Waikato District Health Board

Guidelines: Primary Care Management: Anaemia in Chronic Kidney Disease

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Purpose

Erythropoietin (EPO) management programme led by General Practitioners (GPs), assisted by nephrologists and Anaemia Nurse Specialist for patients meeting *PHARMAC* criteria for EPO funding.

1. USE OF ERYTHROPOIETIN (EPO) IN CKD

Treatment of anaemia with EPO has been shown to improve functional status, improve quality of life, reduce hospitalisation and need for blood transfusions.

Process

1. Exclude common causes of anaemia

- B_{12} and folate deficiency
- Iron deficiency (iron studies: if ferritin < 20ug/L)

2. Check if fulfills *PHARMAC* funding criteria for EPO

- Hb ≤100g/L
- **AND** eGFR ≤45ml/min (with diabetes)
- **OR** eGFR ≤30ml/min (without diabetes)
- **AND** no other obvious cause of anaemia (e.g. blood loss, severe iron deficiency)

3. Complete application form www.waikatodhb.govt.nz/GP under primary care management guidelines – chronic kidney disease or from the Renal Service and fax to Anaemia Nurse Specialist (Fax 07 8398657)

- Renal physician will apply for special authority
- Anaemia nurse specialist will contact GP practice with approval number

4. GP and Practice Nurse

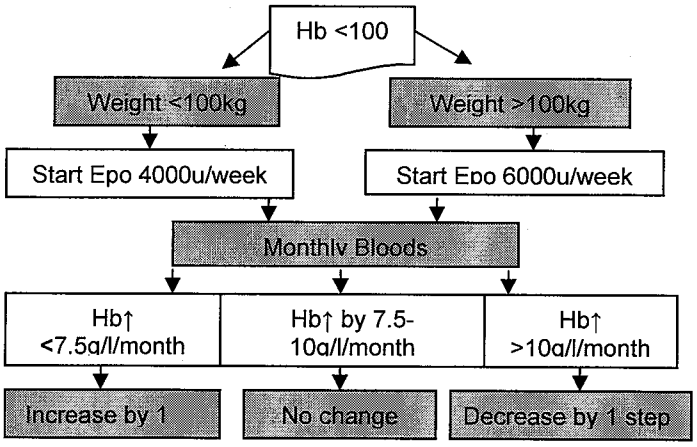
- Prescribe EPO
- Teaches patient to self-administer EPO (or Practice Nurse administers EPO)
- Monitors response and changes EPO dose accordingly

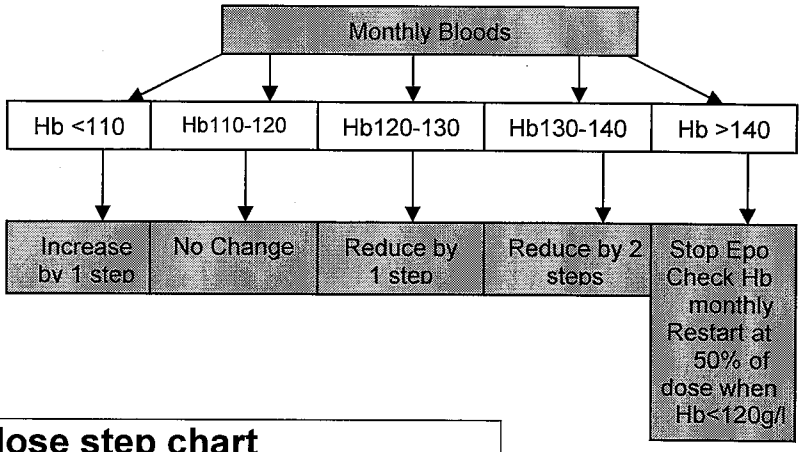
Precautions with EPO

- **Hypertension**
  - Check BP before starting – BP may increase with EPO
  - Withhold EPO if systolic BP >170mmHg or diastolic >100mmHg

Practical Guidelines for starting EPO

- Aim for a target haemoglobin of 110-120g/L
- Start ferrogradumet 325-975mg nocte (empty stomach)
- Start EPO according to flow diagram
- Aim for an increase of 7.5-10g/L/month until target is reached





Epo dose step chart

Weekly dose	Weekly frequency
1000 units	2000 units alternate weeks
2000 units	2000 units x1
3000 units	3000 units x1
4000 units	4000 units x1
6000 units	6000 units x1
8000 units	4000 units x2 weekly
10 000 units	10 000 units x1
12 000 units	6000 units x2 weekly
15 000 units	5000 units x3 weekly
18 000 units	6000 units x3 weekly
20 000 units	10 000 units x2 weekly
30 000 units	10 000 units x3 weekly

Monitoring

- Monthly CBC, U+E, renal function
- Iron studies 3-monthly (Serum Fe, Ferritin and transferrin saturation)
- Monthly blood pressure until Hb stable, then 3 monthly

2. *IRON DEFICIENCY IN CKD*

Iron deficiency is common in CKD and is one of the common causes for poor response to EPO.

- All patients get oral iron (ferrogradumet 325-975mg) unless ferritin >800
- Some patients may benefit from intravenous iron if:
  - Not tolerating oral iron and Ferritin ≤100 and saturation <20%
  - Ferritin ≤100 and saturation <20% despite oral iron
  - Ferritin ≤300, saturation < 20% and not responding to EPO
- Complete iv iron application form **www.waikatodhb.govt.nz/GP** under primary care management – chronic kidney disease and Fax to 07 839 8657 Att: Anaemia Nurse

When to contact Anaemia Nurse Specialist (Tel 07 839 8899 ext 6594 or fax 07 839 8657)

- If difficulty achieving target Hb
- To arrange an iron infusion

These guidelines are produced by R.L.Falconer,(Renal Anaemia Nurse)and Kim Wong, (Renal Physician) at Waikato DHB. Roche acts as a facilitator in distributing these guidelines.