Rapid Recovery Time of Hemoglobin Level in Female Regular Blood Donors with Ferrous Fumarate and High Dose of Ascorbic Acid Supplement

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Abstract

Background: Iron deficiency anemia has occurred more frequently in female than male regular blood donors. Iron supplement is necessary for maintaining the hemoglobin level. A combination with ascorbic acid increases the absorption of iron.

Objective: Compare the effect of ferrous fumarate 200 mg/day and the combination of ferrous fumarate 200 mg/day with ascorbic acid 100mg /day and 500mg /day on hemoglobin level and red blood cell indices in female regular blood donors.

Material and Method: Female regular blood donor volunteers were randomly divided into three equal groups to supplement with each regimen for one month. Hemoglobin (Hb), MCV, MCH, and MCHC before and after blood donation at 0.5, 1, 2, and 3 months, were compared.

Results: Ninety-six volunteers were included and equally divided into three groups of 32 volunteers each. There were no significant differences between age, BMI, ABO blood group, Rh, Hb, MCV, MCH, and MCHC before blood donation between each group ($p>0.05$). The duration of recovery times of Hb to before blood donation levels in group I, II, and III being 2, 3, and 1 month, respectively were statistically significant difference ($p<0.001$). The duration of recovery times of MCV, MCH, and MCHC to before blood donation levels in both group II and III were similar (0.5 months in every value), which was more rapid than in group I (>3, 3, and 1 month, respectively) with statistically significant difference ($p<0.001$). All three groups tolerated well. No participant withdrew from the present study because of side effects.

Conclusion: The present study shows that a combination of ferrous fumarate 200 mg and ascorbic acid 500 mg per day accelerates timing of hemoglobin and red blood cell indices in recovery to the level of before blood donation in female regular blood donors.

Keywords: Hemoglobin, Blood donor, Ferrous fumarate, Ascorbic acid, Iron supplement

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