INTISARI

Latar Belakang: Sejak awal tahun 2020, COVID-19 telah menjadi pandemi hebat hampir di seluruh dunia, termasuk Indonesia. Penyakit ini memiliki tingkat morbiditas dan mortalitas yang cukup tinggi. Teori terkini menyatakan adanya aktivitas dan fungsi trombosit yang terlibat dalam patomekanisme COVID-19. Banyak penelitian di luar negeri yang telah menemukan hubungan indeks trombosit dengan mortalitas pada pasien COVID-19. Sayangnya penelitian di Indonesia masih sangat jarang. Padahal penelitian ini penting untuk dilakukan mengingat indeks trombosit bisa kita dapatkan dari hasil pemeriksaan hematologi rutin yang telah digunakan secara luas dan rutin dalam praktik klinis di Indonesia.

Tujuan: Untuk menganalisis apakah indeks platelet (platelet, plateletcrit, MPV, PDW, dan PLCR) bisa digunakan sebagai prognosis mortalitas pada pasien COVID-19 rawat inap.

Metode: Penelitian ini menggunakan desain penelitian kohort retrospektif yang melibatkan populasi pasien COVID-19 rawat inap derajat berat dan kritis di RSUP Dr. Sardjito, Yogyakarta pada bulan Juni hingga September 2021. Data yang digunakan berupa data sekunder yang diperoleh dari rekam medis, Perbedaan proporsi mortalitas menurut indeks platelet dan variabel pengganggu potensial (usia) dianalisis menggunakan *Chi-Square Test*. Sedangkan analisis multivariat untuk mengetahui keeratan hubungan antar variabel terhadap mortalitas menggunakan *Logistic Regression*.

Hasil: Terdapat 90 subjek yang terlibat dalam penelitian ini, dimana 65 subjek adalah derajat berat dan 25 subjek adalah derajat kritis. Cut-off yang digunakan untuk nilai platelet, plateletcrit, MPV, PDW, dan PLCR adalah 264, 0,2, 10, 12, dan 21. Analisis chi-square menunjukkan adanya perbedaan proporsi mortalitas yang bermakna pada kedua kelompok platelet (p = 0,010) dan MPV (p = 0,010). Sedangkan indeks platelet lainnya seperti plateletcrit, PDW, dan PLCR tidak ditemukan adanya perbedaan proporsi yang bermakna. Analisis multivariat regresi logistik menunjukkan hanya variabel platelet yang signifikan mempengaruhi terjadinya mortalitas secara simultan (p = 0,007 ; RR = 1,041). Pasien COVID-19 dengan nilai platelet <264.000 memilki risiko 1,041 kali lipat untuk kejadian meninggal dibandingkan pasien dengan nilai platelet >264.000.

Kesimpulan: Pada penelitian ini disimpulkan bahwa dari seluruh indeks platelet yang diteliti, hanya platelet count yang bisa digunakan sebagai faktor prognosis mortalitas pada pasien COVID-19.

Kata kunci: COVID-19, indeks trombosit, platelet, plateletcrit, MPV, PDW, PLCR, mortalitas.

ABSTRACT

Background: Since the beginning of 2020, COVID-19 has become a severe pandemic in most parts of the world, including Indonesia. This disease has a high level of morbidity and mortality. Current theories suggest that the activity and function of platelet are involved in the pathomechanism of COVID-19. Many studies abroad have found a relationship between platelet index and mortality in COVID-19 patients. Unfortunately, in Indonesia research on this topic is still rare. Even though this research is important to determine platelet index from the results of routine hematology examinations, which have been extensively and routinely used in clinical practice in Indonesia.

Objective: To analyze whether the platelet index (platelet, plateletcrit, MPV, PDW, and PLCR) can be used as a prognosis for mortality in hospitalized COVID-19 patients.

Methods: This study used a retrospective cohort study design involving a population of severe and critical inpatients with COVID-19 at Dr. Sardjito, Yogyakarta from June to September 2021. The data used is in the form of secondary data obtained from medical records. Differences in the proportion of mortality according to the platelet index and potential confounding variables (age) were analyzed using the Chi-Square Test. While multivariate analysis is to determine the closeness of the relationship between variables on mortality using Logistic Regression.

Results: There were 90 subjects involved in this study, of which 65 subjects were severe and 25 subjects were critical. The cut-off values used for platelet, plateletcrit, MPV, PDW, and PLCR were 264, 0.2, 10, 12, and 21. Chi-square analysis showed that there was a significant difference in the proportion of mortality in the two groups of platelets ($p = 0.010$) and MPV ($p = 0.010$). While other platelet indices such as plateletcrit, PDW, and PLCR were not found to have a significant difference in proportion. Multivariate logistic regression analysis showed that only platelets significantly influenced the occurrence of mortality ($p = 0.007$; RR = 1.041). COVID-19 patients with a platelet count <264.000 have a 1,041-fold risk of death compared to patients with a platelet count >264.000.

Conclusion: In this study, it was concluded that of all the platelet indices studied, only the platelet count could be used as a prognostic factor for mortality in COVID-19 patients.

Keywords: COVID-19, platelet index, platelets, plateletcrit, MPV, PDW, PLCR, mortality.