INTISARI

Latar Belakang. Diabetes melitus tipe 2 (DMT2) adalah penyakit metabolik kronis yang ditandai dengan hiperglikemia akibat inflamasi sel-β pankreas dan resistensi insulin. Ketidakstabilan kadar glukosa meningkatkan risiko komplikasi, termasuk ulkus diabetikum dan penurunan fungsi imun yang menyebabkan pasien rentan terhadap infeksi. Komorbiditas pada pasien DMT2 dapat memperpanjang durasi rawat inap. Prokalsitonin merupakan penanda biologis yang digunakan untuk mendeteksi infeksi bakteri. Studi-studi sebelumnya menunjukkan potensi prokalsitonin dalam memprediksi infeksi dan luaran klinis.

Tujuan. Mengetahui potensi kadar prokalsitonin sebagai prediktor durasi rawat inap pasien DMT2 dengan komplikasi ulkus diabetikum.

Metode. Penelitian menuggunakan desain kohort retrospektif. Populasi adalah pasien ulkus diabetikum rawat inap yang berasal dari data sekunder berupa registri rekam medis di RSUP Dr. Sardjito pada periode Januari 2018–Desember 2023. Variabel independen adalah kadar prokalsitonin dan variabel dependen adalah durasi rawat inap. Analisis bivariat Chi Square dan Fisher's Exact bertujuan untuk menentukan kadar prokalsitonin sebagai prediktor durasi masa hosptialisasi pasien.

Hasil. *Cut-off point* optimal kadar prokalsitonin terhadap durasi rawat inap adalah 0,21 ng/mL dengan nilai AUC = 0,603, sensitivitas 70,69%, dan spesifisitas 50,00%. Pasien dengan kadar prokalsitonin ≥ 0,21 ng/mL memiliki peluang durasi rawat inap lebih lama (≥ 13 hari) (p = 0,035; OR = 2,41; 95% CI = 1,05–5,52). Pasien usia ≥ 60 tahun menunjukkan peluang lebih rendah untuk mengalami kenaikan kadar prokalsitonin ≥ 0,21 ng/mL dibandingkan pasien usia < 60 tahun (OR = 0,415; CI 95% = 0,181–0,949; p = 0,035). Sedangkan pasien dengan infeksi saluran kemih (ISK) menunjukkan peluang risiko lebih besar mengalami kenaikan kadar prokalsitonin ≥ 0,21 ng/mL dibandingkan pasien non-ISK (OR = 3,63; CI 95% = 1,24–10,6; p = 0,015).

Kesimpulan. Kadar prokalsitonin dapat digunakan sebagai prediktor durasi rawat inap lebih lama pada populasi pasien DMT2 dengan ulkus diabetikum.

Kata Kunci: Diabetes melitus tipe 2 (DMT2), infeksi, durasi rawat inap, prokalsitonin, ulkus diabetikum.

ABSTRACT

Background. Type 2 diabetes mellitus (T2DM) is a chronic metabolic disease characterized by elevated blood glucose levels due to inflamed β cell of pancreas and insulin resistance. Instability in blood glucose regulation increases the risk of complications, including diabetic ulcers and impaired immune function, causing patients more susceptible to infections. The presence of comorbidities may prolong hospital stay. Procalcitonin is an inflammatory biomarker used to detect bacterial infections. Several studies have demonstrated the potential role of procalcitonin as a predictor of infection and clinical outcomes in infectious diseases.

Objective. This study is aimed to analyze the potential of procalcitonin levels as a predictor for length of stay in DMT2 with foot ulcer patient.

Method. This study used an observational retrospective cohort design. The study population consisted of inpatients with diabetic foot ulcer obtained from secondary data in the medical record registry of RSUP Dr. Sardjito from January 2018 - December 2023. The independent variable was procalcitonin level, while the dependent variable was the length of stay. Chi-square test and Fisher's exact test were performed to determine procalcitonin level as a predictor for length of stay.

Result. The optimal cutoff point of procalcitonin for predicting hospital length of stay was 0.21 ng/mL, with an AUC of 0.603, sensitivity 70.69%, and specificity 50.00%. Procalcitonin level ≥ 0.21 ng/mL had higher odds of prolonged hospital length of stay (≥ 13 days) (p = 0.035; OR = 2.41; 95% CI = 1.05–5.52). Patients aged ≥ 60 years had lower odds of elevated procalcitonin level ≥ 0.21 ng/mL compared to patients aged < 60 years (OR = 0.415; 95% CI = 0.181–0.949; p = 0.035). However, patients with urinary tract infection (UTI) had higher odds of elevated procalcitonin level ≥ 0.21 ng/mL compared to non-UTI patients (OR = 3.63; 95% CI = 1.24–10.6; p = 0.015).

Conclusion. Procalcitonin may be used as a potential predictor of prolonged hospital length of stay in patients with type 2 diabetes mellitus (T2DM) with diabetic foot ulcer.

Keywords: Type 2 diabetes mellitus (T2DM), diabetic ulcer, infection, length of stay, procalcitonin