Case study on Type 1 Diabetes mellitus

Presented By:

Mrs. Vijayalakshmi

“Managing diabetes is about small, consistent choices – one step at a time towards a healthier life”

Objectives of Case Study Presentation

To share clinical experience and enhance knowledge about Type 1 Diabetes Mellitus.

To understand assessment and management strategies for type 1 diabetic patients.

To identify complications and recommend managerial measures in terms of diet and exercise.

Introduction

TID is an autoimmune disease where the body attacks its insulin-producing cells in the pancreas, leading to insulin deficiency causing blood sugar levels to rise and is a chronic condition requires life long management.

Incidence and Prevalence of DM

Globally: Approximately 9.5 million people live with type 1diabetes, around 1.85 of these individuals are under 20 years old. Incidence is rising with about 5,00000 new diagnosis occurring each year. While prevalence varies by region, rates are highest Northern Europe and lowest in place like China and Venezuela.

In India: Rising g with TID

idence of Type 1 Diabetes, with the highest number of children . An estimated 1,00000 new cases are detected each year among children under 15years, and the overall incidence is around 10.5 per 1,00000 people per year, peaking between ages 10-12 years. By June 2024, 860,423 People are living with TID

Patient Information

Name: Mr. X

Age: 63 years

Gender: Male

Date of Admission: 07/11/2025

Date of Discharge: 13/11/2025

Chief Complaints: Dizziness for 3 days, weakness for 3 days

Present and Past Health History

Present : Patient has history of HTN for 6 months, under medication
Amlodipine 5mg OD)
Diabetes under insulin therapy
Feeling of weakness, difficult to walk for 3days

Past health history:

Patient was a known case of hypertension for 6 month

He had CVA before 6 months

He got weakness of right limbs after CVA

No history of any surgical illness

No history of food and drugs allergy

Environmental history

Type of family -Nuclear

Type of house - Paka house

No of rooms - 4

Kitchen - separate

Fuel using - Gas

Drinking water - Tap water

Drainage system - closed drainage

Family history

No history of hypertension, diabetes, TB and asthma in family

Scio economic history

Middle class family

Personal and Social History

Diet: 3 times a day/ non vegetarian

Sleep: 8 hours at night

Bowel and bladder: Normal pattern, polyuria present.

Smoking: No history

Alcohol: Occasional drinker.

Physical activity: Sedentary lifestyle.

Physical Examination

General Appearance

Gait : Uncoordinated

Body built : Moderate

Consciousness : Conscious and alert

Facial expression : Anxious

Vital Signs

Temperature: 98.6°F

Pulse: 86 bpm (regular)

Respiration: 18/min

Blood Pressure: 140/90 mmHg

Inspection: Mild pedal oedema present; no cyanosis
or pallor.
Skin: Dry and scaly over lower limbs.

Skin and Extremities

Skin dry and scaly, especially over lower limbs

No cyanosis or pallor.

Systemic Examination

Cardiovascular system

Inspection: normal shape

Palpation : Non tender

Auscultation :No murmur in all areas

Central Nervous System (CNS)

Higher mental function is adequate

Motor examination - Uncoordinated gait

Weak muscle power in right limb

Musculoskeletal System

Normal muscle tone and strength.

No deformities, joint stiffness, or limitation of movement.

EYE

Redness of the eye lid, Complains of blurred vision

No pain and discharge noted.

NOSE

No discharge , bleeding

Mouth

Missing teeth and dental caries

Neck

No enlarged lymph nodes and thyroid gland, normal neck mobility is present.

ntegumentary System

Skin dry and scaly, especially over the lower limbs.

Mild pedal edema present.

No active ulcers

Capillary refill delayed in toes, indicating poor peripheral circulation.

No cyanosis or pallor observed.

Musculoskeletal System

- Weak muscle power in right limb
- Uncoordinated gait , no deformities or joint stiffness.
- Occasional leg cramps and feeling of heaviness after walking long distances.
- No limitation of movement or tenderness noted

Gastrointestinal system

Inspection: No distention, and dilated superficial veins

Palpation: No tender

Liver – Normal

Spleen – Normal

Percussion : Dullness present

Auscultation : Normal bowel sounds

Renal System

Urine output: adequate (average 1800 ml/day).

Urine examination: sugar +++, albumin trace.

Serum creatinine: 1.0 mg/dl

No flank pain or tenderness.

Investigations:

Haematological :

RBS - 210mg/dl

Sodium- 139mg/dl

Potassium - 4.6mg/dl

Creatinine – 1.0mg/dl

Blood urea – 21mg/dl

Urine analysis:

Colour – light yellow

Reaction – acidic

Albumin – nil

Sugar – trace

Transparency – clear

Puss cells – 0-2/HPF

Epithelial cells – 0-2HPF

Complications:

Diabetic Neuropathy

Diabetic Retinopathy

Diabetic nephropathy

Susceptibility to infections

Arteriosclerosis (hardening of the arteries)

Treatment:

Medical Management:

Injection : Human insulin – 30 Units BD

Amlod – 5mg OD

Nursing care:

Nursing Interventions:

- Monitor blood glucose, BP, and weight regularly.
- Educate about foot care and skin care.
- Encourage patient to take low carbohydrate and fat containing diet.
- Teach about the importance of regular exercise.
- Observe for signs of hypoglycemia.
- Provide emotional support and motivation.

Health teaching

Exercise:

Good exercise can help to control blood sugar level . Need to adjust insulin dose according to the amount of exercise , as too much insulin and exercise may lower blood sugar level.

Oral medication:

Oral medications lower the blood sugar level by increasing the insulin. These drugs are called hypoglycaemic tablets. They will not be effective unless they are combined with dietary restrictions.

nsulin therapy:

nsulin therapy is main treatment for type 1 DM, main aim of this is to control the amount of insulin in the blood stream so that glucose levels re normal .

As well self injection of insulin every day, also checking blood sugar evel every day to ensure right dose of insulin.

Diet:


10 Diabetes Superfoods for Your Meal Plan
Dark Green Vegetables - Low in calories & carbohydrate
Whole Grains - Magnesium, chromium, omega 3 fatty acids, folate, fiber and potassium.
Beans - High in fiber, good sources of magnesium and potassium
Fat-free Milk and Yogurt Calcium & vitamin D
Sweet Potatoes - lower G potatoes alternative
Nuts - Healthy fats & appetite suppressant
Citrus - Your daily soluble fiber and vitamin C
Tomato - Provides vital nutrients such as iron & Vitamin C & E
Fish such as Salmon, high in Omega-3
Berries - Packed with antioxidants, vitamins and fiber

Conclusion

Management of TID involves a combination of insulin therapy, diligent blood sugar monitoring, and healthy life style, with treatment constantly advancing through technology. TID often caused by autoimmunity where our immune cells destroy pancreas hence it cannot produce enough insulin to manage glucose levels. In some cases environmental factors like viral infection, deficiency of Vit-D and some pollutants may trigger the autoimmune response.

ven genetic factors like HLA (human leukocyte antigen) genes may edispose the TID but having at least 1 HLA gene variant does not arantee a person will develop type 1 diabetes. Presence of this is edisposition, and other factors will get involved for disease. As it is ajorly caused by immune response therefore it cannot be prevented t can be well managed with regular glucose checking, insulin therapy, ercise, diet. There are ongoing researches on it's prevention with ccination

Diabetes is not the end, but the start of new, healthy way of living"


Thank You