

STANDARD TREATMENT WORKFLOW (STW)

Diabetes Mellitus Type 1

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CITATION

Bhansali A, Bhatia E, Ganpathi B, Kotwal N, Rajput R, Goswami R, Choudhary S, Mohan V. Diabetes Mellitus Type 1. Journal of the Epidemiology Foundation of India. 2024;2(1Suppl):S107-S108.

DOI: <https://doi.org/10.56450/JEFI.2024.v2i1Suppl.054>

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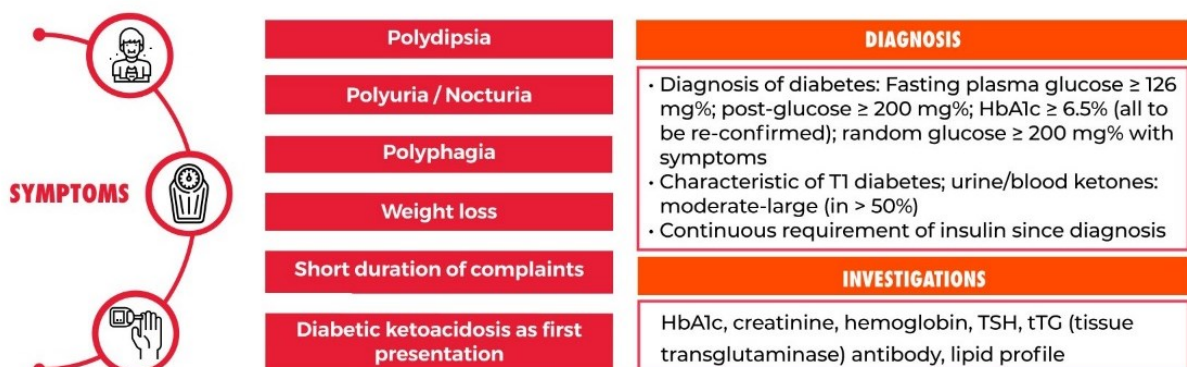


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Standard Treatment Workflow (STW)

DIABETES MELLITUS TYPE 1

ICD-10-E10



AMBULATORY MANAGEMENT

NUTRITION

Calories should be appropriate to the

REGULAR EXERCISE

Non-strenuous

SMBG

Check before each meal and at bedtime

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DIABETES MELLITUS TYPE 1
ICD-10-E10

SYMPTOMS

Polydipsia	DIAGNOSIS
Polyuria / Nocturia	
Polyphagia	
Weight loss	
Short duration of complaints	
Diabetic ketoacidosis as first presentation	

DIAGNOSIS

- Diagnosis of diabetes: Fasting plasma glucose ≥ 126 mg%; post-glucose ≥ 200 mg%; HbA1c $\geq 6.5\%$ (all to be re-confirmed); random glucose ≥ 200 mg% with symptoms
- Characteristic of T1 diabetes; urine/blood ketones: moderate-large (in $> 50\%$)
- Continuous requirement of insulin since diagnosis

INVESTIGATIONS

HbA1c, creatinine, hemoglobin, TSH, tTG (tissue transglutaminase) antibody, lipid profile

AMBULATORY MANAGEMENT

<p>NUTRITION</p> <ul style="list-style-type: none"> Calories should be appropriate to the expected body weight, pubertal status, activity Balanced diet including all food groups Simple sugars and excessive fats to be avoided Meals/snacks to be individualized and reflect insulin schedule (usually 3 meals, 2 snacks) 	<p>REGULAR EXERCISE</p> <ul style="list-style-type: none"> Beneficial and should be encouraged <p>EDUCATION</p> <ul style="list-style-type: none"> Emphasize diabetes related education to patient and caregivers 	<p>SMBG</p> <ul style="list-style-type: none"> Check before each meal and at bedtime Should be checked more frequently in case A1c is not controlled, frequent hypoglycemia Glucose at midnight (12.00-2.00 am) occasionally to rule out nocturnal hypoglycemia Ketones should be checked if blood glucose is > 250 mg/dl <p>TARGET</p> <ul style="list-style-type: none"> Pre-meal 80-130 mg% 2 hours post-meal: 120-180 mg%
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INSULIN TREATMENT

<p>Insulin administration (0.25 to 1.0U/kg depending on age and pubertal status)</p>	<p style="text-align: center;">Basal and bolus regimen</p> <ul style="list-style-type: none"> Basal: glargine or detemir or NPH 40-50% of daily requirement Bolus: regular or rapid acting 50% of daily requirement/3 injections before each meal 	<p>Insulin doses can be adjusted depending upon</p> <ol style="list-style-type: none"> 1. Pre-meal and post-meal glucose level 2. Carbohydrates in the meal 3. Exercise pattern
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REASONS FOR REFERRAL TO HIGHER CENTRES

Uncontrolled hyperglycemia	For education of patient & family For insulin injection techniques/SBGM/ identifying hypoglycemia s/s	Recurrent hypoglycemia	Severe diabetic ketoacidosis (altered sensorium, rapid breathing)	Chronic diabetes specific complications
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MONITORING

<p>AT EVERY VISIT</p> <ul style="list-style-type: none"> Growth & pubertal development (for children and adolescents) Dietary and medication compliance BP, Weight monitoring Insulin site and injection technique Review SMBG record Hypoglycemia 	<p>EVERY THREE MONTHS</p> <ul style="list-style-type: none"> Glycated hemoglobin (HbA1c) Target: $< 7\%$ (should be individualized) 	<p>COMPLICATIONS & COMORBIDITIES (5 YEARS AFTER DIAGNOSIS, THEN ANNUALLY)</p> <ul style="list-style-type: none"> Fundus examination (Retinopathy) Foot examination (Neuropathy) Urine albumin/creatinine ratio Other investigations (S-creatinine, TSH), lipid profile
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SICK DAY RULES /DKA

IN CASE OF SICKNESS / INFECTION

- Measure glucose frequently, check for urine ketones if glucose > 250 mg%
- Drink plenty of fluids, monitor urine output
- Eat small light meals 4-5 times/day
- In addition to usual insulin doses, take extra regular insulin s.c. every 6 hourly (10-15% of total daily insulin dose)
- If glucose not falling, excess vomiting, low urine output, high or rising ketone, admit the patient

DKA MANAGEMENT

- As per STW on Diabetic Ketoacidosis (DKA)

HYPOGLYCAEMIA

- Symptoms and signs:** Sweating, hunger, tremors, irritability, weakness, drowsiness / seizures / unconsciousness (late stage)
- Diagnosis:** Mild / moderate: glucose < 70 mg% with or without symptoms
- Severe hypoglycemia:** coma / seizures / inability to treat oneself
- Treatment:** If glucose < 70 mg% take 3 tsf glucose powder or sugar; if severe: caregiver should give inj. glucagon 1 mg s.c./ i.m. OTHERWISE IMMEDIATELY take to hospital for intravenous glucose injection (1-2 ml/kg of 25% dextrose)
- Prevention:** Identify mismatch of food, exercise, insulin

ABBREVIATIONS**REFERENCES****KEEP A HIGH THRESHOLD FOR INVASIVE PROCEDURES**