

IV Iron Administration

Purpose

To assure the safe and appropriate administration of intravenous iron

Population Covered

Infant, pediatric, adolescent, adult, and geriatric patients receiving intravenous iron

Definitions

Iron studies. Iron studies include ferritin, TIBC, serum iron, and percent transferrin saturation

Supplemental Information

Indications

- Iron is critical for normal hemoglobin synthesis to maintain oxygen transport. Additionally, iron is necessary for metabolism and synthesis of DNA and various enzymatic processes.
- The total body iron content of an adult ranges from 2 to 4 grams. Approximately 2/3 is in hemoglobin and 1/3 in reticuloendothelial storage and ferritin.
- The administration of exogenous erythropoietin increases red blood cell production and iron utilization. The increased iron utilization and possible blood loss may lead to absolute or functional iron deficiency.
- Iron deficiency is absolute when the hematologic indication of iron stores are low which is determined by lab values such as ferritin, serum iron or transferrin saturation percent.
- Patients with functional iron deficiency do not meet laboratory criteria for absolute iron deficiency. However, when IV iron is administered, these patients will demonstrate an increase in hemoglobin/hematocrit or a dose reduction in erythropoietin with stable hemoglobin/hematocrit.

In order to determine iron deficiency, it is recommended to obtain baseline labs before beginning iron therapy. Labs should be drawn using micro-sampling for CBC, reticulocyte, and iron studies with serum ferritin.

Iron supplements are necessary when the following lab values are abnormal:

- Ferritin less than 150 mcg/ml
- Transferrin saturation less than 20%

Note: If the patient's ferritin is greater than 100 mcg/ml but less than 600 mcg/ml, iron studies need to be evaluated every four weeks if erythropoietin is initiated. The pre-existing iron levels may be reduced by 50% within one week of erythropoietin therapy.

Intravenous iron is indicated as a source of iron replacement in iron deficiency anemia if the patient:

- Cannot tolerate oral iron
- Is considered unreliable to continue oral iron for an extended period of time
- Has a malabsorption syndrome
- Is experiencing prolonged erythropoietin therapy
- Has a need to rapidly replete iron stores to protect against future bleeding (bloodless patients)

References

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5. Center for Bloodless Care, Meridian Health System. Jersey Shore Medical Center, Neptune, New Jersey.
6. Torres, S., Sorensen, E.R., Bliss-Holtz, J., & Neibart, R. (2001) Implication of iron in a transfusion alternative program (bloodless) in the cardiac surgery patient. Jersey Shore Medical Center, Neptune, New Jersey.

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