

## INTISARI

### Skor Prediksi Kematian Meningitis Tuberkulosis Anak

Umi Rakhmawati

**Latar belakang:** Meningitis tuberkulosis (MTB) anak menjadi komplikasi TB ekstrapulmo yang berat dengan 19% mortalitas. Identifikasi awal anak dengan MTB merupakan hal yang penting untuk mengoptimalkan tata laksana dan menyampaikan prognosis pasien.

**Tujuan :** Mengetahui prediktor kematian serta skor kematian MTB anak.

**Metode :** Studi kasus kontrol dilakukan pada anak usia 1bulan-18 tahun dengan MTB di RSUP Dr. Sardjito, RSUD Banyumas, RSUD Sleman dan RS Akademik UGM dalam rentang 1 Januari 2018 - 31 Desember 2023. Data dari rekam medis. Variabel prediktor kematian dinilai saat admisi rumah sakit dan dihitung nilai *likelihood ratio* (LR) positif dan negatif. Variabel diproses menjadi suatu skor dengan metode Spiegelhalter Knill-Jones. *Area Under the Curve for Receiver Operating Characteristic* (AUC-ROC) digunakan untuk menentukan nilai *cut-off* dari total skor. Validasi internal dilakukan dengan menilai sensitivitas, spesifitas, *likelihood ratio* positif, negatif dan akurasi.

**Hasil:** Total 37 pasien dengan 14 (37,8%) pasien meninggal dunia. Kurva ROC dari sistem skor ini memiliki nilai AUC 0,78 (IK 95% 0,608 – 0,948), yang menunjukkan nilai akurasi cukup. Skor  $\geq -8,5$  mempunyai sensitivitas 64% dan spesifitas 91%. Status gizi, kesadaran dan komorbiditas secara signifikan berkaitan dengan kematian pasien MTB. Nilai duga positif dan nilai duga negatif adalah 81% dan 82%. Nilai *likelihood ratio* positif dan negatif adalah 7,39 dan 0,39 serta akurasi 81%.

**Simpulan:** Status gizi, kesadaran dan komorbiditas secara signifikan berkaitan dengan kematian pada pasien MTB. Nilai *cut-off*  $\geq -8,5$  dapat dianggap sebagai titik acuan yang baik untuk mengimplementasikan skor prediksi kematian.

Kata kunci: meningitis tuberkulosis, luaran terapi, prediktor, kematian, skor

**ABSTRACT**  
**Mortality Prediction Score**  
**In Childhood Tuberculosis Meningitis**

Umi Rakhmawati

**Background:** Pediatric tuberculous meningitis (TBM) is a severe complication of extrapulmonary TBM with 19% mortality. Early identification of children with TBM is important.

**Objective:** Determining the predictors of mortality and mortality score of pediatric tuberculous meningitis.

**Methods :** A case control study was conducted on children aged 1 month-18 years with TBM at Dr. Sardjito General Hospital, RSUD Banyumas, RSUD Sleman and Akademik UGM Hospital between January 1, 2018 until December 31, 2023. Data were collected from medical records. Patients with incomplete data were excluded. Variables predictive of death were assessed at hospital admission and positive and negative likelihood ratio (LR) values were calculated. Variables were organized into a score using the Spiegelhalter Knill-Jones method. Area Under the Curve for Receiver Operating Characteristic (AUC-ROC) was used to determine the cut-off value of the total score. Internal validation was performed by assessing sensitivity, specificity, positive, negative likelihood ratio and accuracy.

**Results:** Total 37 patients were 14 (37.9%) patients died during hospitalization. The ROC curve of this scoring system had an AUC value of 0.78 (95% CI 0.608 – 0.948), indicating enough accuracy. Scores  $\geq -8.5$  had a sensitivity of 64.0% and specificity of 91%. Nutritional status, awareness and comorbidities were significantly associated with mortality in TBM patients.

**Conclusion:** Nutritional status, awareness and comorbidities are significantly associated with mortality in TBM patients. The results suggest that a cut-off  $\geq -8.5$  can be considered as a good reference point for implementing a mortality prediction score, as it shows good sensitivity and specificity.

**Keywords:** tuberculous meningitis, outcomes, predictors, mortality, score