

PRIMARY CARE - ANAEMIA MANAGEMENT IN CHRONIC KIDNEY DISEASE

A guide for GP management of anaemia of chronic kidney disease (CKD) treated with Erythropoietin (EPO).

PHARMAC CRITERIA FOR FUNDING ERYTHROPOIETIN:

Patient must have:

Hb ≤ 100g/L **AND** eGFR ≤ 30ml/min (non diabetic)
 OR eGFR ≤ 45ml/min (diabetic)
AND NO OTHER OBVIOUS CAUSE OF ANAEMIA

Other causes of anaemia such as iron, B12, folate deficiency and blood loss should be excluded prior to commencing EPO

PROCESS OF APPROVAL:

1. Fax relevant patient details to CCDHB Renal Service: 8060518
2. Nephrologist to apply for Special Authority
3. Anaemia Nurse will liaise with GP practice

PRACTICE GUIDELINES: Target Hb 100 – 120 g/L

Start EPO at 3000 U subcutaneously twice weekly

Weekly dose (IU)	Weekly frequency options
2000	2000 x1
3000	3000 x1
4000	2000 x2 / 4000 x1
5000	5000 x1
6000 (recommended starting dose)	3000 x2
8000	4000 x2
10000	5000 x2 / 10000 x1
12000	4000 x3 / 6000 x2
15000	5000 x3 / 10000 x1+5000 x1
18000	6000 x3

To adjust EPO dose:

- Hb < 100g/L: increase dose by 1 step
- Hb 100-120g/L: no change in EPO dose
- Hb > 120g/L: decrease dose by 1 step

NOTE: stop EPO if Hb >130g/L and restart at a lower step when Hb is below 120g/L.

Once target is achieved adjust maintenance dose to allow 1-2 x weekly dosing

MONITOR:

- **Monthly - Hb**
- 3 monthly - iron studies (ferritin and/or % iron saturation), blood pressure

SIDE EFFECTS / PRECAUTIONS WITH EPO:

- Modest rise in BP common, antihypertensive medication may need to be commenced or increased.
- Potential increase in cardiovascular morbidity/mortality at higher Hb targets.
- Headache, flu-like symptoms, seizures, thrombosis, pure red cell aplasia.

IRON DEFICIENCY IN CHRONIC KIDNEY DISEASE

Iron deficiency is common in CKD even in the absence of GI pathology and (untreated) is the commonest cause of a poor response to EPO. Monitoring relies on the combination of serum ferritin and % iron saturation (transferrin saturation) measurements.

Ferritin	% iron saturation	
<100 ng/mL	any	Absolute iron deficiency
<200 ng/mL OR	< 20%	Functional iron deficiency
>800 ng/mL	> 50%	Possible iron overload

Oral iron offers the benefits of simplicity, low cost and a good safety profile. However, in advanced renal failure (stages 4 and 5) many patients fail to respond to oral iron therapy and benefit from intravenous iron replacement:

- Indications = Ferritin < 100 or iron saturation < 20%, or Ferritin < 200 and not responding to EPO
- Contact the Renal Service with a referral on Fax 04 8060518. Pt will need to be booked for an intravenous iron infusion.

Request Nephrologist opinion if:

- Poor response to EPO, or not achieving target Hb on 12000 units weekly
- Cause or management of renal disease uncertain
- The patient might be a candidate for chronic dialysis in the future.

For further support contact the Renal Anaemia Specialty Clinical Nurse on 8060536 or Nephrologist on call 3855999