

Dreadful Complications If Diabetes in Pregnancya Case Report

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Abstract: In INDIA diabetes is on rise. Diabetes is associated with maternal and perinatal morbidity and mortality. The number of pregnant women with pre-existing diabetes is increasing. . Overall, type 1 diabetes accounts for approximately 5% to 10% of all diabetes, and in pregnancy type 1 with type 2 account for 10% of diabetic pregnancies.of these 1%–4% Fulminant type 1 diabetes, classified as a subtype of nonautoimmune type 1 diabetes, may result in severe complications for both mother and fetus due to the sudden onset of diabetic ketoacidosisPregnancies affected by T1DM are at increased risk of maternal and fetal complications. Intensive glycemc control and preconception planning have been shown to decrease the rate of fetal demise and malformations seen in pregnancies complicated by T1DM .

Keywords: Insulin, Type 1 diabetes mellitus, Pregnancy, Diabetic ketoacidosis

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I. Case Report

A 32 year old T1DMgravida 2 para1 live 1 previous cesarian section with no evidence of diabetic microvascular or macrovascular complications, presented at term with one day history of pain abdomen and decreased fetal movements. During this pregnancy, she is a regular defaulter and her glycaemic control as measured by glycatedhaemoglobin (HbA1c) had been poor throughout with readings of 14.5%, 10.4%, and 11.5% (upper reference range 5.5%) in the first, second, and third trimesters respectively.she came with full dilatation of cervix,she delivered a dead born female baby with birth weight 3.5kg.postnatally complaints of severe pain abdomen her sugars were 831mg/dl ,sodium 124 mmol/l, potassium 6 mmol/l, bicarbonate 3.1mmol/l, chloride 100 mmol/l, urea 8 mmol/l, and creatinine 136 µmol/l. Arterial blood gas: pH 7.10, oxygen tension 13 kPa, carbon dioxide tension 2.3 kPa. Urine dipstick showed 4+ ketones, 4+glucose.the work up diagnosis at this point is severe anion gap acidosis with respiratory compensation.USG WHOLE ABDOMENwas done which suggested chronic calcific pancreatitis.She was treated aggressively with multiple insulin injection, fibrates,statins for management of diabetes and severe hypertriglyceridemia Her blood glucose levels were well controlled, plasma triglyceride level fell within normal range after two weeks, and pancreatitis was fully resolved. Uncontrolled diabetes-induced severe hypertriglyceridemia should be considered as a cause of acute pancreatitis and glucose control is important for prevention of pancreatitis



II. Introduction

India leads the world with largest number of diabetics earning the dubious distinction of “the diabetes capital of the world.” It was estimated to have had 31.7 million people having diabetes in year 2000, Approximately 87.5% of pregnancies complicated by diabetes are estimated to be due to gestational diabetes (which may or may not resolve after pregnancy), with 7.5% being due to type 1 diabetes and the remaining 5% being due to type 2 diabetes. The number of pregnant women with pre-existing diabetes is increasing, mainly from an increase in type 2 diabetes, but also an increase in type 1 diabetes. Thus, the knowledge and management of this condition in pregnancy has become important.

Overall, Ninety percent of all pregnant diabetic patients have gestational diabetes mellitus (GDM), whereas type 1 (formally also called insulin dependent diabetes) and type 2 (formally also called noninsulin-dependent diabetes) account for the remaining 10%. In general, type 1 and type 2 can be distinguished from each other using clinical criteria or islet cell antibody (ICA) studies. Most of the patients of GDM, non-insulin management in form of medical nutrition therapy (MNT) and oral hypoglycemic agents (OHAs) shall suffice, a substantial number of patients with type-1 DM shall require antenatal insulin therapy (AIT).

2.1 Fetal complications

2.2 Congenital anomalies in infants of mothers with type 1 diabetes

The frequency of major congenital anomalies among infants of diabetic mothers has been estimated as 6–10%. Newborns of women with a conception HbA1c greater than 10% have an approximately 22% probability of having congenital malformations. These malformations usually involve multiple organ systems, with cardiac anomalies being the most common, followed by central nervous system and skeletal malformations. Factors other than hyperglycemia have been implicated in diabetes-associated birth defects, including ketone bodies. Clinical studies suggest that euglycemia during organogenesis is critical in the prevention of congenital anomalies.

2.3 Still-birth

The stillbirth rate in women with diabetes is approximately 5.8 of every 1000 births. Approximately half of these stillbirth or fetal deaths are related to hyperglycemia. Studies with fetal blood sampling confirm that hyperglycemia has been associated with fetal hypoxia and acidosis.

2.4 Maternal Complications

Diabetic nephropathy complicates approximately 5% of pregnancies in women with pre-existing diabetes. Most affected pregnancies are in women with type 1 diabetes. Progression of diabetic nephropathy can be attenuated by aggressive treatment of hypertension and intensive glycemic control. Women with a prepregnancy creatinine of greater than 1.5 mg/dL have the highest perinatal complication rate.

Diabetic retinopathy, still one of the leading causes of blindness and visual disability in the world, is most often associated with long-standing type 1 diabetes.

Diabetic neuropathy in pregnancy has not been well studied. A short-term increase in distal symmetric polyneuropathy may occur in association with pregnancy.

Diabetic ketoacidosis (DKA) is an uncommon occurrence in treatment-compliant women with type 1 diabetes, despite the increased risk for this complication associated with the ketogenesis of normal pregnancy. However, DKA is a common complication in undiagnosed diabetes. Any pregnant woman with vomiting or dehydration and blood sugars greater than 200 mg/dL should have electrolytes, plasma bicarbonate, and serum acetone levels measured to confirm DKA diagnosis. Arterial blood gases should be obtained if the plasma bicarbonate is low and acetone is present. The precipitant of DKA is often infection, which should be diagnosed and treated promptly. Resolution of DKA can be slower in pregnancy. DKA is often associated with a non-reassuring fetal heart rate tracing, which in most cases resolves once the metabolic acidosis improves. However, despite improved management, DKA remains an important cause of fetal loss in diabetic pregnancies. Mild to moderate hypertriglyceridemia that is seen in association with diabetes is the most common form of hypertriglyceridemia. However, severe hyper-triglyceridemia (triglyceride >1,000 mg/dL) in diabetes is uncommon. Uncontrolled diabetes-induced severe hypertriglyceridemia should be considered as a cause of acute pancreatitis and glucose control is important for prevention of pancreatitis.

III. Management

3.1 Preconception

Management of the pregnant diabetic woman is a complex task that ideally begins before conception. In the preconception period, insulin regimens can be modified to improve glycemic control. Folic acid supplementation is instituted. Baseline renal function must be assessed to evaluate risk in a pregnancy and an

ophthalmologic evaluation performed. Other health or genetic risks should also be addressed. Counseling regarding specific risks and expectations in a diabetic pregnancy should be provided.

IV. Intrapartum

Tight glycemic control in labor helps decrease neonatal hypoglycemia in women with pre-existing diabetes. This degree of control is best accomplished with an intravenous insulin infusion during labor. Women should be instructed to not take their basal or long-acting insulin when in labor or the day of labor induction, and to begin an insulin infusion. After delivery, the infusion can be discontinued or, if a cesarean delivery was needed and full diet not instituted, it can be continued but insulin decreased.

V. Postpartum

Insulin requirements decrease quickly after delivery of the placenta. Insulin dosing can either be decreased or can be changed to pre-pregnancy doses.

Women with diabetes who breastfeed have lower daily blood glucose levels and generally require less insulin. Breastfeeding may also have a protective effect against the development of type 1 diabetes in childhood.

VI. Conclusion

Recent advances in insulin formulations and delivery methods have increased the number of options available to the obstetric team. Insulin regimens should be tailored to each individual patient to maximize compliance and ensure proper glycemic control. Intensive preconception counseling with frequent follow-up visits emphasizing tight glucose control is recommended for adequate management

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