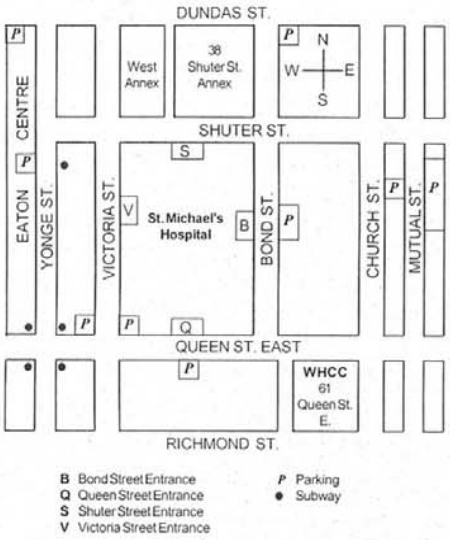
The Location...

Blood Transfusion Services, located at the 2nd floor, Victoria Wing

Location of Hospital



Blood Transfusion Services
St. Michael's Hospital
30 Bond Street
Toronto, Ontario
M5B 1W8

tel: (416) 864-5084

Form NO. 69133 Dev. 10/2000

SMH
ST. MICHAEL'S HOSPITAL

Blood Conservation Programme

Information for Physicians on Erythropoietin

SMH
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Use of Erythropoietin to reduce allogeneic blood exposure:

In patients with a pretreatment haemoglobin level of >100 to <130g/L, erythropoietin has been shown to decrease the risk of receiving allogeneic transfusions and hasten erythroid recovery (i.e. increased haemoglobin levels, haematocrit levels, and reticulocyte counts).

Erythropoietin may be used alone or as an adjunct to:

- Preoperative Autologous Donation
- Perioperative Cell Salvage
- Acute Normovolemic Haemodilution

Indications

Erythropoietin therapy is indicated to treat patients who are undergoing major elective surgery and have a pretreatment haemoglobin of >100 to <130g/L.

It is also indicated for patients in whom the use of blood or blood products is not possible (e.g. Jehovah's Witnesses).

Combined use of Erythropoietin and Autologous Blood Donation (ABD)

Erythropoietin has been shown to stimulate red blood cell production in order to augment autologous blood collection and to limit the decline in haematocrit in adult patients scheduled for major elective surgery who are not expected to predeposit their complete perioperative blood needs. The greatest effects are observed in patients with low haemoglobin (less than 130g/L.

Erythropoietin may thus be indicated to facilitate autologous blood collection within a predeposit program, and may decrease the risk of receiving allogeneic blood transfusions in patients scheduled for major elective surgery and are expected to require more blood than that which can be obtained through autologous blood collection techniques, in the absence of erythropoietin.

Contraindications

Erythropoietin is contraindicated in patients with:

1. Uncontrolled hypertension.
2. Known hypersensitivity to mammalian cell-derived products, albumin (human) or any component of the product.
3. Patients with conditions associated with Thrombotic/Vascular events.

The use of erythropoietin in patients scheduled for elective surgery and not participating in an autologous blood donation program, is contraindicated in patients with severe coronary, peripheral arterial, carotid, or cerebral vascular disease, including patients with recent myocardial infarction or cerebral vascular accident.

Adverse Events
Hypertension:

Patients with uncontrolled hypertension should not be treated with erythropoietin; blood pressure may rise during erythropoietin therapy, often during the early phase of treatment when the haematocrit is increasing, especially in patients with chronic renal failure (CRF). EPO does not have direct pressor effects.

For patients who respond to erythropoietin therapy with a rapid increase in haemoglobin, the dose of Erythropoietin should be reduced because of the possible association of excessive rate of rise of haematocrit with exacerbation of hypertension.

Thrombotic/Vascular Events:

Patients with conditions associated with thrombotic/vascular events should be closely monitored. However, the frequency of thrombotic & vascular events was not increased in patients undergoing EPO therapy before major elective orthopaedic cases.

Thrombotic/Vascular events were reported in <15% of patients in 3 studies. The overall prevalence of these adverse events in the groups of patients received EPO (100IU/kg and 300IU/kg did not differ significantly from control.

Seizures

Erythropoietin should be used with caution in patients with a history of seizures.

Delayed or Diminished Response:

Inadequate response to erythropoietin should prompt an investigation for causative factors. If the patient fails to respond or to maintain a response, the following etiologies should be considered:

1. Iron deficiency.
2. Underlying infections, inflammatory, or malignant processes.
3. Occult blood loss.
4. Underlying haematologic disease (e.g. thalassemia, refractory anaemia, or other myelodypsplastic disorders).
5. Vitamin deficiencies: folic acid or vitamin B_{12}.
6. Haemolysis.

Problems?

Contact Transfusion Coordinator at:
864-6060 x4055

Laboratory Tests:

Haematology: Patients receiving erythropoietin should have haematocrit/haemoglobin levels measured weekly until hematocrit/haemoglobin has been stabilized, and measured periodically there after. The platelet count should be regularly monitored during the first 8 weeks of therapy. There may be a moderate dose-dependant rise in platelet count, usually within the normal range, during treatment with erythropoietin. This regresses during the course of continued therapy. Development of thrombocytosis is rare.

All surgery patients being treated with erythropoietin should receive adequate iron replacement throughout the course of therapy in order to support erythropoiesis and avoid depletion of iron stores (e.g. 300 mg Ferrous gluconate tid orally). Serum Ferritin should be measured at the initial assessment.

Erythropoietin Dosage and Schedule

- a suggested dose is 300IU/kg, up to 4 weekly doses.
- administered subcutaneously.
- lead time presurgically is 4-6 weeks.
- some 3rd Party Insurance coverage possible.
  Requires assistance of RxEprex:
  Toll Free @ 1-877-793-7739
- requires Hb & platelets, Serum Ferritin, BP check prior to administration.
- Ferrous gluconate 300mg po tid must be taken 30 days prior to surgery in conjunction with EPO
- caution patients about the side effects of oral iron. (nausea, black stools)