Authorizing physician(s)

All Orthopedic Surgeons

Authorized to whom

The Blood Conservation Nurse (BCN).

Patient Description/Population

The patient population to be assessed by the BCN will meet all of the following criteria:

- The patient has been referred for perioperative blood conservation for procedures with high blood loss.
- The patient has been referred more than 3 weeks prior to surgery.
- The tentative surgery date is within 6 weeks.
- The patient’s hemoglobin is less than 130 g/L.

Medical Directive Description/Physician’s Order

Optimizing perioperative hemoglobin is a key strategy in perioperative blood conservation. The BCN will perform the following activities under this medical directive:

The BCN will order laboratory tests for the assessment of anemia:

- Initial tests may include CBC, reticulocyte count, ferritin, TIBC, transferrin saturation, B12, creatinine.
- CBC, reticulocyte count may be ordered during therapy to assess response
- CBC will be ordered preoperatively on the day of surgery
The BCN will direct the patient to initiate one of the following oral iron preparations for 4-6 weeks preoperatively:

- Ferrous Fumarate (Palafer®) 300 mg PO daily
- OR
- Polysaccharide-Iron Complex (FeraMAX®) 150 mg PO daily
- OR
- Heme iron polypeptide (Proferrin®) 11 mg PO twice daily

The BCN will assess the laboratory results for iron deficiency anemia.
- Iron deficiency anemia is defined as ferritin less than 30 mcg/L or ferritin less than 200 mcg/L with a transferrin saturation less than 20%.
- In addition to preoperative oral iron, intravenous iron will be considered if:
  - The patient does not tolerate oral iron
  - OR
  - The time to surgery is too short to enhance iron stores
  - OR
  - Hemoglobin less than 110 g/L due to iron deficiency

If the patient meets the criteria as noted above for intravenous iron, the BCN will order:
- Iron sucrose 300 mg in 250 mL 0.9% Sodium Chloride IV infusion over 2 hours, weekly for a maximum of 3 doses. If the patient weighs less than 50 kg, administer 200 mg in 250 mL 0.9% Sodium Chloride IV infusion over 2 hours

In other causes of anemia, the BCN will assess the patient for epoetin alfa and, if appropriate, will order:
- Epoetin alfa 40,000 units subcutaneous pre-operatively every 5-7 days for a maximum of four doses
- Administration schedule guideline based on Hemoglobin level:
  - For Hemoglobin less than 109 g/L administer every 5-7 days to a maximum of 4 doses
  - For Hemoglobin 110-119 g/L administer every 5-7 days to a maximum of 3 doses
  - For Hemoglobin 120-129 g/L administer every 5-7 days to a maximum of 2 doses
  - Hemoglobin target is 130 g/L except in renal or oncology patients where the hemoglobin target is 120 g/L
- Notify physician if hemoglobin increases more than 10 g/L per week or if hemoglobin is greater than 129 g/L for any patient or greater than 119 g/L for renal or oncology patients
If patient is being treated by nephrology, oncology or hematology, consult regarding treatment plan prior to offering any treatment.

**Contraindications to the implementation of the Directive**

The patient has an allergy or has any contraindications to oral iron, intravenous iron and/or epoetin alfa.

**Identify relevant Delegated Controlled Act or Added Skill associated with this Directive**

- Ordering laboratory testing
- Communicating a diagnosis identifying a disease or disorder as the cause of a person’s symptoms.

**Documentation requirements**

- The BCN will document in the health record that discussion concerning blood conservation measures took place, and the outcome of that conversation.
- Implementation of the medical directive will be documented on the physicians order sheet
- The patients’ primary Health Care Provider will be notified if any blood conservation strategies are initiated via faxed copy of the Physician Update Letter

**Review/Evaluation Process (how often/by whom)**

This Medical Directive will be reviewed in six months and then yearly by the Physician Lead for BCC
References
Ontario Transfusion Coordinators (ONTraC) Blood Conservation Algorithm

http://www.janssen.ca/product/117

London Health Sciences Medical Directive (2013)

Ferrous fumarate monograph. Retrieved from
https://online.lexi.com/lco/action/doc/retrieve/docid/patch_f/6905

Proferrin product information Compendium of Pharmaceuticals and Specialties, online version (e-CPS).© Canadian Pharmacists Association, 2013.


Iron: MedlinePlus supplements