

INTISARI

Latar belakang: Trombositopenia merupakan komplikasi keganasan hematologi yang sering membutuhkan transfusi profilikasis atau terapi, di antaranya dengan komponen *thrombopheresis*. Pada skrining donor *thrombopheresis* dilakukan pemeriksaan jumlah trombosit dan indeks trombosit yang meliputi *Mean Platelet Volume*(MPV), *Platelet Distribution Width* (PDW), *Platelet Large Cell Ratio* (PLCR), *Plateletcrit* (PCT) namun aplikasinya belum banyak diketahui. Donor *thrombopheresis* dengan jumlah trombosit berukuran besar lebih banyak tercermin dalam pemeriksaan indeks trombosit sesaat sebelum donasi, secara teori dapat meningkatkan keberhasilan transfusi, diukur dengan *Corrected Count Increment* (CCI) 1 jam pasca transfusi.

Tujuan: Mengevaluasi korelasi indeks trombosit(MPV,PDW,PLCR,PCT) donor *thrombopheresis* dengan CCI 1 jam pasca transfusi trombosit pada pasien keganasan hematologi dewasa

Metode: Desain penelitian observasional analitik, pendekatan potong lintang dilakukan di ruang rawat pasien keganasan hematologi dewasa non intensif, Unit Pelayanan Transfusi Darah dan Instalasi Laboratorium Terpadu RSUP Dr.Sardjito Yogyakarta bulan Nopember 2020 sampai Juli 2021. Pemeriksaan jumlah trombosit dan indeks trombosit dengan *hematology analyzer* Sysmex XN-550 dilakukan pada subjek donor *thrombopheresis* sebelum donasi. Jumlah trombosit diperiksa pada subjek pasien pra-transfusi dan 1 jam pasca-transfusi. Penghitungan CCI dilakukan dengan kalkulasi menggunakan rumus CCI. Uji korelasi menggunakan Spearman, uji normalitas menggunakan Saphiro-Wilk. Nilai $p < 0,05$ signifikan secara statistik. Analisis statistik menggunakan SPSS 26.0

Hasil: Sebanyak 45 subjek donor diikutkan dalam penelitian dengan semua jenis kelamin adalah laki-laki yang memiliki median usia 36(22-61), MPV 10,2(7,5-13,1) fL, PDW 12(8,4-20,3) fL, PCT 0,25(0,12-0,42)% serta rerata nilai PLCR adalah $28,47 \pm 6,9\%$. Sejumlah 45 subjek pasien diikutkan dalam penelitian ini dengan rincian 29(64,4%) pasien laki-laki dan 16(35,6%) perempuan dengan median usia 50(18-68) tahun. Terdapat korelasi positif yang lemah namun bermakna secara statistik antara PLCR donor dan CCI pasien 1 jam pasca transfusi *thrombopheresis* ($r = 0,327$; $p = 0,028$). Tidak ditemukan korelasi antara indeks trombosit(MPV,PDW, PCT) dan CCI 1 jam pasca transfusi *thrombopheresis*.

Simpulan: Nilai PLCR berkorelasi positif secara signifikan dengan CCI 1 jam pasca transfusi *thrombopheresis* pasien keganasan hematologi dewasa. Tidak ditemukan korelasi antara nilai CCI ini dengan indeks trombosit lain.

Kata kunci: keganasan hematologi, donor *thrombopheresis*, PLCR, CCI

ABSTRACT

Background: Thrombocytopenia is a complication of hematological malignancies that often requires prophylactic transfusion or therapy, including a thrombopheresis component. In donor thrombopheresis screening, the platelet count and platelet index are examined, including Mean Platelet Volume (MPV), Platelet Distribution Width (PDW), Platelet Large Cell Ratio (PLCR), Platelet Crit (PCT), but their application is not widely known. Thrombopheresis donors with a greater number of large platelets, reflected in the platelet index examination immediately before donation, can theoretically increase the success of the transfusion, measured by the Corrected Count Increment (CCI) 1 hour post-transfusion.

Objective: To evaluate the correlation of platelet indices (MPV, PDW, PLCR, PCT) of donor thrombopheresis with CCI 1 hour post-transfusion in adult hematological malignancy patients

Methods: The research design was analytical observational research design with cross-sectional approach carried out in the ward for patients with non-intensive adult hematological malignancies, the Blood Transfusion Service Unit and the Integrated Laboratory Installation of Dr. XN-550 was performed on donor subjects for thrombopheresis prior to donation. Platelet counts were checked in patient subjects pre-transfusion and 1 hour post-transfusion. CCI calculations use the CCI formula. Correlation test using Spearman, normality test using Shapiro-Wilk. The p value <0.05 is statistically significant. Statistical analysis using SPSS 26.0

Results: A total of 45 donor subjects were included in the study, all were males with median age of 36(22-61), MPV 10.2(7.5-13.1) fL, PDW 12(8.4-20.3) fL, PCT 0.25(0.12-0.42)% and the average PLCR value was 28.47±6.9%. A total of 45 patient subjects were included in the study, with details of 29 (64.4%) male patients and 16 (35.6%) female patients also with median age 50(18-68) years. There was a weak but statistically significant positive correlation between donor PLCR and patient CCI 1 hour after thrombopheresis transfusion ($r= 0.327$; $p= 0.028$). No correlation was found between platelet indices (MPV, PDW, PCT) and CCI 1 hour after thrombopheresis transfusion.

Conclusion: The PLCR value is significantly positively correlated with CCI 1 hour after thrombopheresis transfusion in adult hematological malignancy patients. No correlation was found between this CCI value and other platelet indices.

Keywords: Hematology malignancy, thrombopheresis donor, thrombocytopenia, PLCR, CCI,