Peran Rasio Neutrofil-Limfosit, Monosit-Limfosit, dan Trombosit-Limfosit terhadap Luaran Klinis Pasien Terkonfirmasi COVID-19 di RSUPN dr Cipto Mangunkusumo Jakarta = The Role of Neutrophil-Lymphocyte, Monocyte-Lymphocyte, and Platelet-Lymphocyte Ratios in The Clinical Outcome of Patients Confirmed for COVID-19 at dr. Cipto Mangunkusumo hospital Jakarta

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Abstrak

Coronavirus Disease 2019 (COVID-19) merupakan penyakit multisistemik yang melibatkan kaskade imunologi, inflamasi, dan koagulasi. Biomarker di sirkulasi yang dapat memberikan informasi mengenai kondisi inflamasi dan status imun dapat digunakan dalam mendiagnosis dan menilai prognosis pasien COVID-19. Parameter hematologi rutin, mudah dilakukan, biaya terjangkau dan cepat, sehingga diharapkan dapat memberikan informasi awal sistem imun pasien yang dapat dihubungkan dengan outcome penyakit. Nilai RNL, RML dan RTL dapat mendeteksi dini kecurigaan perburukan kondisi pasien COVID-19. Penelitian ini menggunakan desain nested case-control yang melibatkan 206 data subjek yang terdiri atas 141 subjek luaran baik dan 65 subjek luaran buruk. Dijumpai perbedaan bermakna nilai RNL, RML dan RTL antara kelompok luaran baik dan buruk. Nilai titik potong optimal RNL, RML dan RTL berturut-turut adalah 5,43; 0,46 dan 196,34 untuk mendiskriminasi luaran buruk. Area Under Curve (AUC) untuk RNL adalah 0,825 (0,766-0,884), sensitivitas 76,9%, spesifisitas 73,8%; AUC RML 0,763 (0,692-0,833), sensitivitas 73,8%, spesifisitas 68,1% dan AUC RTL 0,617 (0,528-0,705), sensitivitas 63,1%, spesifisitas 60,3%. Usia >30 tahun (OR=2,59; IK95% 1,34-5,02), adanya komorbid (OR=2,21; IK95% 1,28-3,81), RNL 5,43 (OR=4,60; IK95% 2,07-10,26) dan RML 0,46 (OR=2,09; IK95% 0,93-4,67) berhubungan dengan luaran buruk pasien COVID-19.

.....Coronavirus Disease 2019 (COVID-19) is a multisystemic disease involving immunologic, inflammatory, and coagulation cascades. Biomarkers in circulation which can provide information on inflammatory conditions and immune status can be used in diagnosing and assessing the prognosis of COVID-19 patients. Hematology parameters are routinely performed, easy, affordable and fast, so it can provide preliminary information on the patient's immune system that linked to disease outcomes. NLR, MLR and TLR values can detect early suspicion of worsening conditions of COVID-19 patients. This study used a nested case-control design involving 206 subjects data consisting of 141 subjects with good outcomes and 65 subjects poor outcomes. A significant difference was found in the values of NLR, MLR and TLR between the two groups. The optimal cut-off point values of NLR, MLR and TLR were 5.43; 0.46 and 196.34, respectively, to discriminate against poor outcomes. The Area Under Curve (AUC) for NLR was 0.825 (0.66-0.884), sensitivity 76.9%, specificity 73.8%; MLR was 0.763 (0.692-0.833), sensitivity 73.8%, specificity 68.1% and TLR was 0.617 (0.528-0.705), sensitivity 63.1%, specificity 60.3%. Age >30 years (OR=2.59; 95% CI 1.34-5.02), presence of comorbidities (OR=2.21; 95% CI 1.28-3.81), NLR 5.43 (OR=4.60; 95% CI 2.07-10.26) and MLR 0.46 (OR=2.09; 95% CI 0.93-4.67) were associated with poor outcomes of COVID-19 patients.