MedStar Health

Bloodless Medicine and Surgery Program (BMSP)

Pre-operative Anemia Management

I. Pre-operative Timing

A. For elective surgeries, a three-to-four week lead time is ideal to initiate hemoglobin optimization.

B. Once a week treatments begin three weeks out from surgery.

C. First dose is given 21 days prior to surgery, 14 days, and 7 days. This allows optimal time for each regimen to take effect.

D. An additional treatment may be scheduled for the day before surgery, which will provide coverage up to four days post-operatively.

E. For more urgent surgeries (14 days or less) a more intense optimization regimen is initiated. In such cases daily treatments up to 10 days before surgery can be initiated.

II. Classification of Anemia

A. The WHO classification of anemia is based upon gender:

Male Hb < 13.0 g/dl

Female Hb < 12.0 g/dl

B. For surgical patients a more appropriate concept is defining the patient's hemoglobin as either optimal or suboptimal based upon the complexity of the surgery and degree of blood loss expected.

C. Regardless of gender, a Hb > 13.0 g/dl should be considered optimal.

NEED ASSISTANCE?

MedStar Franklin Square Medical Center
Office (443) 777-8893 | Nurse Coordinator pager (410) 932-8241

MedStar Georgetown University Hospital
Office (855) 546-0625 | Nurse Coordinator pager (202) 405-0353

III. Iron Therapy: Oral vs. Intravenous (IV)

A. Oral iron provides a low-cost treatment for anemia. Absorption, tolerance, and time are major issues in many patients.

B. IV iron is safe, cost-effective, and more efficient than oral iron. A visit to the infusion clinic is required and may be inconvenient for certain patients.

C. IV iron allows for rapid replenish of iron stores especially for patients non-responsive to oral iron and those with severe iron deficiency.

D. Dosing is based on total iron deficit **(see box below *Calculating Iron Deficit*)**.

E. For some, optimization can be achieved with IV iron alone.

VI. Erythropoietin Stimulating Agents (ESA)

A. In the U.S. rHuEPO use has been approved for patients undergoing elective orthopedic surgery and has been extended for use to other elective, noncardiac, nonvascular surgeries.

B. Off-label use of rHuEPO has been suggested for cardiac or gastrointestinal cancer resection.

C. Dosing for epoietin alfa has not been standardized. Two common dosing regimens are 300 IU kg^{-1} day^{-1} for daily use and 600 IU kg^{-1} for weekly use.

Calculating Iron Deficit

Body weight (kg) x (150-Hb $g.l^{-1}$) x 0.24 + 500 mg = **Total iron deficit**

Simple formula based upon Hb and patient's body weight:

Hb	Iron Dosing - Body Wt<70kg	Iron Dosing - Body Wt>70kg
<7 $g.dl^{-1}$	1200 mg	1500 mg
7-10 $g.dl^{-1}$	1000 mg	1200 mg

MedStar Georgetown University Hospital

MEDSTAR GEORGETOWN UNIVERSITY HOSPITAL
Adult Pre-Operative Anemia Management

DATE: _____ **TIME:** _____ **PROCEDURE DATE:** _____

PATIENT NAME: _____ **DOB:** _____

MRN: _____ **CURRENT WEIGHT:** _____ kg (lb ÷ 2.2)

DRUG ALLERGIES: _____ **ICD10 Code:** _____

Baseline Lab Orders

- ☐ Hemoglobin: _____g/dL (Date: __/__/__)
- ☐ Ferritin: _____ng/mL (Date: __/__/__)
- ☐ Transferrin Saturation (TSat): _____% (Date: __/__/__)

Justification

- ☐ Iron Deficiency Anemia (ICD 64.9; 50.9)
- ☐ Anemia of Chronic Disease
- ☐ Bloodless Patient

Indication

Hemoglobin <13 mg/dL AND ONE OF THE BELOW:

- ☐ Serum ferritin <30 ng/mL **OR** TSat <20% (then treat with Iron IV)
- ☐ Ferritin 30 to 500 ng/mL **AND** TSat <20% (then treat with Iron IV and EPO)
- ☐ Hemoglobin <10 mg/dL **AND** Ferritin 30-500 ng/mL **AND** TSat >20% (then treat with EPO only)

Erythropoetic Stimulating Agent (ESA)

- ☐ Erythropoietin 600 Int. Units/kg subcutaneously x1 dose weekly

Dose = _____ Int. Units SQ x 1 (Maximum 80,000 Units)

Iron Therapy

- ☐ Iron sucrose 100 mg over 15 minute normal infusion; given with each dose of erythropoietin
- ☐ Iron sucrose 200 mg to infuse over one (1) hour
- ☐ Infed 1,000 mg to infuse over two (2) hours
- ☐ Feraheme 510 mg IV x 1 dose, then repeat after 24 hours

Administration Dates

__/__/____ __/__/____ __/__/____ __/__/____ __/__/____ __/__/____

Pretreatment for Iron Infusion (for history greater than one drug allergy, RAD, IBD, rheumatoid arthiritis or other inflammatory conditions)

- ☐ Famotidine 20 mg IV x 1 dose

SELECT ONE: Methylprednisolone ☐ 40 mg IV x 1 dose ☐ 125 mg IV x 1 dose if RAD

Follow standard infusion center reaction protocol for infusion related reactions

If hypersensitivity reaction tote iron occurs, initiate hypersensitivity protocol

Ordering MD: _____ **Signature:** _____