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Kadar Procalsitonin sebagai Prediktor Infeksi Sekunder pada Pasien COVID-19 Rawat Inap
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INTISARI

Latar Belakang. Penyakit menular *Coronavirus Disease*-2019 (COVID-19) merupakan wabah sekaligus ancaman global yang serius. Tidak sedikit pasien COVID-19 yang mengalami keparahan baik karena infeksi sekunder maupun hal lainnya. Procalsitonin (PCT) merupakan salah satu penanda adanya infeksi bakteri (sistemik). Sampai sekarang masih sedikit bukti apakah peningkatan PCT ini dapat menjadi prediktor kejadian infeksi sekunder pada pasien COVID-19 rawat inap.
Tujuan. Tujuan penelitian ini adalah menganalisis kadar procalsitonin sebagai prediktor kejadian infeksi sekunder pada pasien COVID-19 rawat inap.
Metode. Penelitian ini merupakan studi kohort retrospektif menggunakan data rekam medis pasien COVID-19 rawat inap derajat berat dan kritis di RSUP Dr. Sardjito Yogyakarta periode Mei – Oktober 2021. Data yang memenuhi kriteria inklusi-eksklusi dianalisis secara univariat, bivariat (uji *chi square*), dan dilanjutkan secara multivariat (uji regresi logistik berganda). *Cut-off* procalsitonin pada penelitian ini ditentukan dengan kurva ROC sedangkan infeksi sekunder lebih lanjut dilihat berdasarkan hasil kultur darah dan/atau urin.
Hasil. Analisis univariat menunjukkan median kadar procalsitonin pada penelitian adalah 0.400 (0.02 – 200) ng/mL dengan nilai kadar PCT pada pasien derajat kritis dua kali lebih tinggi dibandingkan pasien derajat berat (*p-value* 0.039). Sedangkan kejadian infeksi sekunder sebesar 42.1%. Analisis bivariat menunjukkan tidak terdapat hubungan bermakna antara procalsitonin dan infeksi sekunder, baik berdasarkan kultur darah (*RR* = 1.143; 95% CI = 0.938 – 1.393; *p-value* = 0.233) maupun kultur urin (*RR* = 1.137; 95% CI = 1.137-1.323; *p-value* = 0.090), kecuali analisis dilakukan pada pasien derajat berat berdasarkan kultur urin (*p-value 0.025)*. Analisis multivariat menunjukkan hanya procalsitonin yang masuk ke dalam model pada analisis berdasarkan kultur urin (*Exp* (B) = 1.959; 95% CI = 0.968 – 3.967; *p-value* = 0.062).
Kesimpulan. Procalsitonin tidak dapat dijadikan prediktor kejadian infeksi sekunder pada pasien COVID-19 rawat inap derajat berat-kritis di RSUP Dr.Sardjito.
Kata Kunci. Procalsitonin, COVID-19, SARS-CoV-2, Infeksi Sekunder, Studi Cohort Retrospektif.

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ABSTRACT

Background. Infectious Diseases Coronavirus disease-2019 (COVID-19) is a serious global epidemic. There are not a few COVID-19 patients who experience severity either due to secondary infections or other things. Procalcitonin (PCT) is a marker of bacterial (systemic) infection. Until now, there is little evidence whether increased PCT is a predictor of secondary infection in hospitalized COVID-19 patients.
Objective. The aim of this study is to analyze procalcitonin levels as a predictor of secondary infection in hospitalized COVID-19 patients.
Method. This study is a retrospective cohort study using medical records of severe and critical COVID-19 patients treated at RSUD Dr. Sardjito Yogyakarta for the period May – October 2021. Data that met the inclusion-exclusion criteria were analyzed using univariate, bivariate (chi squared test), and followed by a multivariate test (multiple logistic regression test). Discontinuation of procalcitonin in this study was determined by the ROC curve while further secondary infection was indicated on the basis of blood and/or urine culture results.
Results. Univariate analysis showed that the median procalcitonin level in this study was 0.400 (0.02 – 200) ng/mL with PCT levels in critically ill patients two times higher than in severe patients (p-value 0.039). While the incidence of secondary infection was 42.1%. Bivariate analysis showed that there was no significant relationship between procalcitonin and secondary infection, either based on blood culture (RR = 1.143; 95% CI = 0.938 – 1.393; p-value = 0.233) or urine culture (RR = 1.137; 95% CI = 1.137 -1.323; p-value = 0.090), unless the analysis was performed on patients with severe degrees based on urine culture (p-value 0.025). Multivariate analysis showed only procalcitonin entered into the model in analysis based on urine culture (Exp(B) = 1.959; 95% CI = 0.968 – 3.967; p-value = 0.062).
Conclusion. Procalcitonin cannot be used as a predictor of secondary infection in COVID-19 patients who are hospitalized with a critical-severe degree at RSUP Dr. Sardjito.
Keywords. Procalcitonin, COVID-19, SARS-CoV-2, Secondary Infection, Retrospective Cohort Study.