BCPRA Hemodialysis Anemia Management Protocol

The following protocol, on order of physician, transfers anemia management of hemodialysis patients to nonphysician staff (i.e. RNs and renal pharmacists). The following protocol is intended to serve as a guide and cannot replace clinical judgment. The recommendations included may be inappropriate for specific clinical situations (e.g. patients with hemochromatosis, thalassemia, PRCA, allergy to IV iron or an erythropoiesis stimulating agent (ESA), hx of stroke, active malignancy, hx of malignancy, etc.). The lowest ESA dosage to achieve acceptable Hgb range should be used. **Note: ESA refers to both epoetin alfa (Eprex®) and darbepoetin alfa (Aranesp®).**

Any change in Hgb greater than or equal to 15 g/L, OR if Hgb is less than 85 g/L OR if Hgb is greater than 139 g/L AND on ESA (or ESA on hold) ➔ Notify MD

- **Hgb 85 to 94 g/L**
  - Receiving ESA? NO
  - Receiving ESA? YES
  - Check that the iron studies have been appropriately monitored and addressed prior to increasing the dose.
  - No ESA required. Continue to monitor Hgb at the regular blood work cycle.
  - Maintain ESA dose and continue to monitor Hgb at the regular blood work cycle.
  - Consider starting ESA. Suggested initial dose: epoetin 100 units/kg/wk or darbepoetin 0.45 mcg/kg/wk. Obtain an order from MD to start anemia protocol.
  - If no dose increase in the past 5 weeks, increase ESA dose as per ESA Dosage Adjustment Tables.
  - If dose was increased in past 5 weeks, maintain that dose until next blood work cycle.
  - Notify MD if Hgb is not in target range after 3 consecutive dose increases. Refer to ESA Hyporesponsiveness Flowchart.

- **Hgb 95 to 115 g/L and stable**
  - Receiving ESA? NO
  - Receiving ESA? YES
  - ESA on hold or discontinued because Hgb above target
  - No ESA required. Continue to monitor Hgb at the regular blood work cycle.
  - Restart ESA at a reduced dose based on the dose before hold. Refer to protocol ESA Dosage Adjustment Tables.
  - If there has been no dosage reduction in the past 5 weeks, reduce ESA dosage as per protocol ESA Dosage Adjustment Tables.
  - If there have been dosage reductions in the past 5 weeks, maintain current dose.
  - Measure Hgb at the regular blood work cycle.

- **Hgb greater than 115 g/L**
  - Receiving ESA? NO
  - Receiving ESA? YES
  - ESA on hold or discontinued because Hgb above target
  - No ESA required.
  - Hold ESA
  - Measure Hgb in 2 weeks and reassess Hgb status and ESA dosage.
  - If Hgb is greater than 126 g/L after 12 weeks of hold, discontinue ESA.
  - If change is greater than 10 g/L from last hemoglobin, then resume ESA at reduced dose. Refer to protocol ESA Dosage Adjustment Tables.
  - If change is less than 10 g/L from last hemoglobin, then continue to hold ESA.
  - Continue to monitor Hgb at the regular blood work cycle.

AFTER Hgb STATUS ASSESSMENT ABOVE, ASSESS IRON STATUS. Refer to page 2 for ferrous fumarate or intravenous iron protocol.
If iron blood work appears unusual compared to previous results (e.g. replacement of iron stores, TSAT goes from less than 25% to greater than 49%) repeat the blood work before initiating next action.

Refer to current maintenance dose
- Sodium ferric gluconate (Ferrlecit®) 125 mg IV 2 times/month
- Iron dextran (DexIron®) 100 mg IV 2 times/month
- Iron sucrose (Venofer®) 100 mg IV 2 times/month

Measure TSAT and ferritin in 3 months and reassess iron dosage regimen.

If receiving maintenance iron: Continue current maintenance dose

If iron loading dose just completed: Start iron maintenance dose

If iron is currently on hold: Restart iron maintenance dose

If not on IV iron: Start IV iron maintenance dose (obtain MD order to start anemia protocol)

Measure TSAT and ferritin at next routine blood work cycle and reassess iron dosage regimen.

Note: Notify MD if iron indices remain high for 3 consecutive blood work cycles.

HOLD IRON

If TSAT is less than 22% and ferritin is greater than 1000 mcg/L, refer to MD for an assessment and iron management prescription

Do not start/continue IV iron loading dose if Hgb is greater than 115 g/L → give iron monthly maintenance dose

Note: No more than 3 courses of iron replacement may be administered in a row. Notify MD if iron indices remain low

Measure TSAT and ferritin one week after loading completed and reassess iron dosage regimen.

START IRON LOADING DOSE

TSAT less than 22%
REPLETE IRON STORES

TSAT 22% to 49%
MAINTAIN IRON STORES

TSAT greater than or equal to 50%
POSSIBLE IRON OVERLOAD

1 gram IV iron loading dose given as:
- Sodium ferric gluconate (Ferrlecit®) 125 mg IV every dialysis for 8 doses
- Iron dextran (DexIron®) 100 mg IV every dialysis for 10 doses
- Iron sucrose (Venofer®) 100 mg IV every dialysis for 10 doses

***If iron blood work appears unusual compared to previous results (e.g. replacement of iron stores, TSAT goes from less than 25% to greater than 49%) repeat the blood work before initiating next action.

BC Provincial Renal Agency • Anemia Management Protocol

Updated September 2014
The following tables provide guidance for most dosage adjustments. If a patient’s Hgb cannot be maintained within the desired range with 3 consecutive dose modifications using the dosage schedule below, contact a nephrologist or renal pharmacist for advice. If a patient’s erythropoiesis stimulating agent (ESA) dosage is not available in the tables below, please contact a nephrologist for ESA dosage modification. The lowest ESA dosage to maintain Hgb within acceptable range should be used.

**BCPRA ANEMIA MANAGEMENT PROTOCOL**

**ESA DOSING ADJUSTMENT TABLES**

Pre-filled syringes available for CKD patients include: 10 mcg, 20 mcg, 30 mcg, 40 mcg, 50 mcg, 60 mcg, 80 mcg, 100 mcg, 130 mcg and 150 mcg.

### Darbepoetin Alfa (Aranesp®) Dosage Adjustment Table

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<tr>
<th>Current Dose</th>
<th>Increase Dose</th>
<th>Decrease Dose</th>
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<td>10 mcg every 2 weeks</td>
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### Epoetin Alfa (Eprex®) Dosage Adjustment Table

Prefilled syringes available for CKD patients include: 1000 units, 2000 units, 3000 units, 4000 units, 5000 units, 6000 units, 8000 units and 10,000 units.

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