Anemia algorithm references

1. 2007 ASCO/ASH Clinical Practice guideline update on the use of epoetin and darbepoetin; *Blood* pre-published online Oct 22, 2007; DOI 10.1182/blood-2007-08-109488
2. Aranesp Canadian product monograph 2009
3. Eprex Canadian product monograph 2009

This algorithm developed by the following pharmacists: A. Granic & M. Abdallah (Grand River Regional Cancer Centre), T. McFarlane (Cambridge Memorial Hospital) and L. Sax & K. Levac (London Regional Cancer Program); November 2007. Revised May 2009. Endorsed by LRCP STPT, June 2009.
**Step 1. Initial Anemia Evaluation**
- Check Hb and Hb history.
- Symptom assessment.
- If MCV below normal; consider iron panel (serum iron, total iron binding capacity, serum ferritin).
- May need to initiate iron supplementation if ferritin <100µg/L, transferrin saturation <20%.
- May need transfusion and initiation of ESA therapy based upon symptoms and institutional guidelines.
- Important to look at transfusion history to assess hemoglobin changes.

**Step 2. ESA Indications**
- Hb<100g/L AND
- on myelosuppressive chemo\(^1,5,7\)
- **Warnings**
  - ESA use should be minimized in patients at high risk of thromboembolic events\(^1\).
  - Patients with uncontrolled HTN should not receive ESAs\(^2,3\).
  - If appropriate, RBC transfusion should be the preferred treatment in patients with a reasonable long life expectancy\(^2,3\).

**Step 3. Initial ESA Dose Options**
1. Darbepoetin 150 mcg SC weekly\(^4,6\)
2. Epoetin 40,000 units SC weekly\(^1,3\)
3. Darbepoetin 300 mcg SC q 2 weeks\(^4,6\)
4. Darbepoetin 500 mcg SC q 3 weeks\(^1,2\)

**Step 4. Monitor Hb & Titrate**
- Monitor Hb q 2-4 weeks or prior to each subsequent dose of ESA.
- Titrate ESA dose to Hb goal as per boxes at right in **red**, **green** and **blue**.

**Above Goal or Rapid Hb Rise**
- If Hb ≥120g/L, HOLD until Hb ≤110g/L then restart ESA at a reduced dose (see Figure 1) & monitor q 2-4 weeks.
- If Hb increase ≥10g/L in 2 weeks\(^1\), ≥15g/L in 3 weeks\(^2\) or Hb >110g/L\(^1\), **continue Tx but decrease dose** (see Figure 1) & monitor q 2-4 weeks.

**At Goal**
- Continue current ESA dosing.
- Monitor q 2-4 weeks.
- Titrate to maintain Hb goal.

**Below Goal**
- Continue current ESA dosing and monitor q 2-4 weeks. Titrate as needed to maintain Hb goal. See Figures 1 & 2

** Figure 1. Dose Decrease Options**
1. Decrease Darb 150 to 100 mcg SC weekly\(^4\)
2. Decrease Epo 40,000 to 30,000 units SC weekly\(^2\)
3. Decrease Darb 300 to 200 mcg SC q 2 weeks\(^4\)
4. Decrease Darb 500 mcg SC to 300 mcg q 3 weeks\(^2,4\)

** Figure 2. Dose Increase Options**
1. Increase Darb 150 to 300 mcg SC weekly
2. Increase Epo 40,000 to 60,000 units SC weekly\(^3\)
3. Increase Darb 300 to 500 mcg SC q 2 weeks
4. DO NOT Increase Darb 500 mcg dose if no response after 8 weeks\(^2\). Discontinue ESA.

**Tx Goals**
- Hb increase of at least 10g/L above baseline.
- **NOT TO EXCEED** Hb=120g/L\(^1,7\)