

**Maine Medical Center  
Maine Transplant Program  
Policies and Procedures  
Anemia Management Policy**

**Background**

Adult transplant recipients managed by the Maine Transplant Program (MTP) who have received a kidney transplant, are not on dialysis and have been diagnosed with acute or chronic kidney disease may be anemic. In general, early post transplant anemia corrects within 12 weeks without need for specific intervention. Iron and erythropoietic stimulating agents (ESA) may be indicated for persistent severe anemia, control of anemia symptoms, reduce the risk of blood transfusion and therefore risk of allosensitization, allergic reactions and infection.

**Iron Therapy**

**Inclusion criteria:**

- Anemic patients with ferritin < 500 ng/mL/TSAT < 30% will receive one of the following therapies:
  - Oral Ferrous Sulphate 325mg 1 to 3 times daily
  - Iron sucrose 2-300mg in 250mL of 0.9% sodium chloride infused intravenously over 2 hours will be recommended as a first-line option.
  - IV iron may be given on consecutive days if desired. (Maximum of 300mg of iron sucrose per day)
  - Total loading dose goal for iron sucrose is 1000mg
- Patients who qualify for IV iron will be screened for active infection.
  - IV iron will not be administered to patients who have a significant active infection, e.g. fever, bacteremia, any infection requiring IV antibiotics, draining wounds, pneumonia, and cellulitis, even if on oral antibiotics.
  - IV iron may be given in the presence of minor infection, e.g. urinary tract infections requiring short-term (7-10 days) oral antibiotics.
- Patients with ferritin > 500 ng/mL or TSAT > 30% will not receive iron supplementation.

**Erythropoietin Stimulating Agent (ESA) Therapy**

**Inclusion Criteria**

The patient will qualify for erythropoietin stimulating agent (ESA) therapy if the following criteria are met for each patient group:

- Persistent Anemia with HgB<9g/dl
- eGFR<60mls/min

**Initial Evaluation**

- CBC
- Iron/TIBC/Ferritin

Consider checking the following if ESA resistance is encountered

- Reticulocyte count
- Consider checking:
  - Haptoglobin
  - Fecal occult blood
  - CRP

- Infection workup

### **Initiation and Maintenance of ESA**

- Darbepoetin alfa is the preferred ESA for anemia therapy at MMC.
- Initial dosing will be 0.45 mcg/kg rounded to closest syringe size
- MTP typically stocks 60 mcg and 100 mcg doses
- Dose increases will not occur more than once a month.

### **Laboratory monitoring and goals**

- Hgb or Hct - Must be obtained within 30 days of ESA therapy
  - Target Hgb value = 10 g/dL
  - Target Hct value = 33%
  - Must be checked at least monthly while on therapy
- Iron, total iron-binding capacity (TIBC), percent saturation (TSAT) and ferritin
  - Must be obtained when initiating ESA therapy unless results are available during the previous 2 months
- All patients receiving iron supplementation will have iron studies checked every 3 months.
- Blood pressure monitoring
  - If a patient has a systolic blood pressure reading >180 mmHg, the darbepoetin dose will be withheld

### **Transfusion**

#### ***Pre-transplantation***

Blood transfusions are to be avoided in patients who are potential transplant candidates in order to minimize the risk of allosensitization. This is especially important in multiparous women and those previously transplanted.

If a transfusion is absolutely required in order to prevent a life threatening complication, the patient will be informed that it may induce the formation of anti-HLA antibodies that in turn may delay or prevent transplantation in the future as well as negatively impacting rejection risk and graft survival.

#### ***Post-transplantation***

Anemia is a frequent sequela of transplantation, although blood transfusions are required infrequently. Transfusion post-transplant associates with risk of allosensitization, allergic reactions and risk of infection transmission. Therefore, transfusion is best avoided unless all conservative care options have been exhausted.

#### **Risk of CMV transmission:**

The serostatus of the donor and recipient will be ascertained before transplantation (*documented in the electronic medical record*). All patients at risk for the development of CMV infection and disease based on a positive donor or recipient CMV serology will receive prophylactic antiviral therapy. In the event such a patient requires a blood transfusion, determination of the blood donor's CMV status is NOT required as the recipient will be deemed to be adequately prophylaxed on their current anti-microbial therapy.

In the event that a seronegative recipient of a seronegative graft requires a blood transfusion, determination of the blood donor CMV status is required and CMV negative blood will be ordered to minimize the risk of CMV transmission. At Maine Medical Center, all blood is leucocyte filtered by policy which may in turn

further minimize the risk of transmission of such viral disease. There is no longer a role for irradiating blood prior to transfusion.

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