



INTISARI

Latar Belakang:

Donor darah merupakan unsur utama dalam sistem pelayanan darah. Dikenal ada 3 jenis donor darah berdasarkan motivasinya yaitu donor sukarela, donor keluarga/pengganti, dan donor bayaran/komersial. Di RSUP Dr. Sardjito hanya dikenal donor sukarela dan donor pengganti. Data layanan Unit Pelayanan Transfusi Darah (UPTD) RSUP Dr. Sardjito menunjukkan bahwa donor sukarela cenderung lebih sering mendonasikan darahnya, sehingga donor sukarela berada pada risiko defisiensi besi. Setiap donor akan diambil 350 mL darah yang menyebabkan hilangnya besi dan meningkatkan risiko defisiensi besi. Diperlukan suatu penelitian yang menganalisis simpanan besi pada donor sukarela dibandingkan dengan donor pengganti.

Tujuan:

Untuk mengetahui perbandingan kadar feritin serum pada donor sukarela dan donor pengganti di RSUP Dr. Sardjito.

Metode:

Penelitian ini dilakukan di UPTD dan Instalasi Laboratorium Terpadu (ILT) RSUP Dr. Sardjito menggunakan rancangan penelitian observasional potong lintang dengan *random sampling*. Populasi target penelitian ini adalah donor darah *whole blood* dengan populasi terjangkau UPTD RSUP Dr. Sardjito yang memenuhi kriteria inklusi dan eksklusi. Parameter yang diperiksa adalah feritin serum dan *C-reactive protein* (CRP) dan dianalisis menggunakan perangkat lunak SPSS versi 25. Data numerik disajikan dalam bentuk rerata \pm SB atau median (minimum–maksimum) berdasarkan normalitas. Data kategorikal disajikan dalam bentuk frekuensi-proporsi. Distribusi data kontinyu diperiksa normalitasnya dengan uji Kolmogorov-Smirnov. Uji beda feritin serum kedua kelompok subjek penelitian dilakukan menggunakan uji Mann-Whitney U. Uji beda multivariat menggunakan uji Kruskal-Wallis. Hasil uji beda dikatakan bermakna secara statistik apabila nilai $p < 0,05$.

Hasil:

Sebanyak 137 donor darah dianalisis, dengan 44 (32,12%) donor sukarela dan 93 (67,88%) donor pengganti. Kadar feritin serum pada kelompok donor sukarela secara signifikan lebih rendah ($p = 0,018$) dibandingkan kelompok donor pengganti [berturut turut, 56,1 (10,6–374,0) $\mu\text{g/L}$, 94,6 (8,6–346,0) $\mu\text{g/L}$]. Donor laki-laki cenderung memiliki kadar feritin serum lebih tinggi. Kadar feritin serum terendah ditemukan pada donor dengan interval dengan donasi terakhir < 3 bulan [45,8 (12,2–171,0) $\mu\text{g/L}$]. Mayoritas donor pengganti mendonasikan darahnya dengan interval > 6 bulan, sedangkan donor sukarela lebih banyak mendonasikan dengan interval 3–6 bulan.

Simpulan:

Kadar feritin serum donor sukarela secara signifikan lebih rendah dibandingkan donor darah pengganti. Perbandingan kadar feritin serum donor sukarela dan pengganti berdasarkan kelompok jenis kelamin juga menunjukkan hasil lebih rendah pada donor sukarela, meskipun secara statistika tidak bermakna, sehingga dapat diusulkan pemeriksaan feritin serum berkala terutama bagi donor dengan frekuensi tinggi dan meninjau ulang batasan interval antardonasi, baik pada donor sukarela maupun pengganti. Unit Transfusi Darah juga dapat memberikan suplementasi besi pada donor darah agar simpanan besi tidak menjadi defisien untuk menjaga keselamatan donor.

Kata Kunci: donor darah; donor darah sukarela; donor darah pengganti; defisiensi besi; feritin serum



ABSTRACT

Background:

Blood donors are an important element of blood service system. There currently are 3 types of blood donor based on their motivation, namely voluntary donor, family/replacement donor, and paid/commercial donor. In RSUP Dr. Sardjito, there are only 2 types of blood donor: voluntary donor and replacement donor. Data from Unit Pelayanan Transfusi Darah (UPTD) RSUP Dr. Sardjito Unit showed that voluntary donors tend to donate their blood more often. Every donor gives 350 mL of blood that will cause iron loss and it increases the risk become iron deficient. Therefore, voluntary donors are at risk to be iron deficient. A study is needed to analyze the iron storage in voluntary donors compared to in replacement donors.

Objective:

To compare serum ferritin concentration between voluntary donors and replacement donors in RSUP Dr. Sardjito.

Method:

This study was conducted in UPTD and Instalasi Laboratorium Terpadu (ILT) RSUP Dr. Sardjito using observational, cross-sectional design with random sampling. The target population were whole blood donors and the reached population were whole blood donors in UPTD RSUP Dr. Sardjito who meet the inclusion and exclusion criteria. The parameters studied were serum ferritin and C-reactive protein (CRP) and were analyzed using SPSS version 25 software. Numeric data are presented as mean \pm SD or median (minimum–maximum) based on the data normality. Categorical data are presented as frequency-proportion. Continuous data distribution normality was assessed using Kolmogorov-Smirnov test. Two means comparison used Mann-Whitney U test. Multivariate analysis used Kruskal-Wallis test. Statistical difference was significant when $p < 0,05$.

Results:

This study analyzed 137 donors, of those are 44 (32,12%) voluntary donors and 93 (67,88%) replacement donors. Serum ferritin level are significantly lower ($p = 0,018$) in voluntary donors compared to replacement donors [56,1 (10,6–374,0) μ g/L, 94,6 (8,6–346,0) μ g/L, respectively]. Male donors tend to have higher serum ferritin levels. The lowest serum ferritin level was observed in donors who donated their blood within <3 months interval [45,8 (12,2–171,0) μ g/L]. The majority of replacement donors donated their blood in >6 months interval, while more voluntary donors donated their blood within 3–6 months interval.

Conclusion:

Serum ferritin level in voluntary donors was significantly lower compared to in replacement donors. Serum ferritin level comparison based on sex between voluntary and replacement donors also showed lower value in voluntary donors, although it was statistically insignificant. Therefore, routine serum ferritin level examination can be suggested, mainly in highly frequent donors, and interdonation interval should be reassessed in voluntary or replacement donors. Blood Transfusion Unit may also give iron supplementation to blood donors to prevent iron deficiency to assure donor safety.

Keywords: blood donor; voluntary donor; replacement donor; iron deficiency; serum ferritin