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Media Advisory: To contact Joseph E. Kiss, M.D., email Jim Fitzgerald at jfitzgerald@itxm.org.

Iron Supplementation Improves Hemoglobin Recovery Time Following Blood Donation

Among blood donors with normal hemoglobin levels, low-dose oral iron supplementation, compared with no supplementation, reduced the time to recovery of the postdonation decrease in hemoglobin concentration in donors with low or higher levels of a marker of overall iron storage (ferritin), according to a study in the February 10 issue of *JAMA*.

It is estimated that 25 percent to 35 percent of blood donors become iron depleted from regular blood donation. Although blood donation is allowed every 8 weeks in the United States, recovery of hemoglobin to the currently accepted standard is frequently delayed, and some donors become anemic. Hemoglobin level and iron status are getting renewed attention as a donor safety issue based on increasing evidence that iron depletion is associated with fatigue, decreased exercise capacity and neurocognitive changes, according to background information in the article.

Joseph E. Kiss, M.D., of the Institute for Transfusion Medicine, Pittsburgh, and colleagues randomly assigned 215 eligible study participants (who had not donated whole blood or red blood cells within 4 months) to receive one tablet of ferrous gluconate (37.5 mg of elemental iron) daily or no iron for 24 weeks after donating a unit of whole blood (500 ml). The study was conducted at four regional blood centers in the United States. The primary outcomes for the study were time to recovery of 80 percent of the postdonation decrease in hemoglobin and recovery of ferritin level (an indicator of the amount of total iron stored in the body).

The researchers found that compared with participants who did not receive iron supplementation, those who did had shortened time to 80 percent hemoglobin recovery in both the low-ferritin (average 32 days vs 158 days) and higher-ferritin groups (average 31 days vs 78 days). Recovery of iron stores in all participants who received supplements took a median of 76 days; for participants not taking iron, median recovery time was longer than 168 days. Without iron supplements, 67 percent of participants did not recover iron stores by 168 days.

“Although the absolute amount of hemoglobin decrease was relatively small and of marginal clinical consequence after a single blood donation, donating blood is an iterative [repeated] process that leads to progressive iron loss and anemia in some frequent blood donors, so it is important that the hemoglobin decrease after blood donation be recovered before the next blood donation,” the authors write.

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