

## Diabetes Mellitus: A Case Study

**Ain Q and Sadeeqa S\***

Institute of Pharmacy, Lahore College for Women University, Lahore, Pakistan

**\*Corresponding Author:** Saleha Sadeeqa, PhD Clinical Pharmacy, Assistant Professor, Institute of Pharmacy, Lahore College for Women University, Lahore, Pakistan, Email: salehasadeeqa@gmail.com

### Case Report

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### Abstract

Diabetes mellitus, is a group of metabolic disorders that leads to high blood glucose level, resulting in excessive urination, increased thirst, blurred vision, tingling, sweating and many other symptoms. Acute conditions include diabetic ketoacidosis and nonketotic hyper osmolar coma while long term condition results in stroke, kidney failure, cardiovascular disease.

**Keywords:** Diabetes mellitus; Symptoms and Management

### Introduction

Diabetes mellitus is a group of metabolic disorders which results in high blood glucose level for a long period resulting from defect in insulin production, insulin action or both [1]. WHO ranked Pakistan at 7th on diabetes prevalence list [2]. Recent view on the occurrence has

shown that about more than 4.7 million people suffering from diabetes [3]. Diabetes symptoms are excessive thirst, frequent urination, sweating, blurred vision, sudden weight loss, fatigue and slow healing sores. Mostly patient with diabetes suffer from polydipsia, polyphagia and polyuria [4]. Diabetes is majorly of 3 types, type I, type II and gestational diabetes [5].

Type 1 diabetes	Type II diabetes
Cell producing insulin are destroyed	Blood glucose increases due to lack of insulin production less insulin action (resistance)
Commonly detected before the age of 30 years	Commonly detected after the age of 40

Table: Type I, type II and gestational diabetes.

Gestational diabetes only occur during pregnancy. Hormonal changes influence insulin which cause ineffective insulin production, resulting in raised blood glucose level and that high glucose level effects embryo [6].

For Type I diabetes different types of insulin work at different pace, and the effects last a different duration. Insulin can be used in a number of ways. Common choice include a needle and syringe, insulin pen, or insulin pump. Some people who have issue in reaching their blood

glucose targets with insulin alone, need to take another type of diabetic medicine that works with insulin, such as pramlintide [7]. For Type II diabetes different pills and oral medicines are used. Six classes are used for oral diabetic medicines [8].

### Case Presentation

A 54 year old female, house wife visited Services Hospital Lahore with the complaints of excessive urination, sudden weight loss, blurred vision, increased thirst, fatigue and excessive sweating. She was experiencing these conditions from last one month.

### Past Medical History

Patient was also suffering from Hypertension from last 3 years.

### Past Medication History

She was using Tenormin (Atenolol) 50mg OD from last 3 year

### General Examination

Weight: 70kg  
Height: 5 foot 2 inches  
BMI: 32.01kg/m<sup>2</sup>  
Physical activity: daily work routine home

### Special Investigation

According to the reported symptoms, patient's blood glucose level was monitored. At that time patient's random blood glucose level was 196mg/dl which was beyond the normal range of the random blood glucose level (>140mg/dl). Patient was also said to monitor her fasting glucose level that was 134mg/dl which was also beyond the normal range (70-100mg/dl).

### Treatment

Neodipar-250mg BD  
(Neodipar is brand and its salt is Metformin HCL)

### Interventions

Drug should be taken about 5 -10 minutes before the meal.

Instead of eating a lot at 3 meals, divide total intake in 5 meals.

Drug interaction was checked, no interaction was present b/w Atenolol and Metformin.

Suggest patient to check HbA1C Level after about every 3rd month

### Care Plan

Proper diet ---low sugar intake  
Exercise and walk to reduce body weight  
High fiber diet less intake of fats and carbohydrates

### Outcome

Patient used the suggested medicine Neodipar twice a day after using medicine the blood glucose level of the patient was monitored.

Fasting = 104mg/dl

After meal = 140mg/dl

Patient was advised to visit hospital if she suffers any side effect in future or, if her symptoms not properly treated.

### Discussion

Patient suffering from diabetes due to many reasons, included less production of the insulin by beta cells of the Pancreas or resistance of body against insulin, a major reason of diabetes is genetics, majority of diabetic patient suffering from type 2 diabetes due to their genetics and family history. If this condition is not properly treated or is for long term it results in cardiovascular disease, shock, permanent damage to eye and chronic kidney disease. Diabetic patient should properly manage his/her daily dietary intake because if patient is taking oral hypoglycemic agents as medication and not taking diet according to body need then he/she may suffer from hypoglycemic state that can be more dangerous than the hyperglycemia. Small meals should be taken 4 to 5 time in a day instead of eating a lot at single time. Insulin or other hypoglycemic agents should always be taken before 10 minutes of taking meal, because medicine or external source of insulin will trigger the beta cells of the body to produce insulin inside the body according to need of body. Diabetic condition can also be treated by non - pharmacological method as by doing exercise, by stopping intake of high sugar content food.

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