



ABSTRACT

Background: With the COVID-19 cases continues to rise, studies regarding the early detection method of COVID-19 severity is still needed. Hemoglobin, Albumin, Lymphocyte, and Platelet (HALP) SCORE is an important marker used to predict several tumors. Each component is included in the complete blood count, which are considered as test that available on every primary healthcare. However, studies regarding HALP SCORE on the identification of COVID-19 severity is still unavailable. Whilst, interleukin-6 has already been known as an early detection to discover the severity of COVID-19 complications.

Objective: This study is to analyze the correlation between HALP score and interleukin-6 on hospitalized COVID-19 patients at RSUD Dr. Sardjito Yogyakarta.

Method: The research design of this study is a retrospective cohort study, involving severe and critical hospitalized COVID-19 patients at RSUD Dr. Sardjito Yogyakarta. Patient criteria are above 18 years old, with Hemoglobin, Albumin, Lymphocyte, Platelet data and interleukin-6 data as well as the status of the patient's condition when returned home (died/survive) in medical record. Patients with hematologic disease, cancer, HIV, and incomplete data are excluded. The independent variable is HALP (Hemoglobin, Albumin, Lymphocyte, Platelet) SCORE and the dependent variable is interleukin-6. The correlation between each variable will be analyzed with correlation coefficient. The correlation Coefficient between HALP SCORE and interleukin-6 will be measured with Spearman Correlation test.

Result: A total of 56 COVID-19 patients at RSUD Dr. Sardjito Yogyakarta samples are analyzed on this research. We derived the data from medical records, which include HALP score and interleukin-6 in it. When analyzed using spearman correlation analysis, the correlation between HALP score and interleukin-6 is statistically significant, with the p value equals to 0.014 ($p < 0.05$).

Conclusion: There is a correlation between HALP score and interleukin-6 in hospitalized COVID-19 patients. Therefore, HALP score can be an early predictor for COVID-19 severity.

Keywords: COVID-19, HALP SCORE, interleukin-6, RSUP dr. Sardjito



INTISARI

Latar Belakang: Dengan kasus COVID-19 yang terus meningkat, studi mengenai metode deteksi dini keparahan COVID-19 masih diperlukan. Skor Hemoglobin, Albumin, Limfosit, dan Trombosit (HALP) merupakan penanda penting yang digunakan untuk memprediksi beberapa tumor. Setiap komponen tersebut termasuk dalam uji darah lengkap (CBC), yang dianggap sebagai tes yang tersedia di setiap layanan kesehatan primer. Namun, studi mengenai HALP SCORE pada identifikasi keparahan COVID-19 masih belum tersedia. Sedangkan interleukin-6 sudah dikenal sebagai deteksi dini untuk mengetahui tingkat keparahan komplikasi COVID-19.

Tujuan: Penelitian ini menganalisis hubungan skor HALP dengan interleukin-6 pada pasien COVID-19 rawat inap di RSUD Dr. Sardjito Yogyakarta..

Metode: Rancangan penelitian penelitian ini adalah penelitian kohort retrospektif, melibatkan pasien COVID-19 rawat inap berat dan kritis di RSUD Dr. Sardjito Yogyakarta. Kriteria pasien berusia di atas 18 tahun, dengan data Hemoglobin, Albumin, Limfosit, Trombosit dan interleukin-6 serta status kondisi pasien saat pulang (meninggal/selamat) di rekam medik. Pasien dengan penyakit hematologi, kanker, HIV, dan data yang tidak lengkap tidak dimasukkan. Variabel bebas dari penelitian ini adalah skor HALP (Hemoglobin, Albumin, Limfosit, Trombosit) dan variabel terikatnya adalah interleukin-6. Korelasi antara masing-masing variabel akan dianalisis dengan koefisien korelasi. Koefisien korelasi antara HALP SCORE dan interleukin-6 akan diukur dengan uji Korelasi Spearman.

Hasil: Sebanyak 56 sampel pasien COVID-19 di RSUD Dr. Sardjito Yogyakarta dianalisis dalam penelitian ini. Kami memperoleh data dari rekam medis, yang meliputi skor HALP dan interleukin-6 di dalamnya. Jika di analisis menggunakan uji korelasi Spearman, korelasi antara skor HALP dan interleukin-6 signifikan secara statistik, dengan nilai p sama dengan 0,014 ($p < 0,05$).

Kesimpulan: Terdapat korelasi antara skor HALP dan interleukin-6 pada pasien COVID-19 yang dirawat di rumah sakit. Oleh karena itu, skor HALP dapat menjadi prediktor awal keparahan COVID-19.

Kata Kunci: COVID-19, skor HALP, interleukin-6, RSUP dr. Sardjito