

INTISARI

HUBUNGAN SYSTEMIC IMMUNE-INFLAMMATION INDEX (SII) DENGAN C-REACTIVE PROTEIN (CRP) PADA PASIEN COVID-19 RAWAT INAP DI RSUP DR. SARDJITO YOGYAKARTA

Latar Belakang: Pandemi COVID-19 sejak 2020 telah menjadi perhatian utama masalah kesehatan dunia. Virus ini menyebar dengan cepat sehingga menjadi penyebab morbiditas dan mortalitas yang tinggi. Saat ini, penanda inflamasi seperti CRP, NLR, dan SII dapat digunakan sebagai prognosis pasien COVID-19. Nilai SII dan CRP yang tinggi berhubungan dengan tingkat keparahan inflamasi COVID-19, namun belum banyak studi yang melaporkan mengenai hubungan SII dan CRP secara langsung sebagai parameter keparahan COVID-19.

Tujuan: Menganalisis hubungan antara *Systemic Immune-Inflammation Index* (SII) dengan *C-Reactive Protein* (CRP) pada pasien COVID-19 rawat inap di RSUP Dr. Sardjito Yogyakarta.

Metode: Desain penelitian menggunakan kohort restrospektif yang melibatkan pasien COVID-19 rawat inap derajat berat dan kritis di RSUP Dr. Sardjito Yogyakarta pada Mei–Oktober 2021. Hubungan antarvariabel ditentukan berdasarkan koefisien korelasi dan perbedaan rerata. Koefisien korelasi antara SII dan CRP diukur dengan uji korelasi Spearman serta perbedaan rerata diukur dengan uji Mann Whitney.

Hasil: Didapatkan 210 subjek yang memenuhi kriteria penelitian. Analisis korelasi Spearman menunjukkan tidak terdapat korelasi antara SII dengan CRP ($r= 0.085$, $p= 0.221$). Sedangkan ditemukan korelasi lemah antara SII dengan CRP pada pasien COVID-19 derajat kritis dengan $r= 0.250$ dan $p= 0.106$. *Cut-off* SII ditentukan melalui nilai median yakni 3431.38. Uji Mann Whitney menunjukkan tidak terdapat perbedaan rerata kelompok SII tinggi dan rendah terhadap CRP pada pasien COVID-19 rawat inap pada seluruh derajat keparahan ($p= 0.216$) maupun pada masing-masing derajat keparahan yakni derajat berat ($p= 0.559$) dan derajat kritis ($p= 0.139$).

Kesimpulan: Tidak terdapat korelasi antara SII dengan CRP pada pasien COVID-19 rawat inap derajat berat dan kritis di RSUP Dr. Sardjito Yogyakarta namun korelasi lemah antara SII dengan CRP pada pasien COVID-19 derajat kritis saja. Selain itu, ditemukan tidak adanya perbedaan rerata antara kelompok SII tinggi dengan rendah terhadap CRP pada pasien COVID-19 rawat inap di RSUP. Dr. Sardjito Yogyakarta.

Katakunci: COVID-19, *Systemic Immune-Inflammation Index*, *C-Reactive Protein*, Sepsis, *Inflammation Index*

ABSTRACT

RELATIONSHIP BETWEEN *SYSTEMIC IMMUNE-INFLAMMATION INDEX (SII)* AND C-REACTIVE PROTEIN (CRP) IN HOSPITALIZED COVID-19 PATIENTS IN RSUP DR. SARDJITO YOGYAKARTA

Background: Since 2020, the COVID-19 pandemic has become a major concern for health problems around the world. This virus spreads rapidly, so that it becomes a cause of high morbidity and mortality. Currently, inflammatory markers such as CRP, NLR, and SII can be used as prognostic indicators for COVID-19 patients. High SII and CRP values are associated with the severity of inflammation in COVID-19 patients, but not many studies have reported a direct relationship between SII and CRP as parameters of COVID-19 severity.

Objective: Analyzing the relationship between the Systemic Immune-Inflammation Index (SII) and C-Reactive Protein (CRP) in hospitalized COVID-19 patients at RSUP Dr. Sardjito Yogyakarta.

Methods: There were 210 subjects who met the research criteria. Spearman's correlation analysis showed that there was no correlation between SII and CRP ($r=0.085$, $p=0.221$). Meanwhile, a weak correlation was found between SII and CRP in critically ill COVID-19 patients, with $r=0.250$ and $p=0.106$. The SII cut-off is determined by the median value of 3431.38. The Mann Whitney test showed that there was no difference in the mean of the high (≥ 3431.38) and low (< 3431.38) SII groups in CRP in hospitalized COVID-19 patients at all degrees of severity ($p=0.216$) or for each severity, namely the degree of severity ($p=0.559$) and critical degree ($p=0.139$).

Result: There were 210 subjects who met the research criteria. Spearman's correlation analysis showed that there was no correlation between SII and CRP ($r=0.085$, $p=0.221$). Meanwhile, a weak correlation was found between SII and CRP in critically ill COVID-19 patients, with $r=0.250$ and $p=0.106$. The SII cut-off is determined by the median value of 3431.38. The Mann Whitney test showed that there was no difference in the mean of the high and low SII groups in CRP in hospitalized COVID-19 patients at all degrees of severity ($p=0.216$) or for each severity, namely the degree of severity ($p=0.559$) and critical degree ($p=0.139$).

Conclusion: There is no correlation between SII and CRP in severe and critically hospitalized COVID-19 patients at Dr. Sardjito Yogyakarta, but there is a weak correlation between SII and CRP in critically hospitalized COVID-19 patients only. In addition, there was no difference in mean between the high and low SII groups for CRP in COVID-19 patients hospitalized at RSUP Dr. Sardjito Yogyakarta.

Keywords: COVID-19, *Systemic Immune-Inflammation Index*, *C-Reactive Protein*, *Sepsis*, *Inflammation Index*