

KORELASI SATURASI OKSIGEN TERHADAP GAMBARAN RADIOGRAFI TORAKS PNEUMONIA COVID-19

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INTISARI

Latar belakang: Kasus pneumonia COVID-19 terus meningkat. Diketahui bahwa hipoksemia merupakan salah satu faktor prediktor kematian. Hipoksemia dapat dideteksi dini dengan pengukuran saturasi oksigen.

Tujuan penelitian: Mengetahui korelasi saturasi oksigen 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* yang dilakukan pemeriksaan saturasi oksigen perifer dan saturasi oksigen arterial dengan rentang waktu dengan pemeriksaan foto toraks kurang dari 4 jam di RSUP Dr Sardjito dengan periode Juni -Juli 2021. Dilakukan penilaian foto toraks dengan sistem *Brixia Score* dengan nilai *Brixia Score* 0-18. Hasil saturasi oksigen perifer yang didapatkan dari *pulse oxymetri* dan saturasi oksigen arterial didapatkan dari analisa gas darah dikorelasikan dengan nilai *Brixia Score* dengan uji korelasi.

Hasil: didapatkan subjek 43 penelitian yang memenuhi kriteria inklusi dan eksklusi penelitian. Dari 43 subjek penelitian didapatkan jenis kelamin laki-laki lebih banyak yaitu 26 subjek (60,5%), perempuan 17 subjek (39,5%). Dengan sebaran usia <30 tahun sebanyak 2 subjek (4,7%), 31-40 tahun sebanyak 6 subjek (14%), 41-50 tahun sebanyak 10 subjek (23,3%) dan yang paling banyak adalah usia >50 tahun yaitu sebanyak 25 subjek (58,1%). Untuk hasil luaran didapatkan 30 subjek sembuh (69,8%), yang meninggal 8 subjek (18,6%) dan tidak didapatkan data sebanyak 5 subjek (11,6%). Untuk nilai mean *Brixia score* didapatkan $10,139 \pm 3,427$, dan nilai mean SpO₂ $86,093 \pm 8,026$ serta nilai mean SaO₂ $93,500 \pm 7,454$. Didapatkan korelasi antara saturasi oksigen SpO₂ dengan *Brixia Score* dengan nilai P = 0,000. Nilai r negatif artinya semakin tinggi nilai SpO₂ maka semakin rendah nilai *Brixia Score*. Dari hasil perhitungan dapat diketahui bahwa besar koefisien korelasi (r) antara SpO₂ dengan *Brixia score* adalah sebesar 0,005 dengan signifikansi didapati nilai p=0,976 yang berarti bahwa tidak terdapat korelasi yang bermakna secara statistik antara SaO₂ dengan nilai *Brixia score*.

Kesimpulan : Terdapat korelasi yang bermakna secara statistik antara nilai saturasi oksigen perifer (SpO₂) dengan *Brixia score* pada pasien COVID-19 (p=0,000) dengan nilai koefisien korelasi (r) sebesar -0,653 yang berarti berkorelasi kuat dengan arah korelasi negatif, semakin tinggi *Brixia score* semakin rendah nilai saturasi oksigen. Tidak terdapat korelasi antara SaO₂ dengan *Brixia Score*. Terdapat discrepancy antara SaO₂ dengan SpO₂.

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

CORRELATION OF OXYGEN SATURATION TO RADIOGRAPHIC IMAGES OF THORAX PNEUMONIA COVID-19

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ABSTRACT

Background: COVID-19 pneumonia cases continues to increase. It is known that hypoxemia is a predictor of mortality. Hypoxemia can be detected early by measuring oxygen saturation.

Objective: To determine the correlation of oxygen saturation to the chest radiographic picture of COVID-19 pneumonia.

Materials and Methods: This study was a cross-sectional correlation analytic observational study with secondary data using consecutive nonrandom sampling. The subjects of the study were all COVID-19 patients with positive PCR results with a typical pneumonia picture who were examined for peripheral oxygen saturation and arterial oxygen saturation with a time span with a chest x-ray examination of less than 4 hours at Dr Sardjito Hospital with the period June-July 2021. An assessment was carried out chest X-ray with the Brixia Score system with a Brixia Score 0-18. Peripheral oxygen saturation results obtained from pulse oximetry and arterial oxygen saturation obtained from blood gas analysis were correlated with the Brixia Score value by correlation test.

Results: 43 research subjects met the inclusion and exclusion criteria of the study. Of the 43 research subjects, there were more men, namely 26 subjects (60.5%), female 17 subjects (39.5%). With the distribution of age <30 years as many as 2 subjects (4.7%), 31-40 years as many as 6 subjects (14%), 41-50 years as many as 10 subjects (23.3%) and most of them are aged >50 years, namely as many as 25 subjects (58.1%). For the outcome, 30 subjects recovered (69.8%), 8 subjects died (18.6%) and there were no data obtained for 5 subjects (11.6%). The mean Brixia score was 10.139 3,427, and the mean SpO₂ was 86,093 8,026 and the mean SaO₂ was 93,500 7,454. A correlation was found between SpO₂ oxygen saturation and Brixia Score with P value = 0.000. A negative r value means that the higher the SpO₂ value, the lower the Brixia Score. From the calculation results, it can be seen that the correlation coefficient (r) between SpO₂ and Brixia score is 0.005 with a significance value of p=0.976, which means that there is no statistically significant correlation between SaO₂ and the Brixia score.

Conclusion: There is a statistically significant correlation between peripheral oxygen saturation (SpO₂) and Brixia scores in COVID-19 patients (p=0.000) with a correlation coefficient (r) of -0.653, which means a strong correlation with a negative correlation direction, the higher The Brixia score the lower the oxygen saturation value. There is no correlation between SaO₂ and Brixia Score. There is a discrepancy between SaO₂ and SpO₂.

Keywords: Pneumonia COVID-19, Brixia Score, chest radiograph