



## A STUDY OF ADVERSE EFFECT ON MOTHER AND BABY IN CASES OF GESTATIONAL DIABETES MELLITUS

### KEYWORDS

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### INTRODUCTION

Gestational Diabetes Mellitus (GDM) is defined as "carbohydrate/glucose intolerance of varying degrees of severity with onset or first recognition during pregnancy." Irrespective of treatment with diet or insulin. Women with gestational diabetes are individuals with a genetic or metabolic predisposition towards diabetes who are incapable of compensating for the diabetogenic effects of pregnancy.

According to the American Diabetes Association(ADA), GDM complicates approximately 7% of all pregnancies, whereas its total incidence is estimated upto 17.8% depending upon the ethnic and clinical characteristics of the population and diagnostic tests employed.

Some women with GDM have previously unrecognized overt diabetes

Women who have had GDM have at least a seven-fold increased risk of developing type 2 diabetes mellitus in the future.

Also there is a risk of cardiovascular complications

associated with dyslipidemia, hypertension and abdominal obesity.

Recurrence of GDM is also documented in subsequent pregnancy.

Hyperglycemia and Adverse Pregnancy Outcome study provided an evidence of direct association between maternal glucose levels and pregnancy outcome, irrespective of the diagnosis of GDM.

Detection and treatment of GDM not only reduces the risks for the fetus but also provides an opportunity to warn the mother to adopt preventive measures like controlled diet, exercise and achieve ideal body weight to halt or delay the process of onset of overt diabetes.

### AIMS AND OBJECTIVES

To study the proportion of gestational diabetes in pregnancy.

To study demographic characteristics like age, parity, BMI, family history in relation to GDM.

To plan the management of gestational diabetes and decrease fetomaternal morbidity and mortality.

To study the maternal outcome in terms of mode of delivery, intrapartum and post partum complications and fetal outcome in terms of maturity, occurrence of congenital anomalies, and neonatal complications in cases of gestational diabetes.

### MATERIAL AND METHODS

It was a prospective observational study, of 32 cases of gestational diabetes mellitus out of total 15,626 delivered cases, carried out between the period of July 2014 to June 2016 in B.J medical college, Civil Hospital, Ahmedabad.

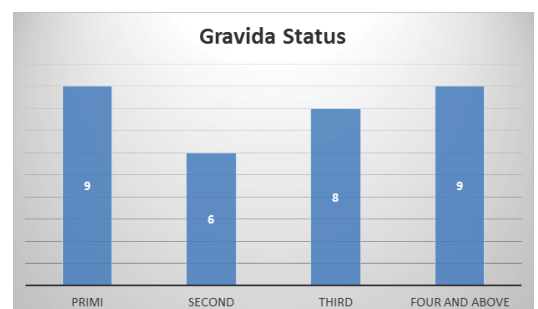
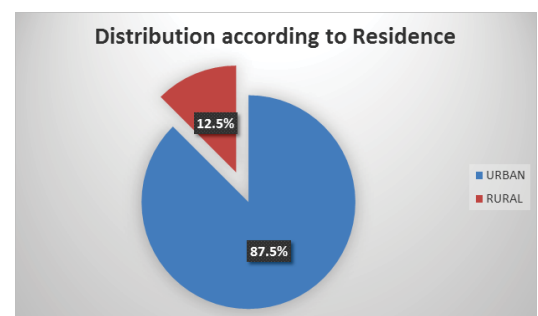
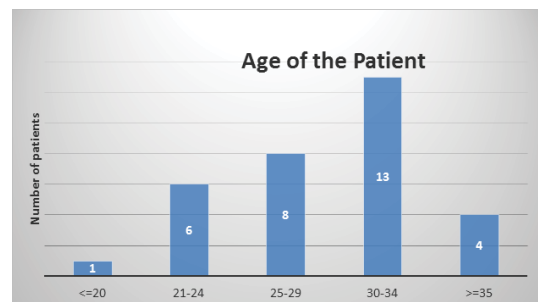
### INCLUSION CRITERIA

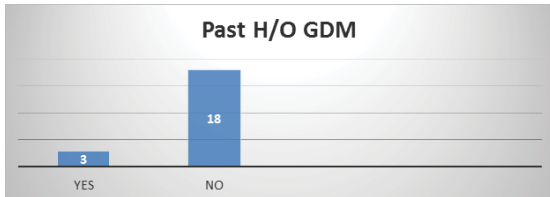
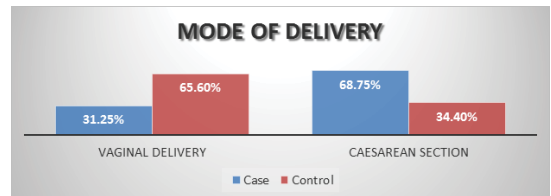
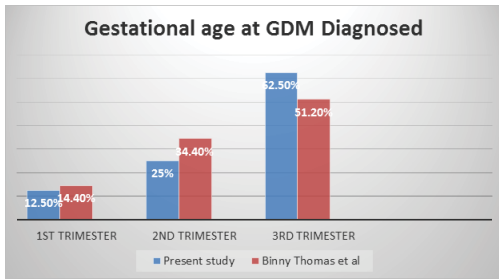
1. All cases of pregnancies complicated by gestational diabetes were included.

2. Patients who could be followed up, investigated and those in which fetal outcome could be recorded were only included

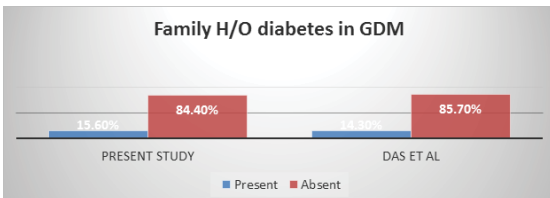
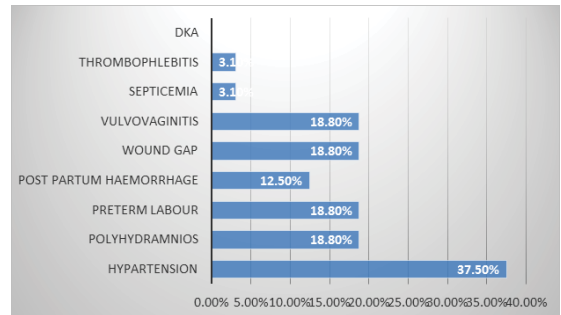
Each case was analyzed in detail with emphasis on

- age,
- gravida status,
- gestational age,
- menstrual history,
- past, family and personal history,
- General physical examination,
- Obstetric examination,
- Routine investigations,
- Specific investigations,
- maternal and neonatal outcomes.

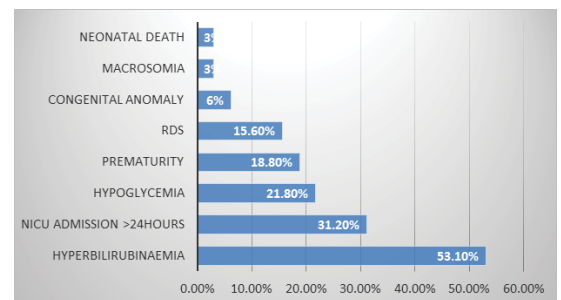




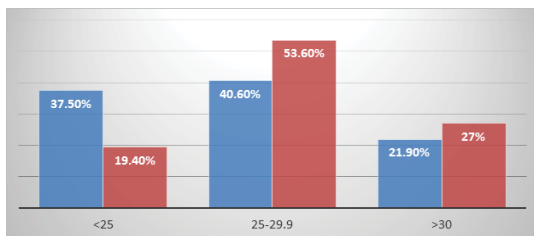
Maternal complications in GDM



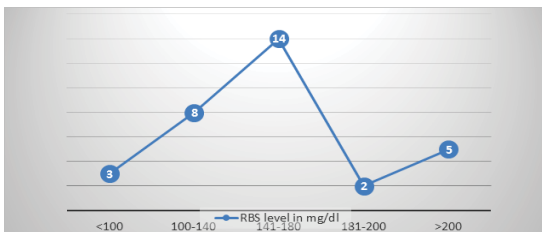
Neonatal Complications



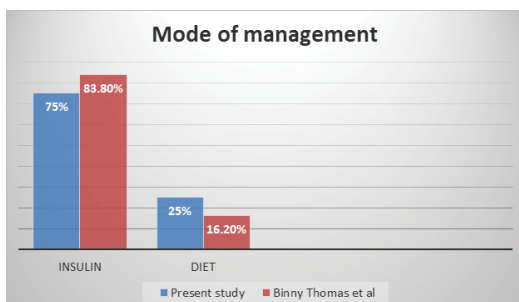
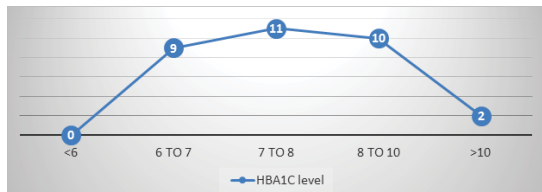
Distribution a/c to BMI & comparison



RBS levels on admission



HBA1c level on admission



SUMMARY

- Total 32 patients of gestational diabetes were analysed.
- Proportion of GDM in our study was 0.2%, which was less probably because universal screening was not feasible due to certain constraints and probably because of improvement in medical and obstetric care at secondary level, fewer patients referred to tertiary care hospital.
- 40.6% were in the age group of 30-34years. 46.8% patients belonged to age group less than 30 years and 53.2% were in the age group of more than 30 years.
- 87.5% of patients in this study were from urban areas.
- 68.8% were booked/registered patients. Rest were emergency admissions.
- 3 patients, that is 14.3% had past history of GDM.
- 15.6% patients had a positive family history of diabetes.
- 28.1% were primigravida and 71.9% were multipara.
- 12.5% diagnosed in first trimester, 25% in second and 62.5% in third trimester.
- Out of 32 patients of Gestational diabetes, 3.1% were under weight, 34.4% were normal, 40.6% were overweight and 21.9% were obese. Hence, 62.5% patients had BMI more than normal
- 43.7% patients were anaemic (Hb < 11gm/dl).
- 37.5% patients had HbA1C level of > 8%.
- In our study, 18.8% had polyhydramnios.
- On admission, 15.6% patients had absent fetal cardiac activity(IUFD).
- 75% patients required insulin for treatment of gestational diabetes along with diet and exercise.
- 68.75% patients with GDM were delivered by caesarean section.
- Most common indications for caesarean section in GDM mothers were previous 1 or more CS, PIH with Doppler changes, big baby. Rate of caesarean section was more common in women with gestational diabetes.
- Most common association of GDM in pregnancy was PIH, seen in

- 37.5% patients. Wound gap and vulvovaginitis was present in 18.8% and septicemia in 1 patient, i.e, 3.1%.
- 25% neonates were preterm.
  - In our study, 5 babies were stillborn, i.e, 15.6%.
  - 21.8% babies had birth weight >3.5kg.
  - 28.1% babies developed hypoglycaemia. 10 (31.2%) babies required intensive care for > 24 hours.
  - Congenital anomaly was found in 2 babies (6.2%).
  - In our study, perinatal mortality in cases of GDM was 22.2%.
  - In Postpartum period, insulin requirement was present in 5 patients., 15.6%.

### CONCLUSION

- Clinical recognition of GDM is important because timely intervention by dietary measures and/or insulin can reduce the well-known maternal and fetal complications associated with it.
- Increased maternal age, high body mass index, multigravidity, family history of diabetes was identified to be major risk factors. Patients with such factors should be identified as early as possible and classified as a high risk group and called for frequent antenatal check-up as required.
- Higher rate of maternal complications like gestational hypertension, polyhydramnios, vaginitis, wound gap were found in cases of GDM in our study.
- Rate of caesarean section was higher in the GDM group.
- Babies born to GDM mothers had increased rate of macrosomia and metabolic complications. But immediate intensive care after birth lead to reduced neonatal mortality.
- Educating patients about regular antenatal care and proper monitoring of blood glucose levels are important measures to reduce maternal-fetal neonatal morbidity and mortality.

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