INTISARI

Latar Belakang:
Donor darah rentan mengalami defisiensi besi. Kelompok donor seperti perempuan, usia 46-60 tahun, donor regular, jumlah donasi tinggi dan interval donasi singkat cenderung lebih rentan menderita defisiensi besi. *Extended parameter* hematologi *percentage of hypo-haemoglobinised red cells* (*%Hypo-He*) dapat mengukur proporsi eritrosit hipokromik yang berpotensi sebagai indikator awal defisiensi besi. Pemeriksaan *%Hypo-He* mudah, murah dan cepat, namun belum banyak diteliti di Indonesia khususnya pada berbagai populasi donor.

Tujuan:
Tujuan dari penelitian ini adalah untuk mengevaluasi perbandingan *%Hypo-He* pada berbagai karakteristik populasi donor darah.

Metode:
Penelitian ini menggunakan desain deskriptif-analitik dengan rancangan potong lintang (*cross sectional*) di unit pengelola darah (UPD) di RSUP Dr. Sardjito dari bulan Juli sampai Oktober 2023. Subjek penelitian adalah donor darah yang memenuhi kriteria seleksi donor sesuai PMK No 91 tahun 2015. Subjek yang mengonsumsi suplemen zat besi atau mengalami inflamasi yang ditandai dengan kadar *C-reactive protein* >5 mg/L, dieksklusi dari penelitian. Pengukuran *%Hypo-He* dilakukan dengan metode *fluorescence flow-cytometry*. Uji beda dua kelompok menggunakan Mann-Whitney U *test* dengan hasil dikatakan berbeda signifikan secara stastistik apabila $p<0,05$.

Hasil:
Sebanyak 136 orang donor memenuhi kriteria inklusi dan eksklusi yang terdiri dari laki-laki sebanyak 108 orang (79,4%) dan perempuan sejumlah 28 orang (20,6%). Sebanyak 96 orang (70,6%) berusia 18-45, dan 40 orang (29,4%) berusia 46-60 tahun. Donor reguler tercatat sejumlah 81 orang (70,4%) sedangkan 34 orang (29,6%) merupakan donor non-reguler. Sebagian besar donor berdonasi ≤6 kali (74 orang; 54,4%), dengan interval donasi ≤6 bulan yaitu sebanyak 58 orang (50,4%). Median *%Hypo-He* pada donor perempuan lebih tinggi signifikan dibandingkan donor laki-laki (0,35% vs 0,2%; $p=0,008$), median *%Hypo-He* pada donor usia 18-45 tahun dan usia 46-60 tahun 0,2% ($p=0,032$), median *%Hypo-He* pada donor reguler dan non-reguler 0,2% ($p=0,031$), median *%Hypo-He* pada Jumlah donasi ≤6 kali dan > 6 kali 0,2% ($p=0,041$), dan median *%Hypo-He* pada interval ≤ 6 bulan lebih tinggi signifikan dibandingkan >6 bulan (0,2% vs 0,1%; $p=0,012$).

Simpulan:
Median *%Hypo-He* lebih tinggi signifikan pada kelompok donor perempuan dan interval donasi ≤6 bulan, sementara nilai rentang *%Hypo-He* lebih tinggi pada donor usia 18-45 tahun, donor reguler, dan jumlah donasi >6 kali

Kata Kunci: donor darah, defisiensi besi, *%Hypo-He*

ABSTRACT

Background:
Blood donors are at risk of iron deficiency. Certain groups of donors, such as female donors, donors aged 46-60 years, regular donors, those who donate frequently, and those who donate at short intervals, tend to be more prone to iron deficiency. Extended hematology parameter %Hypo-H*e* measures hypochromic erythrocytes and may serve as an early indicator of iron deficiency in donors. The %Hypo-He test is simple, cost-effective, and rapid; however, it has not been extensively studied in Indonesia, particularly across various donor populations.
Objective:
This study aimed to evaluate the comparison of %Hypo-H*e* across various demographic characteristics and blood donation patterns
Method:
This descriptive-analytic study with a cross-sectional design was conducted at the Transfussion Unit at Dr. Sardjito General Hospital from July to October 2023. Study subjects were blood donors who met the donor selection criteria according to the PMK No.91 of 2015. Donors who were taking iron supplements or had inflammation, indicated by C-reactive protein (CRP) levels >5 mg/L, were excluded from the study. Measurements of %Hypo-H*e* were performed using fluorescence flow cytometry methode. The Mann-Whitney U test was used to compared the two groups, with results considered statistical significance if p <0.05.
Result:
A total of 136 donors met the inclusion and exclusion criteria, consisting of 108 males (79.4%) and 28 females (20.6%). A total of 96 donors (70,6%) were in the 18-45 age group, and 40 donors (29.4%) were in the 46-60 age group. There were 81 regular donors (70.4%), while 34 non-regular donors (29.6%). Most donors had donated ≤6 times (74 people; 54.4%), while the majority had a donation interval of ≤6 months (58 individuals, 50.4%). The median %Hypo-H*e* was significantly higher in female donors compared to male donors (0.35% vs 0.2%; p=0.008). Median %Hypo-H*e* in donors aged 18-45 years and 46-60 years was 0.2%, with a statistically significant difference (p=0.032). Median %Hypo-H*e* in regular and non-regular was 0.2% (p=0.031). Median %Hypo-H*e* in donors with ≤6 donations and >6 donations was 0.2% (p=0.041), and the median %Hypo-H*e* in the interval ≤6 months was significantly higher than > 6 months (0.2% vs 0.1%; p = 0.012).
Conclusion:
The median %Hypo-He was significantly higher in the female donor and those with donation interval ≤6 months, while the ranges of %Hypo-He were higher among 18–45 age group, regular donors, and those with >6 donations.

Keywords: blood donors, iron deficiency, %Hypo-H*e*