MIDCENTRAL HEALTH

GUIDELINE

ANAEMIA MANAGEMENT IN CHRONIC KIDNEY DISEASE WITH ERYTHROPOIETIN THERAPY	
Applicable to: **MidCentral DHB & General Practice**	Issued by: **Renal Quality Group**
	Contact: **Anaemia Coordinator**

1. PURPOSE

To ensure safe and effective erythropoietin (EPO) therapy in patients with chronic kidney disease.

2. SCOPE

Applies to Medical Practitioners, Registered Nurses, and Pharmacists.

3. ROLES & RESPONSIBILITIES

Medical Practitioners:

- Prescribe correctly on Medication Chart/Prescription Form.

Registered Nurses:

- Appropriate Certification for both subcutenous and intravenous EPO therapy.
- Must be familiar with the drug to be administered and the side effects.

4. INDICATIONS

For the prevention and treatment of anaemia in patients with chronic kidney disease in order to achieve and maintain a target Haemoglobin concentration of 110-120g/L.

5. CONTRAINDICATIONS

Erythropoietin should not be prescribed/administered to patients presenting with any of the following:

- Hypertension (BP > 180/110 mmHg) at the time of administration
- Laboratory result of Hb >140g/L

6. ANAEMIA PROTOCOL

Eligibility:

1. Haemoglobin ≤100g/l
2. eGFR <30 ml/min/1.73m2 (non-diabetic), or eGFR<45 ml/min/1.73m2 (diabetic)
3. Iron Saturation >20%, or Ferritin >200
4. All other cause of anaemia excluded

© MidCentral District Health Board 2013. **CONTROLLED DOCUMENT.** The electronic version is the most up-to-date version. MDHB will NOT take any responsibility in case of any outdated paper copy being used and leading to any undesirable consequence.
Printed 4/06/2015 11:54:00 a.m.

Iron Deficiency:

1. If Iron Saturation <20% and Ferritin <200
   - Patients on Haemodialysis - Refer to the Repletion and Maintenance IV Iron Protocol
   - Patients not on Haemodialysis – Refer to the Renal Unit for IV Iron infusion
2. Investigate for cause of iron loss

Starting Dose:

Start Erythropoietin 4,000units subcut once weekly
Obtain baseline blood pressure reading.

Follow-up :

Measure haemoglobin **monthly** and Iron studies **3-monthly**
make adjustments as per Erythropoeitin dose steps

Target Haemoglobin: 110g/L – 120g/L

1. Haemoglobin > 120 g/l: **Decrease** erythropoietin dose by 1 step
2. Haemoglobin 110-120 g/l: **No change**
3. Haemoglobin < 110 g/l :

   a. Iron Saturation > 20% and Ferritin >200 : increase erythropoietin dose by 1 step
   b. Iron Saturation < 20% or Ferritin < 200 : refer to the Renal Unit for IV Iron Infusion

rHuEpo Dose Steps	rHuEpo dose (units)	Weekly frequency
1	0	Hold
2	1,000	2,000 subcut once fortnightly
3	2,000	2,000 subcut once weekly
4	3,000	3,000 subcut once weekly
5	4,000	4,000 subcut once weekly
6	6,000	6,000 subcut once weekly
7	8,000	8,000 subcut once weekly
8	10,000	10,000 subcut once a week
9	12,000	6,000 subcut twice weekly
10	16,000	8,000 subcut twice weekly
11	20,000	10,000 subcut twice weekly
12	24,000	8,000 subcut three times weekly
13	30,000	10,000 subcut three times weekly

Note:
- Withhold EPO if BP > 180/110mmHg at the time of administration and medical intervention required.
- Stop erythropoietin if Haemoglobin > 140g/L, check Hb monthly and restart at 50% of dose when Haemoglobin < 130g/L within 3 month.
- If erythropoietin is put on hold for 3 month or more, refer to the eligibility for initiation of erythropoietin when restart.

Monitoring:

- Monthly CBC
- Iron studies 3-monthly
- Blood pressure weekly for the first month (Non- dialysis patients)

Urgent medical assessment/intervention by treating physician if:

- Sudden decrease in Haemoglobin especially below 80g/L.
  (Evaluate possible cause, such as bleeding, and refer to appropriate service e.g. ED for blood transfusion and/or Gastroenterology for endoscopy.)

- Acute increase in blood pressure from the baseline.
  (Adjust medications as needed.)

Refer to Nephrologist or Anaemia Coordinator if:

- Not achieving target Haemoglobin on maximum dose (30,000u weekly)

★ Diagram of Anaemia Protocol

See Appendix 1

7. REFERENCES

- National Kidney Foundation (2001). K/DOQI clinical practice guidelines for anaemia of chronic kidney disease. AJKD, 37 (1), S182-S182.
- Brimble K. S. et al. (2003). Protocolized Anemia Management inHemodialysis Patients. *Journal of the American Society of Nephrology, 14:2654-2661.*
- Epoetin beta rch (recombinant human erythropoietin) Data Sheet.

8. RELATED MDHB DOCUMENTS

MDHB-58	Subcutaneous Injection (Adult & Paediatric)
MDHB-1011	Preparation and Administration of Intravenous Medications [Procedure]
MDHB–8	Administration of Medicine [Policy]
MDHB-11	Administration of Medicines [Procedure]

9. APPENDICES

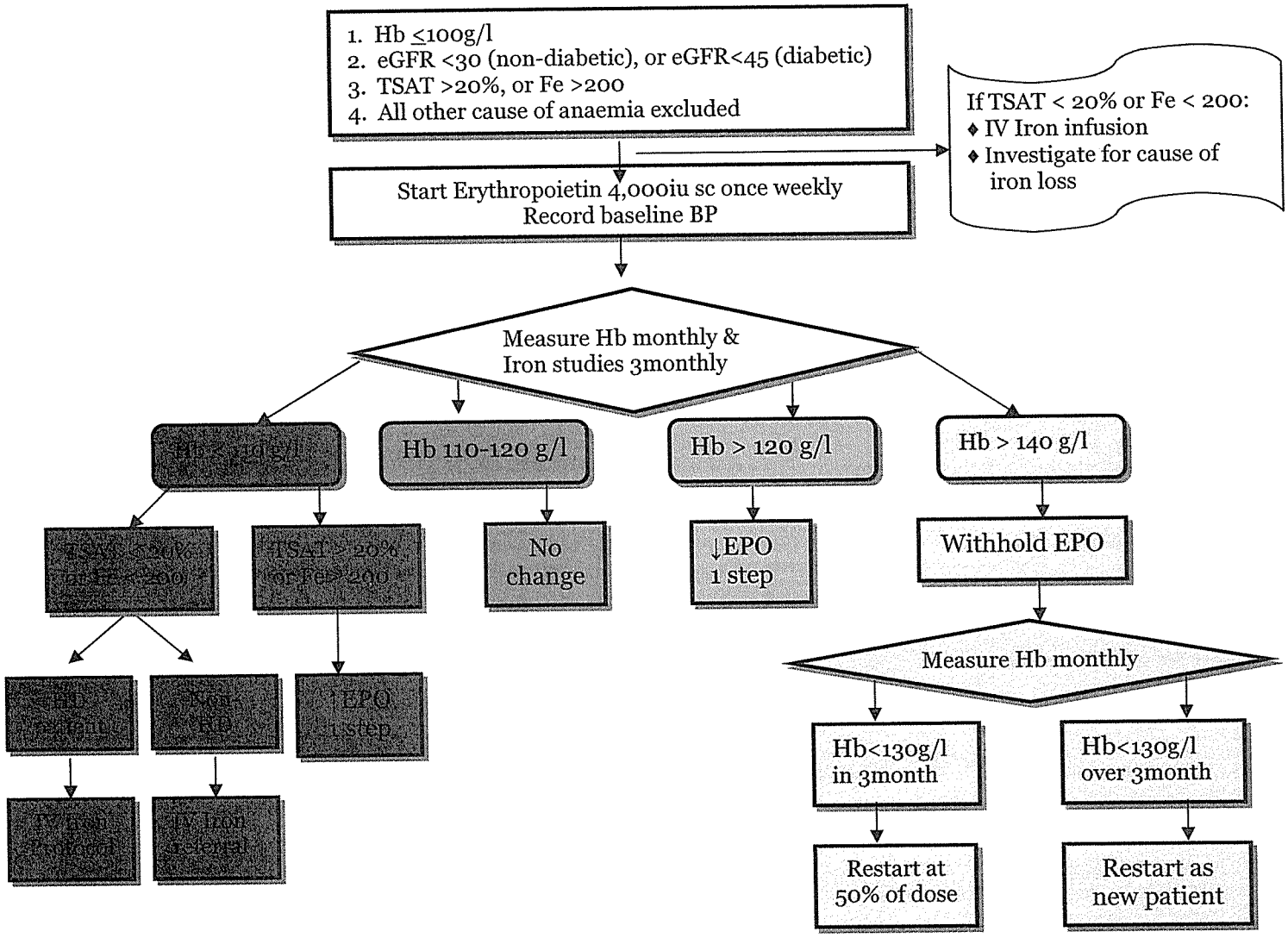
Appendix 1: Anaemia Protocol

10. KEYWORDS

Anaemia, Erythropoietin.

Appendix 1

Diagram of Anaemia Protocol



(Note: Withhold EPO if BP >180/110 at the time of administration & medical intervention required.)

EPO Dose Steps	EPO dose (units)	Weekly frequency
1	0	Hold
2	1,000	2,000 fortnightly
3	2,000	2,000 × 1
4	3,000	3,000 × 1
5	4,000	4,000 × 1
6	6,000	6,000 × 1
7	8,000	8,000 × 1
8	10,000	10,000 × 1
9	12,000	6,000 × 2
10	16,000	8,000 × 2
11	20,000	10,000 × 2
12	24,000	8,000 × 3
13	30,000	10,000 × 3