INTISARI

Latar Belakang: Penyakit kardiovaskular merupakan salah satu penyebab utama morbiditas dan mortalitas. Proses inflamasi kronis yang menyertai penyakit jantung dapat memicu peningkatan trombopoiesis dan penurunan limfosit akibat stres oksidatif, yang tercermin dalam perubahan profil hematologis.
Cardiopulmonary bypass (CPB) digunakan secara luas pada operasi jantung, namun sering kali memicu respons inflamasi sistemik yang dapat memperburuk luaran klinis, termasuk memperpanjang lama perawatan di ICU. Oleh karena itu, identifikasi biomarker inflamasi praoperasi yang sederhana dan terjangkau menjadi penting untuk menilai risiko pascaoperasi. Marker inflamasi yang biasa digunakan TNFα, IL-6 dan CRP. Marker tersebut mahal dan tidak selalu tersedia.
*Platelet to Lymphocyte Ratio (*PLR), telah digunakan sebagai indikator inflamasi pada berbagai kondisi, termasuk penyakit jantung. Data mengenai hubungan PLR praoperatif dengan durasi perawatan ICU pascaoperasi jantung menggunakan CPB masih terbatas.
Tujuan: Menilai korelasi antara PLR praoperasi dengan lama perawatan di ICU pada pasien pasca CPB.
Metode: Penelitian ini menggunakan desain penelitian *cross sectional* yang dilaksanakan di RSUP Dr. Sardjito pada bulan Juli-November 2023. Subjek penelitian adalah pasien operasi bedah jantung dengan CPB. Sampel menggunakan darah diambil dengan tabung EDTA dan diukur menggunakan Sysmex KX-21. Uji korelasi untuk menilai korelasi PLR praoperasi dengan lama perawatan di ICU menggunakan spearman. Nilai $p<0,05$ dianggap signifikan secara statistik. Uji statistik menggunakan *software* SPSS versi 25.0.
Hasil: Penelitian melibatkan 43 subjek terdiri dari 22 laki – laki (51%) dan 21 perempuan (49%). Terdapat korelasi positif antara PLR praoperasi dengan lama perawatan di ICU ($r=0,484;p=0,001$).
Kesimpulan: Terdapat korelasi positif antara PLR praoperasi dengan lama perawatan di ICU.

Kata kunci: penyakit jantung, *cardiopulmonary bypass*, *platelet to lymphocyte ratio* praoperasi, lama perawatan ICU.

ABSTRACT

Background: Cardiovascular disease is one of the leading causes of morbidity and mortality. The chronic inflammatory process associated with heart disease can trigger increased thrombopoiesis and decreased lymphocytes due to oxidative stress, which is reflected in changes in the hematological profile.
Cardiopulmonary bypass (CPB) is widely used in heart surgery, but it often triggers a systemic inflammatory response that can worsen clinical outcomes, including prolonging the length of stay in the ICU. Therefore, identifying simple and affordable preoperative inflammatory biomarkers is important for assessing pascaoperative risk. Commonly used inflammatory markers are TNFα, IL-6, and CRP. These markers are expensive and not always available.
The Platelet to Lymphocyte Ratio (PLR) has been used as an inflammatory marker in various conditions, including heart disease. Data on the relationship between preoperative PLR and pascaoperative ICU stay duration after heart surgery using CPB remains limited.
Objective: To assess the correlation between preoperative platelet to lymphocyte ratio and ICU length of stay in patient pasca cardiopulmonary bypass .
Methods: This study used a cross sectional research design with a retrospective approach, conducted at Dr. Sardjito General Hospital from July to November 2023. The subjects were cardiac surgery patients who underwent CPB. Blood samples were collected using EDTA tubes and analyzed with the Sysmex KX-21 analyzer. A correlation test was performed to assess the association between preoperative PLR and ICU length of stay. A p-value of <0.05 was considered statistically significant. Statistical analysis was conducted using SPSS software version 25.0.
Results: The study involved 43 subjects consisting of 22 males (51%) and 21 females (49%). There was a positive correlation between preoperative PLR and length of stay in the ICU (r=0.484; p=0.001).
Conclusion: There is a positive correlation between preoperative PLR and length of stay in the ICU.

Key words: cardiovascular disease, cardiopulmonary bypass, PLR preoperative, ICU length of stay