nafas, gagal ginjal dan terapi transfusi darah merupakan faktor-faktor prediktif kematian di ICU RSUP Dr. Sardjito.

Tujuan: Penelitian ini bertujuan untuk mengetahui perbandingan akurasi antara model skor ICU RSUP Dr. Sardjito yang saat ini sedang dikembangkan dengan skor SAPS II dalam menilai mortalitas di ICU RSUP Dr. Sardjito.

Metode: Penelitian ini menggunakan rancangan penelitian kohort retrospektif observasional. Jumlah sampel yang diambil merupakan pasien ICU dari 1 Januari - 31 Desember 2020. Masing-masing skor akan dilakukan penilaian kemampuan diskriminasi dan kalibrasi. Kemampuan diskriminasi dievaluasi dengan kurva *Receiver Operating Characteristics* (ROC). *Area Under The Curve* (AUC) dengan nilai $> 0,7$ dianggap *acceptable* dan nilai $> 0,8$ adalah baik. Kalibrasi menggunakan tes kesesuaian/kecocokan (*goodness of fit test*) yaitu uji Hosmer-Lemeshow. Skor dikatakan mempunyai kalibrasi yang baik apabila nilai $p > 0,05$ pada uji Hosmer-Lemeshow.

Hasil: Telah dilakukan penelitian pada pasien ICU RSUP Dr. Sardjito pada tahun 2020, sebanyak 671 pasien. Hasil AUC skor SAPS II sebesar 84% dan model skor ICU RSUP Dr. Sardjito 76,5%. Selisih AUC antara kedua metode sebesar 0,075 menunjukkan perbedaan yang bermakna $p=0,001$. Hasil uji kalibrasi dengan Uji Hosmer Lemeshow pada SAPS II didapatkan nilai p 0.081, sedangkan pada model skor ICU RSUP Dr. Sardjito didapatkan nilai p 0.018. Berdasarkan metode Youden Index didapatkan *cut off* optimal untuk SAPS II sebesar 28,5 serta model skor ICU RSUP Dr. Sardjito sebesar 1,5. Hasil sensitivitas skor SAPS II dengan luaran mortalitas adalah sebesar 80,6% dan nilai spesifisitas 73,7%. Sedangkan hasil sensitivitas model skor ICU RSUP Dr. Sardjito dengan luaran mortalitas adalah sebesar 69,4% dan nilai spesifisitas 77,7%.

Kesimpulan: Kemampuan diskriminasi dan kalibrasi skor SAPS II lebih baik dibandingkan model skor ICU RSUP Dr. Sardjito dalam memprediksi mortalitas di ICU RSUP Dr. Sardjito.

Kata kunci: Model Skor ICU RSUP Dr Sardjito, SAPS II, Mortalitas

ABSTRACT

Background: Severity scoring systems integrate patient clinical data to estimate the probability of mortality, which can be used to facilitate resource use or for quality improvement or to stratify patients for clinical research purposes. Currently in Indonesia, there is no scoring system in predicting mortality in the ICU based population here. The identification of mortality scores for ICU patients at Dr. Sardjito General Hospital with the patient population in 2019 has been carried out previously. Where the results obtained are the use of support drugs, neurological disorders, respiratory failure, kidney failure and blood transfusion therapy are predictive factors of death in the ICU Dr. Sardjito General Hospital.

Objective: This study aims to compare the accuracy between the ICU scoring model of Dr. Sardjito General Hospital which is currently being developed and the SAPS II score in assessing mortality in the ICU at Dr. Sardjito General Hospital.

Method: This study used observational retrospective cohort study design. The number of samples taken were ICU patients from 1 January - 31 December 2020. Each score was assessed for the ability to discriminate and calibrate. Discrimination ability was evaluated by Receiver Operating Characteristics (ROC) curves. Area Under the Curve (AUC) with value of $> 0,7$ was considered acceptable and value of $> 0,8$ was good. Calibration was done with a suitability test (goodness of fit test), namely the Hosmer–Lemeshow test. The score was said to have a good calibration if the p had value of > 0.05 on the Hosmer-Lemeshow test.

Results: The study has been conducted on ICU patients at Dr. Sardjito General Hospital in 2020, there were 671 patients. The AUC results of the SAPS II score were 84% and the ICU scoring model of Dr. Sardjito General Hospital were 76.5%. The AUC difference between the two methods was 0.075 indicating a significant difference $p=0.001$. The results of the calibration test with the Hosmer Lemeshow Test on SAPS II obtained a p value of 0.081, while in the ICU scoring model of Dr. Sardjito General Hospital obtained a p value of 0.018. Based on the Youden Index method, the optimal cut off for SAPS II was 28.5 and ICU scoring model of Dr. Sardjito General Hospital was 1.5. The result of sensitivity of the SAPS II score was 80.6% and the specificity value was 73.7%. While the results of sensitivity of the ICU scoring model of Dr. Sardjito General Hospital was 69.4% and the specificity value was 77.7%.

Conclusion: The ability of discrimination and calibration of the SAPS II score is better than the ICU scoring model of Dr. Sardjito General Hospital in predicting mortality in ICU Dr. Sardjito General Hospital.

Keywords: ICU scoring model of Dr. Sardjito General Hospital, SAPS II, Mortality