

Limfopenia sebagai Prediktor Derajat Keparahan pada Pasien COVID-19 (Studi Kasus di RSUP Dr. Kariadi)

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Latar Belakang :

Limfopenia umum ditemukan pada infeksi COVID-19. Limfosit adalah bagian dari sel darah putih. Sel-sel ini bertanggung jawab untuk produksi antibodi, pembunuhan langsung yang dimediasi sel terhadap orang yang terinfeksi virus, dan pengaturan respons imun. Ketika jumlahnya menurun, sistem kekebalan tubuh terganggu, dan membuatnya rentan terhadap perburukan penyakit dan berkaitan dengan derajat keparahan penyakit. Indonesia membagi derajat keparahan penyakit COVID-19 menjadi derajat tanpa gejala, ringan, sedang, berat, dan kritis.

Objektif :

Mengetahui hubungan limfopenia dengan derajat keparahan penyakit COVID-19 di RSUP Dr. Kariadi.

Metode :

Penelitian *Retrospective Cohort* bagian dari penelitian payung COVID-19. Subyek yang dibutuhkan berjumlah 307 subjek dan data rekam medis diambil secara random sampling dari pasien yang dirawat di RSUP Dr. Kariadi pada bulan Maret 2020 hingga Agustus 2021. Profil demografis, jumlah limfosit absolut, dan penyakit penyerta dicatat. Uji Chi-Square Pearson digunakan untuk melihat hubungan antara limfopenia dan derajat keparahan penyakit. Nilai $P \leq 0,05$ dianggap signifikan secara statistik

Hasil :

Mean usia $51,97 \pm 13,92$ tahun dan 54,4% Laki-laki, pasien Limfopenia didapatkan 156 pasien (50,8%) dan 123 pasien derajat keparahan berat-kritis (40,1%), dengan komorbid terbanyak DM (24,8%) dan Hipertensi (31,6%). Mean (95% CI) ALC untuk masing-masing derajat keparahan penyakit adalah 1855 (1478, 2232) untuk penyakit ringan, 1388 (1297, 1479) untuk penyakit sedang, 939,6 (855, 1023) untuk penyakit berat, dan 729,8 (599,859) untuk penyakit kritis. Terdapat hubungan bermakna antara limfopenia dengan derajat keparahan penyakit ($p=0,00$) serta hubungan antara limfopenia dengan mortalitas ($p=0,00$), serta didapatkan Usia dan Hipertensi berpengaruh terhadap derajat keparahan.

Simpulan :

Hasil kompatibel dengan studi sebelumnya dan limfopenia berhubungan terhadap hasil keluaran derajat keparahan berat-kritis.

Keywords :

COVID-19, Derajat keparahan, Limfopenia, Jumlah Limfosit Absolut, RSUP Dr. Kariadi

Lymphopenia as a Predictor of COVID-19 Disease Severity in Dr. Kariadi Hospital

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Introduction :

Lymphopenia is a common found in COVID-19 infection. Lymphocytes are a part of white blood cells. These cells are responsible for antibody production, direct cell-mediated killing of virus-infected and regulation of the immune response, when the number decreases, immune system is compromised, and making it susceptible to disease severity. Indonesia divided COVID-19 disease severity into asymptomatic, mild, moderate, severe and critical degrees.

Objective :

To identify an association between lymphopenia and COVID-19 disease severity in Dr. Kariadi Hospital.

Methods :

Retrospective Cohort study as a part of bigger research group for COVID-19. The required subjects were 307 subjects and medical record data was taken by random sampling from Covid-19 patients treated at RSUP Dr. Kariadi in March 2020 to August 2021. Demographic profile, absolute lymphocyte count, and comorbidities were recorded. The Pearson Chi-Square test was used to see the relationship between lymphopenia and disease severity. A P value ≤ 0.05 was considered statistically significant

Results :

Mean age was 51.97 ± 13.92 years and 54.4% male, 156 patients had lymphopenia (50.8%) and 123 patients had severe-critical of disease severity (40.1%), with the most common comorbids being Diabetes Mellitus (24.8%) and Hypertension (31.6%). The mean (95% CI) ALC for each disease severity category was 1855 (1478, 2232) for mild disease, 1388 (1297, 1479) for moderate disease, 939.6 (855, 1023) for severe disease, and 729, 8 (599,859) for critical illness. There was a significant relationship between lymphopenia and disease severity ($p=0.00$) and a relationship between lymphopenia and mortality ($p=0.00$), and it was found that age and hypertension had an effect on disease severity.

Conclusion :

Results are compatible with other studies and lymphopenia is a valid marker of disease severity.

Keywords :

COVID-19, Disease severity, Lymphopenia, Absolute Lymphocyte Count, Dr. Kariadi Hospital