

INTISARI

Latar Belakang:

Proses donor darah reguler cenderung berisiko terjadi defisiensi besi. Standar pemeriksaan predonasi yang berupa kadar hemoglobin saja belum dapat menyingkirkan kondisi defisiensi besi pada donor. Kondisi defisiensi besi meningkatkan jumlah eritrosit mikrositik yang diukur dengan alat Sysmex XN 1000 melalui parameter %*microR*. Penelitian ini dilakukan karena pentingnya mengkaji karakteristik yang berisiko terjadi defisiensi besi pada populasi donor.

Tujuan:

Untuk mengkaji perbandingan %*microR* pada berbagai populasi donor darah di RSUP Dr. Sardjito.

Metode:

Penelitian ini merupakan studi observasional potong lintang yang dilakukan di Unit Pelayanan Transfusi Darah (UPTD) RSUP Dr. Sardjito pada bulan Juli sampai Oktober 2023. Kriteria inklusi yaitu donor darah yang lolos seleksi donor darah, sedangkan kriteria eksklusi adalah pemberian suplementasi besi dan inflamasi yang dibuktikan dengan pemeriksaan *C-reactive protein* (CRP) ≤ 5 mg/L. Pengambilan sampel menggunakan teknik *consecutive sampling*. Parameter %*microR* dianalisis menggunakan perangkat lunak SPSS versi 25. Uji beda antar kelompok berdasarkan demografi (jenis kelamin dan usia) dan pola donasi (jumlah, interval, dan jenis donasi) dilakukan dengan analisis *Mann-Whitney U* dan disajikan dengan boxplot. Hasil statistika dikatakan bermakna ketika $p < 0,05$.

Hasil:

Subjek penelitian ini adalah 137 donor yang terdiri dari 109 donor laki-laki dan 28 donor perempuan dengan usia ≤ 45 tahun sebanyak 99 orang dan usia > 45 tahun sebanyak 38 orang. Donor didominasi oleh donor pengganti (67,88%), golongan darah O (43,07%), telah mendonorkan darahnya 1-6 kali semasa hidupnya (55%), serta interval waktu donasi > 6 bulan (57%). Nilai median %*microR* pada usia ≤ 45 tahun lebih tinggi dibandingkan dengan usia > 45 tahun (2,1% vs 1,5%; $p=0,040$), median %*microR* pada donasi > 6 kali lebih tinggi dibandingkan 1-6 kali (2,15% vs 1,6%; $p=0,016$), dan median %*microR* interval donasi ≤ 6 bulan lebih tinggi dibandingkan > 6 bulan (2,1% vs 1,6%; $p=0,038$). Tidak ada perbedaan bermakna pada donor darah laki-laki dan perempuan ($p=0,586$) serta donor pengganti dan sukarela ($p=0,796$).

Simpulan:

Nilai %*microR* lebih tinggi pada kelompok donor darah yang berusia ≤ 45 tahun, donasi > 6 kali, dan interval donasi ≤ 6 bulan.

Kata Kunci: donor darah, status besi, defisiensi besi, %*microR*

ABSTRACT

Background:

Regular blood donation is at risk of iron deficiency. Standard predonation screening of hemoglobin levels alone cannot rule out iron deficiency in donors. Iron deficiency increases the number of microcytic erythrocytes as measured by the Sysmex XN 1000 through the %microR parameter. This study was conducted because of the importance of assessing the characteristics at risk of iron deficiency in the donor population.

Objective:

To assess the comparison of %microR in various blood donor populations at Dr. Sardjito Hospital.

Methods:

This study was a cross-sectional observational study conducted at the Blood Transfusion Service Unit (UPTD) of Dr. Sardjito Hospital from July to October 2023. Inclusion criteria were blood donors who passed the blood donor selection, while exclusion criteria were iron supplementation and inflammation as evidenced by C-reactive protein (CRP) ≤ 5 mg/L examination. Samples were collected using consecutive sampling technique. The %microR parameters were analyzed using SPSS software version 25. Tests of differences between groups based on demographics (gender and age) and donation patterns (number, interval, and type of donation) were performed using Mann-Whitney U analysis and presented with boxplots. Statistical results were considered significant when $p < 0.05$.

Results:

The subjects of this study were 137 donors consisting of 109 male donors and 28 female donors with age ≤ 45 years as many as 99 people and age > 45 years as many as 38 people. Donors were dominated by replacement donors (67.88%), blood type O (43.07%), had donated blood 1-6 times during their lifetime (55%), and the donation time interval was > 6 months (57%). The median %microR at age < 45 years was higher than that at age > 45 years (2.1% vs. 1.5%; $p=0.040$), the median %microR at donation > 6 times was higher than that at 1-6 times (2.15% vs. 1.6%; $p=0.016$), and the median %microR at donation interval ≤ 6 months was higher than that at > 6 months (2.1% vs. 1.6%; $p=0.038$). There was no significant difference between male and female blood donors ($p=0.586$) and substitute and voluntary donors ($p=0.796$).

Conclusion:

The %microR value was higher in the group of blood donors aged ≤ 45 years, donation > 6 times, and donation interval ≤ 6 months.

Keywords: blood donation, iron status, iron deficiency, %microR