

Anemia algorithm references

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Anemia Algorithm for Erythropoietic Stimulating Agent (ESA) Use in Chemotherapy Induced Anemia

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 events¹.
- 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 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**.

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}

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 weeks¹, ≥15g/L in 3 weeks² or Hb >110g/L¹, **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.
- Discontinue ESA treatment 1-2 cycles after last given chemo⁷.

Below Goal

- If Hb increase <10g/L after 4-6 weeks of ESA therapy, **increase** ESA dose^{3,2}. See Figure 2

At Goal

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

Below Goal

- If Hb increases <10g/L after 6-8 weeks on higher dose, **discontinue** ESA¹.

Tx Goals

- Hb increase of at least 10g/L above baseline.
- **NOT TO EXCEED Hb=120g/L**^{1,7}

Figure 1. Dose Decrease Options

1. Decrease Darb 150 to 100 mcg SC weekly⁴
2. Decrease Epo 40,000 to 30,000 units SC weekly³
3. Decrease Darb 300 to 200 mcg SC q 2 weeks⁴
4. Decrease Darb 500 mcg 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 weekly³
3. Increase Darb 300 to 500 mcg SC q 2 weeks
4. DO NOT Increase Darb 500 mcg dose if no response after 8 weeks². Discontinue ESA.