

ABSTRAK

KORELASI JUMLAH TROMBOSIT DAN INDEKS TROMBOSIT (PDW, MPV, PCT, P-LCR) DENGAN DERAJAT KEPARAHAN PADA PENDERITA INFENSI COVID-19

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Infeksi Virus Covid-19 beberapa waktu yang lalu menyebabkan pandemi dan menjadi masalah kesehatan di dunia, termasuk Indonesia. Penyebab infeksi Covid-19 adalah virus SARS-CoV-2 yang dapat dideteksi dengan *Real Time Reverse-transcriptase Polymerase Chain Reaction* (rRT-PCR). Trombosit berperan dalam peradangan dan patogenesis berbagai kondisi klinis inflamasi yang juga terpengaruh akibat infeksi Covid-19, dapat berubah sesuai derajat keparahan infeksi. Tujuan penelitian ini menganalisis hubungan jumlah trombosit dan indeks trombosit yaitu *Mean Platelet Volume* (MPV), *Platelet Distribution Width* (PDW), *Plateletcrit* (PCT) dan *Platelet – Large Cell Ratio* (P-LCR) dengan derajat keparahan pada penderita infeksi Covid-19. Jenis penelitian merupakan observasional analitik studi dengan rancangan penelitian Cross Sectional. Data jumlah trombosit dan indeks trombosit serta derajat keparahan diperoleh dari rekam medis selama periode Juni sampai dengan Agustus 2021, yaitu 209 penderita infeksi Covid-19 yang dirawat di RSUD Dr. H. Abdul Moeloek Provinsi Lampung. Uji statistik dilakukan dengan uji *Chi Square*, dilanjutkan dengan uji regresi logistik ordinal. Hasil penelitian menunjukkan indeks PDW terdapat hubungan signifikan ($p = 0,011$), *Odds Ratio* ($OR = 2,36$), namun hubungan antara jumlah trombosit, MPV, PCT dan P-LCR dengan derajat keparahan penderita Covid-19 tidak signifikan ($p = 0,212, 0,766, 0,398, 0,128$), produksi sitokin yang berlebihan dan reaktan fase akut akibat respon imun dan adanya inflamasi atas Infeksi Covid-19, sehingga mempengaruhi perkembangan megakariosit, mengakibatkan terjadi perubahan indeks trombosit. Patogenesis infeksi SARS-CoV-2 sangat kompleks dan kemungkinan stadium awal penyakit tidak mempengaruhi semua parameter hematologi.

Kata kunci : Covid-19, Trombosit, Indeks Trombosit, Derajat Keparahan Infeksi Covid-19

ABSTRACT

CORRELATION OF PLATELET COUNT AND PLATELET INDICES (PDW, MPV, PCT, P-LCR) WITH SEVERITY IN PATIENTS COVID-19 INFECTION

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The Covid-19 Virus infection some time ago caused a pandemic and became a health problem in the world, including Indonesia. The cause of Covid-19 infection is the SARS-CoV-2 virus which can be detected by Real Time Reverse-transcriptase Polymerase Chain Reaction (rRT-PCR). Platelets play a role in inflammation and the pathogenesis of various inflammatory clinical conditions which are also affected by Covid-19 infection, which can change according to the severity of the infection. The purpose of this study was to analyze the relationship between platelet count and platelet index, namely Mean Platelet Volume (MPV), Platelet Distribution Width (PDW), Plateletcrit (PCT) and Platelet-Large Cell Ratio (P-LCR) with the degree of severity in patients with Covid-19 infection. This type of research is an analytic observational study with a cross sectional research design. Platelet count and platelet index data as well as the degree of severity were obtained from medical records from June to August 2021, namely 209 patients with Covid-19 infection who were being treated at RSUD Dr. H. Abdul Moeloek Lampung Province. Statistical tests were carried out with the Chi Square test, followed by ordinal logistic regression tests. The results showed that the PDW index had a significant relationship ($p = 0.011$), Odds Ratio (OR = 2.36), but the relationship between platelet count, MPV, PCT and P-LCR with the severity of Covid-19 patients was not significant ($p = 0.212, 0.766, 0.398, 0.128$), excessive production of cytokines and acute phase reactants due to immune response and inflammation of Covid-19 infection, thus affecting the development of megakaryocytes, resulting in changes in the platelet index. The pathogenesis of SARS-CoV-2 infection is very complex and probable. the early stages of the disease do not affect all hematological parameters.

Keywords: Covid-19, Platelets, Platelet Indices, Severity of Covid-19 Infection