

INTISARI

Latar Belakang: Sindrom Koroner Akut (SKA) menjadi penyebab utama morbiditas dan mortalitas kardiovaskular di Indonesia maupun global. Respons inflamasi sistemik berperan penting dalam patogenesis dan progresi SKA, termasuk dalam menentukan luasan infark dan risiko komplikasi lanjut. Indeks Imun-Inflamasi Sistemik (Systemic Immune-Inflammation Index, SII) yang dihitung dari parameter darah rutin (neutrofil, limfosit, dan trombosit), merupakan biomarker inflamasi untuk prediksi mortalitas pada pasien SKA. Data mengenai nilai prediktif SII pada populasi pasien SKA di Indonesia, khususnya di RS Sardjito masih sangat terbatas.

Tujuan: Penelitian ini bertujuan untuk mengkaji hubungan nilai SII saat masuk rumah sakit dengan mortalitas in-hospital pasien SKA, guna mengevaluasi potensi SII sebagai prediktor mortalitas.

Metode: Penelitian ini menggunakan desain kohort retrospektif dengan subjek penderita SKA yang dirawat di RS Sardjito. Data dikumpulkan dari rekam medis elektronik pasien selama periode Januari 2023 sampai September 2025. Nilai SII dihitung dari hasil pemeriksaan darah lengkap saat awal masuk rumah sakit. Luaran utama penelitian ini mortalitas in-hospital. Data dianalisis menggunakan uji chi-square untuk analisis regresi logistik multivariat.

Hasil: Penelitian ini melibatkan 1513 pasien SKA. Median nilai SII pada populasi penelitian adalah 1595,88. Mortalitas intra-rumah sakit ditemukan pada 191 pasien (12,6%). Analisis ROC menunjukkan AUC sebesar 0,600 dengan nilai cut-off optimal SII 1913,58, sensitivitas 53,4% dan spesifisitas 61,6%. Pada analisis bivariat $SII \geq 1913,56$ berhubungan signifikan dengan mortalitas intra-RS ($p < 0,001$). Namun pada analisis multivariat setelah dikontrol faktor perancu, SII tidak terbukti sebagai prediktor independent mortalitas (OR 1,387; 95% CL 0,956–2,012; $P = 0,085$). Faktor yang berhubungan signifikan dengan mortalitas intra-RS adalah usia ≥ 55 tahun, hipertensi, derajat Killip, *Multi-vessel diseases*, tidak dilakukan pemasangan stent, tidak mendapat terapi ACEi/ARB, dan penggunaan diuretik.

Kesimpulan: (1) Imun-Inflamasi Sistemik pada pasien SKA yang dirawat di RS Sardjito pada periode Januari 2023 – September 2025, didapatkan cut-off optimal 1913,58 (sensitivitas 0,534 dan spesifisitas 0,616 dengan nilai AUC 0,600); (2) Imun-Inflamasi Sistemik tidak mempengaruhi kematian intra RS dan (3) Karakteristik pasien SKA yang mempengaruhi kematian intra RS meliputi usia > 55 tahun, hipertensi, derajat Killip, *multi-vessel diseases*, tidak adanya pemasangan stent, tidak konsumsi obat ACEi/ARB, dan konsumsi diuretik.

Kata kunci: Sindrom koroner akut, Indeks Imun-Inflamasi Sistemik, Mortalitas, IMA-EST, IMA-NEST, APTS.

ABSTRACT

Background: Acute Coronary Syndrome (ACS) remains a major cause of cardiovascular morbidity and mortality both globally and in Indonesia. Systemic inflammatory responses play an important role in the pathogenesis and progression of ACS, including determining infarct size and the risk of subsequent complications. The Systemic Immune-Inflammation Index (SII), calculated from routine blood parameters (neutrophils, lymphocytes, and platelets), has been proposed as an inflammatory biomarker for predicting mortality in patients with ACS. However, data regarding the predictive value of SII in ACS patients in Indonesia, particularly at RS Sardjito, remain limited.

Objective: This study aimed to evaluate the association between SII values at hospital admission and in-hospital mortality among patients with ACS, and to assess the potential of SII as a predictor of mortality.

Methods: This study used a retrospective cohort design involving patients with ACS who were treated at RS Sardjito. Data were obtained from electronic medical records during the period of January 2023 to September 2025. The SII value was calculated from complete blood count results at hospital admission. The primary outcome of this study was in-hospital mortality. Statistical analyses included chi-square tests and multivariate logistic regression analysis.

Results: A total of 1,513 patients with ACS were included in this study. The median SII value in the study population was 1,595.88. In-hospital mortality occurred in 191 patients (12.6%). Receiver operating characteristic (ROC) analysis showed an area under the curve (AUC) of 0.600 with an optimal SII cut-off value of 1,913.58, sensitivity of 53.4%, and specificity of 61.6%. In the bivariate analysis, $SII \geq 1,913.58$ was significantly associated with in-hospital mortality ($p < 0.001$). However, in multivariate analysis after adjusting for confounding factors, SII was not an independent predictor of mortality (OR 1.387; 95% CI 0.956–2.012; $p = 0.085$).

Conclusion: The systemic immune-inflammation index in ACS patients treated at RS Sardjito during January 2023–September 2025 showed an optimal cut-off value of 1,913.58 (sensitivity 0.534, specificity 0.616, AUC 0.600). However, SII was not independently associated with in-hospital mortality. Factors associated with in-hospital mortality included age >55 years, hypertension, higher Killip class, multi-vessel disease, absence of stent implantation, lack of ACE inhibitor/ARB therapy, and diuretic use.

Keywords: Acute coronary syndrome, Systemic immune-inflammation index, Mortality, STEMI, NSTEMI, UAP.