

Standard Operating Procedure

Management of Hypoglycemia

Special Region (1)

Union of Myanmar

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Approved by : Internal Medicine Unit

1. Purpose

To provide a standardized protocol for recognition, classification, and management of hypoglycemia.

2. Definition

Level 1: <70 mg/dL

Level 2: <54 mg/dL

Level 3: Severe with altered consciousness

3. Causes

Category	Specific Causes
Drug-induced (Most common)	Insulin overdose Sulfonylureas (e.g., glipalamide) Other drugs (quinolones, beta-blockers) Alcohol
Critical illness	Sepsis Renal failure Liver failure Cardiac failure
Endocrine disorders	Adrenal insufficiency Hypopituitarism
Nutritional causes	Starvation / fasting Malnutrition
Reactive (postprandial)	Post-bariatric surgery Early diabetes
Hyperinsulinemic states	Insulinoma Factitious (exogenous insulin)
Pregnancy-related	Increased glucose utilization
Infections (non-sepsis)	Severe malaria, chronic infection

4. Clinical features

Category	Symptoms / Signs
Autonomic (Adrenergic)	Sweating (diaphoresis) Tremor Palpitations Anxiety / nervousness Hunger Paraesthesia
Neuroglycopenic	Confusion Drowsiness Behavioral changes Slurred speech Visual disturbance Incoordination Seizures Coma
Severe / Advanced	Focal neurological deficits Hypothermia Bradycardia (rare)
Nocturnal Hypoglycaemia	Night sweats Nightmares Morning headache Unexplained fatigue
Hypoglycaemia Unawareness	Absence of warning symptoms Sudden neuroglycopenia

5. Initial Assessment

ABC approach + immediate glucose check

6. Management

Generally, management of hypoglycemia is to treat hypoglycemia first and then correct the underlying conditions causing hypoglycemia.

Management for hypoglycemia

- Conscious: 15–20 g glucose orally, repeat in 15 min
- Glucose tablets (preferred)

- Sugar solution (3 teaspoons sugar in water)
- Fruit juice (150–200 mL)
- Unconscious:
- IV: 25 g glucose (50 mL D50 or 100 mL 25 % dextrose)
- Infusion: 10% Dextrose

7. Refractory / Recurrent Hypoglycaemia

- Start continuous dextrose infusion (D10–D20)
 - Frequent glucose monitoring
- Consider:
- Sulfonylurea → give octreotide 50–100 mcg SC 6–12 hourly
 - Sepsis → treat infection
 - Adrenal insufficiency → give hydrocortisone

8. Monitoring

Glucose every 15 min until stable, then hourly for 4-6 hours

9. Special Situations

9.1 Insulin induced hypoglycaemia

For premixed insulin users

Situation	Action on Insulin Dose	Clinical Notes
Mild hypoglycaemia (missed meal / delay)	Reduce next dose by 10–20%	Most common scenario
Recurrent hypoglycaemia	Reduce total daily dose by 20–30%	Review diet timing
Hypoglycaemia before meal (pre-breakfast or pre-dinner)	Reduce preceding dose (evening or morning dose)	Key concept: <i>problem lies in previous dose</i>
Nocturnal hypoglycaemia	Reduce evening dose by 20–30%	Consider bedtime snack
Severe hypoglycaemia (requiring IV glucose)	Stop temporarily → restart at 70–80% of previous dose	Admit if unclear cause
Irregular eating pattern	Consider switch to basal-bolus regimen	Common in elderly

For long-acting insulin users (Basal: Glargine, Detemir, Degludec)

Situation	Action on Insulin Dose	Clinical Notes
Mild hypoglycaemia	Reduce basal dose by 10–20%	Adjust gradually
Recurrent hypoglycaemia	Reduce basal by 20–30%	Check fasting glucose trend
Fasting (early morning) hypoglycaemia	Reduce basal insulin	Very important clue
Nocturnal hypoglycaemia	Reduce basal by 20–30%	Consider CGM if available
Severe hypoglycaemia	Hold temporarily → restart at 70–80% dose	Reassess cause
Renal failure / elderly	Reduce dose further	High risk group

9.2 Sulfonylurea-induced hypoglycaemia

- High risk of recurrence
- Admit for ≥24 hours
- Use octreotide 50–100 mcg SC , repeat after 6-12 hours

9.3 Alcohol-related hypoglycaemia

- Give thiamine 100 mg IV BEFORE glucose

9.4 Renal failure

- Reduced insulin clearance → adjust doses

9.5 Pregnancy

- Maintain glucose >70 mg/dL
- Avoid prolonged hypoglycaemia

10. Prevention

Education, medication review

11. Discharge Criteria

Stable glucose, cause identified

12. References

1. American Diabetes Association. Standards of Care in Diabetes—2025. *Diabetes Care*. 2025;48(Suppl 1):S1–S350.
2. Joint British Diabetes Societies for Inpatient Care (JBDS-IP). The Hospital Management of Hypoglycaemia in Adults with Diabetes Mellitus. Updated 2023.
3. International Hypoglycaemia Study Group. Glucose concentrations of less than 3.0 mmol/L (54 mg/dL) should be reported in clinical trials. *Diabetes Care*. 2017;40(1):155–157.
4. Cryer PE. Hypoglycemia in Diabetes: Pathophysiology, Prevalence, and Prevention. 3rd ed. Alexandria (VA): American Diabetes Association; 2016.
5. Cryer PE. Mechanisms of hypoglycemia-associated autonomic failure in diabetes. *N Engl J Med*. 2013;369(4):362–372.
6. Seaquist ER, Anderson J, Childs B, et al. Hypoglycemia and diabetes: a report of a workgroup of the American Diabetes Association and the Endocrine Society. *Diabetes Care*. 2013;36(5):1384–1395.
7. Frier BM. Hypoglycaemia in diabetes mellitus: epidemiology and clinical implications. *Nat Rev Endocrinol*. 2014;10(12):711–722.
8. Kalra S, Mukherjee JJ, Venkataraman S, et al. Hypoglycemia: The neglected complication. *Indian J Endocrinol Metab*. 2013;17(5):819–834.
9. Service FJ. Hypoglycemic disorders. *N Engl J Med*. 1995;332(17):1144–1152