

Case Report

SAFE DELIVERY TO A HEALTHY BABY BY A TYPE II DIABETIC FOR LAST 14 YEARS

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ABSTRACT

Diabetes Mellitus (DM) is a chronic disease affecting millions of people worldwide. If left uncontrolled, it may lead to several life threatening complications like eye and kidney damage. However, if controlled properly, a diabetic patient can lead a normal life. Diabetes during pregnancy (also called as Gestational Diabetes Mellitus) should be monitored properly to prevent maternal and foetal complications. MODY (Maturity-Onset Diabetes of the Young) is a rare form of DM affecting recently. This case report demonstrates a MODY patient who managed her diabetes well and safely delivered a baby without any complications after 14 years of diagnosis of the disease.

Keywords: Diabetes, MODY, Gestational Diabetes, Pregnancy

INTRODUCTION

Diabetes mellitus (DM) is probably one of the oldest diseases known to man. It was first reported in Egyptian manuscript about 3000 years ago. In 1936, the distinction between Type 1 and Type 2 DM was clearly made.

Type 2 DM was first described as a component of metabolic syndrome in 1988. Type 2 DM (formerly known as non-insulin dependent DM) is the most common form of DM characterized by hyperglycaemia, insulin resistance, and relative insulin deficiency.

Diabetes mellitus (DM) is a metabolic disorder resulting from a defect in insulin secretion, insulin action, or both. Insulin deficiency in turn leads to chronic hyperglycaemia with disturbances of carbohydrate, fat and protein metabolism. It is the most common endocrine disorder and by the year 2010, it was estimated that more than 200 million people worldwide having DM and 300 million will subsequently have the disease by 2025.

As the disease progresses tissue or vascular damage ensues leading to severe diabetic complications such as retinopathy, neuropathy, nephropathy, cardiovascular complications and ulceration. Thus, diabetes covers a wide range of heterogeneous diseases (Bastaki, 2005).

CASE

In 2002, A 14 year old female school student who was a resident of West Bengal, India complained of tiredness, gastric upset and general weakness. A thorough investigation was carried out in Kothari Medical Centre, Kolkata. Stool examination, endoscopy and colonoscopy appeared normal. There was no previous medical or drug abuse history. All the other tested reports were normal, except fasting blood sugar of 297 mg/dl. She had fasted for at least 16 hours as the tests had to be conducted in an empty stomach.

She was misdiagnosed to have Type I diabetes and hence, treated with Insulin (Actrapid and Mixtard) 2-3 times a day with the total insulin daily dose of 50 units for two months but her blood sugar levels used to hover around 250 mg/dl. Her HbA1c (glycosylated Haemoglobin) was an alarming 11.1%.

Case Report

Table 1: HbA1c Values (Normal and Diabetic)

HbA1C	%
Normal	Below 6.0%
Pre-diabetes	6.0% to 6.4%
Diabetes	6.5% or over
Good Control	Less than 7%
Fair Control	7-8%
Unsatisfactory Control	8-9%
>10%	Panic Value

Around 3 months later, she visited M.V. Hospital for Diabetes, Chennai (her D No. 141212). Her C-Peptide assay showed good β -cell function. Therefore, she was switched over to Oral Hypoglycaemic Agents (OHA) Diapride (Glimepiride) 2 mg, Wallaphage (Metformin) 500 mg, Vogliform (Voglibose) and Posinorm (Pioglitazone) 15 mg. Metformin, Pioglitazone and Glimepiride were taken twice a day and Voglibose was taken before meals. Her blood sugar levels were controlled using the OHA. Hence, she was diagnosed as a Type II diabetic patient (MODY). Her HbA1C dropped to 5.8%. Her fasting and post prandial blood sugars used to range around 120 and 150 mg/dl respectively. She was on the above OHA from late 2002 till 2009. Since 2009, upon the advice of her diabetologist, she started using Sitagliptin and Metformin combination (Janumet), along with Acarbose/Voglibose and monitored her HbA1C levels once in 6 months and blood sugar (fasting and post prandial) every alternate day. She set her target HbA1C levels within 7%. She controlled her blood sugar levels with strict diet restriction (consumed around 1400 Kcal/day) and regular exercise (e.g.; brisk walking, skipping etc.), apart from taking her medications.

In the year 2016, she got conceived naturally and had no diabetic complications.

Table 2: Diabetic Complications (Papatheodorou *et al.*, 2016)

Types	Complications
Microvascular Complications	Diabetic nephropathy, neuropathy, and retinopathy
Macrovascular Complications.	Atherosclerosis
Miscellaneous Complications	Diabetic cardiomyopathy

During her pregnancy, she was on insulin Actrapid twice daily and Mixtard once a day. She took Metformin 500 mg Tablets twice a day.

She maintained her HbA1C within 7% throughout her pregnancy. Her baby growth was normal without any complications and deformities. She delivered a 3.2 Kg baby girl via a cesarean section in late 2016 in G.D Hospital and Diabetes, Kolkata (Registration No.: 09161793). The patient was 28 years old then. The baby born was healthy without any abnormalities.

Hence, a diabetic patient can live a normal life and have healthy and safe pregnancy if blood sugar levels are controlled properly and there are no diabetic complications.

DISCUSSION

Type 2 diabetes mellitus (DM) is a chronic metabolic disorder in which prevalence has been increasing steadily all over the world. As a result of this trend, it is fast becoming an epidemic in some countries of the world with the number of people affected expected to double in the next decade due to increase in ageing population (Olokobab *et al.*, 2012).

Maturity-onset diabetes of the young (MODY) is a group of monogenic disorders characterized by autosomal dominantly inherited non-insulin dependent form of diabetes classically presenting in adolescence or young adults before the age of 25 years. MODY is a rare cause of diabetes (1% of all cases) and is frequently misdiagnosed as Type 1 diabetes (T1DM) or Type 2 diabetes (T2DM) (Anik *et al.*, 2015).

Case Report

Gestational diabetes mellitus (GDM), by definition, is any degree of glucose intolerance with onset or first recognition during pregnancy. This definition applies regardless of whether treatment involves insulin or diet modification alone; it may also apply to conditions that persist after pregnancy. GDM affects roughly 7 % of pregnancies with an incidence of more than 200,000 cases per year (Mpondo *et al.*, 2015).

From the case report presented above, it may be concluded that controlled blood sugar levels in diabetes via proper medications, diet restriction and regular physical exercise may prevent the development of future diabetic complications. Also, diabetic patients may enjoy a healthy pregnancy and deliver safely if sugar levels are properly monitored.

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