

Standard Operating Procedure
Comprehensive Management of Hemodialysis Patients
Special Region (1)
Union of Myanmar

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Applied by: Internal Medicine

1. Purpose

To standardize management of hemodialysis patients including adequacy, hypertension, anemia, fluid, mineral balance, and education.

2. Definition

Hemodialysis is a renal replacement therapy removing toxins, electrolytes, and fluid.

3. Dialysis Adequacy

Frequency: 3 sessions/week (preferred), minimum 2/week

Duration: ~4 hours/session

Targets: Kt/V ≥ 1.2 , URR $\geq 65\%$

4. Fluid Management

Dry weight optimization

UF rate <10–13 mL/kg/hr

Avoid >3–4L removal/session

IDWG <2–2.5 kg

5. Hypertension Management

Control volume first

Drugs: Amlodipine, Beta-blockers, ACEi/ARB (caution)

Management of anti-Hypertensive drug for the day of hemodialysis

Drug Class	Dialysis Day Plan
ACEi / ARB	✗ Withhold (morning dose)
Short-acting agents	✗ Withhold
Diuretics (anuric)	✗ Withhold
Beta-blockers	✓ Continue if cardiac indication and withhold if frequent intradialytic hypotension
Amlodipine	✓ Continue
Methyl dopa	✓ Continue if stable BP or no intradialytic hypotension

6. Anemia Management

Target Hb 10–11.5 g/dL

- Blood transfusion: if Hb 7 g%
- Iron therapy: use IV iron for iron deficiency anemia

Indication for IV iron therapy

Ferritin	TSAT	Ret-He	Interpretation	Action
<200	<20%	Low	Absolute deficiency	✓ IV iron
≥200	<20%	Low	Functional deficiency	✓ IV iron
≥200	≥20%	Low	Early deficiency	⚠ Consider IV iron
≥200	≥20%	Normal	Adequate iron	✗ No iron
>800	Any	Any	Possible overload	✗ Avoid

Dose of IV iron therapy

IV iron therapy is more preferable to oral iron therapy .

IV iron sucrose is only available IV iron therapy.

Dosage of IV iron in hemodialytic patient

IV Iron Preparation	Loading Dose (Repletion)	Frequency	Total Dose	Maintenance Dose	Key Notes
Iron sucrose (Mostly available)	100 mg IV	2–3×/week during HD	1,000 mg	100 mg every 2–4 weeks	Safest, widely used
	200 mg IV	Weekly × 5 doses	1,000 mg	100 mg monthly	Faster repletion option
Ferric carboxymaltose	500–1,000 mg IV	Single or 2 doses	1,000–1,500 mg	Repeat every 1–3 months	Expensive, rapid

Administration of IV iron sucrose

Dose	Dilution	Administration rate
100 mg	Dilute in 100 mL Normal Saline (0.9% NaCl)	15 -30 minutes
200 mg	Dilute in 100–200 mL Normal Saline	30-60 minutes

- ESA: epoetin alpha or beta or darbepoetin

Dose of epoetin alpha or darbepoetin

Parameter	Epoetin Alfa (EPO)	Darbepoetin Alfa
Type	Short-acting ESA	Long-acting ESA
Route	IV (preferred in HD)	IV or SC
Starting dose	50–100 IU/kg	0.45 mcg/kg/week
Frequency	2–3× per week	Once weekly OR every 2 weeks
Typical adult dose	4,000–10,000 IU/week	20–40 mcg/week
Dose adjustment interval	Every 2–4 weeks	Every 2–4 weeks
Onset of Hb rise	2–4 weeks	2–4 weeks

7. Calcium & Phosphate

Target serum Phosphate - 3.5–5.5 mg/dL

Use phosphate binders (CaCO₃) or sevelamer if hyperphosphatemia+

	Started dose	Maximum dose	Phosphate binding capacity
Calcium bicarbonate 1250 mg (~elemental calcium 500 mg)	Elemental calcium 500 mg TDS with meal	Elemental calcium 2000 mg per day	Elemental calcium 500 mg can bind 30-45 mg of phosphate.
Sevelamer	800 -1600 mg TDS with meal	7,200–14,400 mg/day	800 mg of sevelamer can bind 20-30 mg of phosphate

Give Vit D if deficient

8. Dialysis Machine

Diffusion and ultrafiltration

Monitor BP, complications

9. Patient Education

Fluid restriction, diet, compliance, fistula care

10. Monitoring

Hb monthly, Ca/PO₄ monthly, PTH 3–6 monthly (if affordable or available)

Seen by Physician - 2 weekly

11. References

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7. International Society of Nephrology (ISN). Global Kidney Health Atlas. Brussels: ISN; 2019.
8. World Health Organization (WHO). Global Health Estimates and Chronic Kidney Disease Burden Report. Geneva: WHO; 2018.