KORELASI RASIO *C-REACTIVE PROTEIN*-LIMFOSIT (CLR) DENGAN GAMBARAN RADIOGRAFI TORAKS PNEUMONIA COVID-19 BERDASARKAN *BRIXIA SCORE*

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INTISARI

Latar belakang: Angka kejadian COVID-19 di Indonesia terus meningkat. Tes diagnostik khusus untuk mendeteksi COVID-19 tidak selalu tersedia dan membutuhkan waktu untuk mendapatkan hasil. CXR bermanfaat untuk triage awal pasien dengan suspek COVID-19. Diperlukan satu biomarker yang dapat diandalkan dan terpercaya untuk memprediksi tingkat keparahan pneumonia COVID-19. Diketahui bahwa indeks CLR sebagai prediktor terbaik pneumonia pada pasien COVID-19.
Tujuan penelitian: Mengetahui apakah terdapat hubungan korelasi antara rasio CRP-Limfosit (CLR) dengan gambaran radiografi toraks pneumonia COVID-19 berdasarkan *Brixia Score*.
Bahan dan Cara: Penelitian ini adalah penelitian observasional analitik korelasi *cross-sectional* dengan data sekunder secara *consecutive non-random sampling*. Subjek penelitian adalah semua pasien COVID-19 dengan hasil PCR positif dengan gambaran pneumonia typical yang dilakukan pemeriksaan darah CRP dan limfosit dengan rentang waktu dengan pemeriksaan foto toraks kurang dari 24 jam di RSUP Dr Sardjito dengan periode Juni 2020-Juli 2021. Dilakukan penilaian foto toraks dengan sistem *Brixia Score* dengan nilai 0-18. Hasil CLR dikorelasikan dengan *Brixia Score* menggunakan uji korelasi.
Hasil: Didapatkan 40 subjek penelitian yang memenuhi kriteria inklusi dan eksklusi penelitian. Jenis kelamin laki-laki 20 subjek (50%) dan perempuan 20 subjek (50%). Dengan sebaran usia 18-30 tahun sebanyak 5 subjek (12,5%), 31-45 tahun sebanyak 10 subjek (25%), 46-59 tahun sebanyak 14 subjek (35%) dan ≥60 tahun sebanyak 11 subjek (27,5%). Untuk hasil luaran didapatkan 35 subjek sembuh (87,5%), meninggal 4 subjek (10%) dan pulang paksa sebanyak 1 subjek (2,5%). Untuk nilai *mean Brixia score* didapatkan 8,23±3,06, dan nilai *mean* CLR 105,12±64,80. Tidak terdapat korelasi antara CLR dengan *Brixia Score*. Dari hasil analisis kurva ROC didapatkan *Brixia score* memiliki kemampuan yang lebih baik daripada CLR dalam memprediksi kematian.
Kesimpulan: Terdapat korelasi yang lemah namun tidak bermakna secara statistik antara CLR dengan *Brixia score* (p=0,602) dengan nilai koefisien korelasi (r) sebesar 0,087. Hasil analisis kurva ROC didapatkan hasil bahwa *Brixia score* memiliki kemampuan diskriminasi yang lebih baik daripada CLR dalam memprediksi kematian.

Kata kunci: Pneumonia COVID-19, *Brixia Score*, radiografi toraks, CRP, limfosit, CLR

CORRELATION BETWEEN C-REACTIVE PROTEIN TO LYMPHOCYTE RATIO (CLR) AND CHEST RADIOGRAPHIC IMAGING OF PNEUMONIA COVID-19 WITH BRIXIA SCORE

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ABSTRACT

Background: The number of cases of COVID-19 in Indonesia continues to increase. Specific diagnostic tests to detect COVID-19 are not always available and take time to get results. CXR is useful for the initial triage of patients with suspected COVID-19. A reliable and reliable biomarker is needed to predict the severity of COVID-19 pneumonia. It is known that the CLR index is the best predictor of pneumonia in COVID-19 patients.
Objectives: To determine correlation between the CRP-Lymphocyte ratio (CLR) and the chest radiography of COVID-19 pneumonia based on the Brixia Score.
Materials and Methods: This study was a cross-sectional correlation analytic observational study with secondary data using consecutive non-random sampling. The research subjects were all COVID-19 patients with positive PCR results with a typical pneumonia picture who underwent blood examinations of CRP and lymphocytes with a time span with a chest X-ray examination of less than 24 hours at Dr Sardjito Hospital for the period June 2020-July 2021. A chest X-ray was assessed using the system Brixia Score with a value of 0-18. The CLR were correlated with the Brixia Score using a correlation test.
Results: There were 40 research subjects who met the inclusion and exclusion criteria of the study. Male 20 subjects (50%) and female 20 subjects (50%). With the distribution of age 18-30 years as many as 5 subjects (12.5%), 31-45 years as many as 10 subjects (25%), 46-59 years as many as 14 subjects (35%) dan ≥60 years as many as 11 subjects (27.5%). For the outcome, 35 subjects recovered (87.5%), 4 subjects died (10%), and 1 subject forced to return home. The mean Brixia score is 8.23±3.06 and the median CLR is 95,58 (6,4-319,15). There is no correlation between CLR with the Brixia Score. The results of the ROC curve analysis was Brixia score had a better ability than the CLR in predicting death.
Conclusion: There is a weak correlation but not statistically significant between CLR with the Brixia Score (p=0.602) with a correlation coefficient (r) of 0.087. The results of the ROC curve analysis was Brixia score had a better ability than the CLR in predicting death.

Keywords: Pneumonia COVID-19, Brixia Score, chest radiograph, CRP, lymphocytes, CLR