

## INTISARI

### HUBUNGAN ANTARA ASUPAN PROTEIN, ZAT BESI, VITAMIN C, DAN INHIBITOR ABSORPSI ZAT BESI DENGAN STATUS BESI PADA PENDONOR DARAH DI PMI KOTA YOGYAKARTA

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**Latar belakang:** Selain menurunkan produktivitas, anemia pada pendonor darah juga berpotensi menurunkan angka donasi dan keamanan bagi pendonor. Pada pendonor rutin, risiko anemia semakin besar karena proses pengambilan darah. Skrining status besi pendonor darah dilakukan dengan mengukur kadar hemoglobin. Namun, hemoglobin belum dapat menggambarkan cadangan besi dalam tubuh. Oleh sebab itu, diperlukan evaluasi faktor lain yang mungkin mempengaruhi status besi dalam tubuh untuk memprediksi cadangan besi.

**Tujuan :** Mengetahui hubungan antara asupan protein, zat besi, vitamin C serta *inhibitor* absorpsi zat besi dengan status ferritin dan hemoglobin pada pendonor darah di PMI Kota Yogyakarta.

**Metode :** Penelitian ini merupakan penelitian *cross sectional* yang dilakukan di PMI Kota Yogyakarta. Pengambilan darah intravena dilakukan untuk mengukur status besi. Analisis kadar hemoglobin menggunakan *Cyanomethemoglobin* dan kadar ferritin menggunakan *Cobas chemistry analyzer* dengan metode ELISA. Data asupan diperoleh melalui diwawancarai menggunakan *semi quantitative food frequency questionnaire*. Analisis statistik menggunakan uji korelasi Pearson dengan SPSS.

**Hasil :** Sebanyak 72 pendonor darah bersedia mengikuti penelitian. Rata-rata ferritin  $69,8 \pm 57,0$  ng/ml dan hemoglobin  $14,1 \pm 1,2$  g/dl. Pendonor yang telah mendonorkan darah lebih dari dua kali memiliki kadar hemoglobin yang lebih tinggi namun kadar ferritin yang lebih rendah daripada pendonor yang baru 1-2 kali mendonorkan darah. Berdasarkan uji pearson terdapat korelasi yang bermakna antara kecukupan besi dengan haemoglobin ( $p=0,010$   $r=0,302$ ). Tidak terdapat korelasi yang bermakna antara status besi dengan kecukupan protein dan vitamin C. *Inhibitor* absorpsi besi tidak memiliki korelasi yang bermakna dengan status besi, namun terlihat arah korelasi negatif.

**Kesimpulan :** Terdapat korelasi positif antara kecukupan asupan besi dengan hemoglobin pendonor darah di PMI Kota Yogyakarta. Tidak terdapat hubungan yang bermakna antara asupan protein, vitamin C, dan *inhibitor* absorpsi zat besi dengan ferritin dan hemoglobin pendonor darah di PMI Kota Yogyakarta.

Kata kunci: asupan, status besi, pendonor darah

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## ABSTRACT

### THE RELATION BETWEEN INTAKE OF PROTEIN, VITAMIN C, IRON, AND ABSORPTION INHIBITOR OF IRON WITH IRON STATUS IN BLOOD DONORS AT PMI YOGYAKARTA

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**Background:** Anemia in blood donors may decrease the donation number and also harm the blood donors. Regular blood donor has higher risk of anemia due to blood loss. Iron status screening for blood donor assessed by haemoglobin that is not represent iron reserved in body. Therefore, it is needed to evaluate other possible factor that can be predict iron reserve.

**Result :** To investigate the relation between iron status based on protein, vitamin C, iron, and absorption inhibitor of iron intake in blood donors at PMI Yogyakarta.

**Methods:** This study was carried out with cross sectional design. Intravenous blood was obtain to asses iron status. Hemoglobin was analyzed using Cyanomethemoglobin and ferritin was analyzed using Cobas Chemistry analyzer. Interview was conducted using semi quantitative food frequency questionnaire to get intake data. Data were analyzed statistically using Pearson test.

**Results:** Seventy-two blood donors agreed to attend this study. Mean of ferritin was  $69,8 \pm 57,0$  ng/ml and hemoglobin was  $14,1 \pm 1,2$  g/dl. Donor who donated blood more than two times has higher hemoglobin but lower ferritin compare to the one who donate less than two times. Pearson test showed there was positive correlation between iron intake and hemoglobin ( $p=0,010$   $r=0,302$ ). Iron status had no significant correlation with protein and vitamin C intake. Thus, intake of absorption inhibitor of iron showed negative correlation that is not statistically significant.

**Conclusions:** Iron intake positively correlated with hemoglobin in blood donor at PMI Yogyakarta. There were no significant correlation between intake of protein, vitamin C, and absorption inhibitor of iron with ferritin and hemoglobin in blood donor at PMI Yogyakarta.

Keywords: intake, iron status, blood donor

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