

Tesis

**KORELASI KADAR INTERLEUKIN-6, DENGAN RASIO
NEUTROFIL LIMFOSIT PADA PASIEN COVID-19
DERAJAT BERAT**



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ABSTRAK

Latar Belakang: Pandemi *corona virus disease* 2019 (COVID 19) telah menjadi kegawatan diseluruh dunia karena telah menginfeksi jutaan orang dan berpotensi semakin meningkat, serta angka kematian tinggi terutama pada derajat berat. Karakteristik temuan laboratorium pada pasien COVID-19 derajat berat, yaitu limfopenia, peningkatan rasio neutrofil limfosit (RNL) dan Interleukin-6 (IL-6), oleh karena itu RNL dan IL-6 dapat menjadi parameter diagnostik dan prognostik pasien COVID-19. Pemeriksaan IL-6 cukup mahal, dan tidak tersedia di semua rumah sakit daerah. Rasio neutrofil limfosit merupakan pemeriksaan rutin yang sederhana, murah, dan tersedia pada rumah sakit dengan modalitas terbatas. Penelitian ini bertujuan untuk mengetahui korelasi IL-6 dan RNL pada pasien COVID-19 derajat berat.

Metode: Penelitian analitik dengan rancangan potong lintang dilakukan terhadap 52 pasien yang telah didiagnosis COVID -19 derajat berat dan dirawat di bagian ICU COVID mulai Januari-Juni 2021. Pemeriksaan IL-6 menggunakan metode ECLIA dan pemeriksaan RNL menggunakan kalkulasi dengan rumus.

Hasil: Rerata usia subjek penelitian 58.7(12.7) tahun, Subjek penelitian terbanyak laki-laki 30 orang (57.7%), rerata jumlah leukosit $13.339/\text{mm}^3$ (7.470), rerata jumlah neutrofil 11.542 mm^3 (7.220), rerata hitung limfosit 1.086 mm^3 (762), median kadar IL-6 48,9 (5,0-5000) pg/mL, median RNL 10,2 (2,2-98,0). Hasil uji korelasi Spearman, mendapatkan tidak terdapat korelasi IL-6 dengan RNL ($r=0,017$, $p= 0,905$). Penyulit terbanyak diabetes melitus 26 orang (50%), hipertensi 24 orang (46,2%), penyakit jantung 15orang (28,8%), penyakit ginjal 11 orang (21,2%) dan penyakit hati 8 orang (15,4%).

Kesimpulan: Tidak terdapat korelasi Interleukin-6 dengan Rasio Neutrofil Limfosit

Kata kunci: COVID-19 derajat berat, IL-6, RNL, penyulit

CORRELATION BETWEEN INTERLEUKIN-6 LEVELS AND NEUTROPHIL LYMPHOCYTE RATIO IN SEVERE COVID-19 PATIENTS

ABSTRACT

Background: Coronavirus disease 2019 (COVID 19) pandemic has become a global emergency because it has infected millions of people, potential to increase, and death rate is high, especially in severe cases. Characteristics of laboratory findings in severe COVID-19 patients, namely lymphopenia, high neutrophil lymphocyte ratio (NLR) and IL-6, therefore NLR and IL-6 are diagnostic and prognostic parameters of COVID 19 patients. IL-6 testing is quite expensive, and not available at all regional hospitals. NLR is a routine examination, that is simple, inexpensive and available in hospitals with limited resources.

Objective: Aim of this study was to analyze correlation between IL-6 and NLR in severe COVID-19 patients.

Methods: An analytical study with cross-sectional design was carried out on 52 patients who had been diagnosed with severe COVID-19 and were treated in ICU Covid from January 2021-June 2021. Levels of IL-6 were measured using ECLIA and examination of NLR were measured with calculation method at Central Laboratory of Dr. RSUP Dr. M. Djamil Padang.

Results: Mean age of the study subjects was 58.7(12.7) years. Most of subject were men 30 people (57.7%), mean of leukocyte level was 13.339 (7.470,8), mean of neutrophils was 11.542,9 (7.220,7), mean of lymphocyte was 1.086. (762,32), median of IL-6 level 48,85 (5,0-5000) pg/mL, median of NLR 10,19 (2,2-98). There was no correlation between IL-6 levels with NLR in severe COVID-19 patients ($r=0,017$, $p= 0,905$). Most comorbid were diabetes melitus 26 people (50%), hypertension 24 people (46.2%), heart disease 15 people (28.8%), kidney disease 11 people (21.2%) and liver disease 8 people (15, 4%)

Conclusion: There was no correlation between IL-6 levels with NLR in severe COVID-19 patients.

Keywords: severe COVID-19, IL-6, NLR, comorbid