

KORELASI KADAR PLASMA LACTATE DEHYDROGENASE (LDH) TERHADAP GAMBARAN RADIOGRAFI TORAKS PNEUMONIA COVID-19

INTISARI

Latar belakang: Kasus pneumonia COVID-19 masih terus ada dan perkembangan penyakit yang sulit diprediksi. Diketahui bahwa kadar LDH merupakan salah satu faktor prediktor keparahan penyakit. Pada pasien COVID-19 yang sakit kritis, peningkatan LDH dapat mengindikasikan peningkatan aktivitas dan luasnya cedera paru.

Tujuan penelitian: Mengetahui korelasi kadar plasma LDH terhadap gambaran radiografi toraks pneumonia COVID-19.

Bahan dan Cara: Penelitian ini adalah penelitian observasional analitik korelasi *cross-sectional* dengan data sekunder secara *consecutive nonrandom sampling*. Subjek penelitian adalah semua pasien COVID-19 dengan hasil PCR positif dengan gambaran pneumonia *typical* dengan hasil kadar plasma *lactate dehydrogenase* (LDH) menggunakan metode UV Assay, dilakukan pemeriksaan radiografi toraks dalam jarak < 24 jam dari pemeriksaan kadar plasma LDH di RSUP Dr. Sardjito periode April-Juli 2021. Dilakukan penilaian foto toraks dengan sistem *Brixia Score* dengan nilai *Brixia Score* 0-18. Hasil dari pemeriksaan kadar plasma LDH dikorelasikan dengan nilai *Brixia Score* dengan uji korelasi.

Hasil: Didapatkan subjek 35 penelitian yang memenuhi kriteria inklusi dan eksklusi penelitian. Dari 35 subjek penelitian didapatkan jenis kelamin laki-laki lebih banyak yaitu 20 subjek (57,1%), perempuan 15 subjek (42,9%). Dengan sebaran usia <30 tahun sebanyak 2 subjek (5,7%), 31-40 tahun sebanyak 5 subjek (14,3%), 41-50 tahun sebanyak 9 subjek (25,7%) dan yang paling banyak adalah usia >50 tahun yaitu sebanyak 19 subjek (54,3%). Untuk hasil luaran didapatkan 29 subjek sembuh (82,8%), yang meninggal 6 subjek (17,1%). Untuk nilai mean *Brixia score* didapatkan $9,57 \pm 3,34$, dan nilai mean kadar LDH $465,63 \pm 219,53$. Dari hasil perhitungan dapat diketahui bahwa besar koefisien korelasi (r) antara kadar plasma LDH dengan *Brixia score* adalah sebesar 0,477 dengan signifikansi didapati nilai $p=0,004$ yang berarti bahwa terdapat korelasi yang bermakna secara statistik antara kadar plasma LDH dengan nilai *Brixia score*, dengan keeratan hubungan kategori sedang.

Kesimpulan : Terdapat korelasi yang bermakna secara statistik antara kadar plasma LDH dengan *Brixia score* radiografi toraks pada pasien COVID-19 ($p=0,004$) dengan nilai koefisien korelasi (r) sebesar 0,477 yang berarti semakin tinggi *Brixia score* semakin tinggi nilai kadar plasma LDH, dengan keeratan hubungan kategori sedang.

Kata kunci: *Brixia score*, LDH, COVID-19, radiografi toraks

CORRELATION OF PLASMA LACTATE DEHYDROGENASE (LDH) LEVELS TO RADIOGRAPHIC IMAGES OF THORAX PNEUMONIA COVID-19

ABSTRACT

Background: Cases of COVID-19 pneumonia continue to exist and the development of the disease is difficult to predict. It is known that LDH levels are one of the predictors of disease severity. In critically ill COVID-19 patients, elevated LDH may indicate increased activity and extent of lung injury.

Objective: To know the correlation of LDH plasma levels and the chest radiographic of COVID-19 pneumonia.

Materials and Methods: This study is a cross-sectional correlation analytic observational study with secondary data using consecutive nonrandom sampling. The research subjects were all COVID-19 patients with positive PCR results with a typical pneumonia picture with plasma lactate dehydrogenase (LDH) levels using the UV Assay method, chest radiography examinations were performed within < 24 hours from the examination of plasma LDH levels at Dr. RSUP. Sardjito for the period April-July 2021. A chest x-ray was assessed using the Brixia Score system with a Brixia Score of 0-18. The results of the examination of plasma LDH levels were correlated with the value of the Brixia Score with the correlation test.

Results: There were 35 research subjects who met the inclusion and exclusion criteria of the study. Of the 35 research subjects, there were more male sex, namely 20 subjects (57.1%), female 15 subjects (42.9%). With age distribution <30 years as many as 2 subjects (5.7%), 31-40 years as many as 5 subjects (14.3%), 41-50 years as many as 9 subjects (25.7%) and most of them were aged >50 years as many as 19 subjects (54.3%). For the outcome, 29 subjects recovered (82.8%), 6 subjects died (17.1%). The mean Brixia score was 9.57 3.34, and the mean LDH level was 465.63 219.53. From the calculation results, it can be seen that the correlation coefficient (r) between plasma LDH levels and the Brixia score is 0.477 with a significance value of $p = 0.004$ which means that there is a statistically significant correlation between plasma LDH levels and the Brixia score, with a close relationship medium category.

Conclusion: There is a statistically significant correlation between plasma LDH levels and Brixia scores of chest radiography in COVID-19 patients ($p = 0.004$) with a correlation coefficient (r) of 0.477, which means the higher the Brixia score, the higher the plasma LDH levels, with a moderate correlation. .

Keywords: Brixia score, LDH, COVID-19, chest radiograph.