

ORIGINAL ARTICLE

Gestational Diabetes Mellitus & Associated Risk Factors in Women- A Clinical Study

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ABSTRACT:-

Introduction- Gestational diabetes mellitus is defined as glucose intolerance of varying degree with onset or first recognition during pregnancy. Prevalence of gestational diabetes mellitus varies widely. The present study was conducted to assess the cases of gestational diabetes. **Materials & Methods-** The present study was conducted in the department of Gynaecology & Obstetrics on 392 pregnant women of 24- 28 weeks. BMI, education status, family history, socio- economic status was also noted. All were analyzed for oral glucose tolerance test (OGTT). **Results-** Maximum number of patients were in age group 21- 25 years (176) followed by 26- 30 years (102), 16- 20 years (94) and >30 years (20). BMI (Kg/m²) was seen in range of 18.5- 24.9 (194), < 18.5 (130) and >25 (68). Parity was 0 (168), 1 (152), 2 (50) and 3 (24). The difference was significant (P< 0.05). Education level was high school (140), secondary school (24), primary school (110) and illiterate (120). The difference was significant (P< 0.05). Class was upper (55), lower (210) and middle (129). The difference was significant (P< 0.05). **Conclusion-** Gestational diabetes is common nowadays. Prevention is by maintaining a healthy weight and exercising before pregnancy. It was observed mostly in 21- 25 years of women and women with BMI 18.5- 24.9 showed higher prevalence.

Key words- Education, Gestational diabetes, Illiterate

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INTRODUCTION

The prevalence of diabetes mellitus (DM) is increasing worldwide and more in developing countries including India. The increasing prevalence in developing countries is related to increasing urbanization, decreasing levels of physical activity, changes in dietary patterns and increasing prevalence of obesity. As women with gestational diabetes mellitus (GDM) and their children are at increased.¹

According to the International Diabetes Federation (IDF), the epidemiology of diabetes during pregnancy is unknown in many countries in the world. More than 21 million pregnancies were affected by diabetes during the year 2013. Saudi Arabia is among the top ten countries in the world with the highest prevalence of diabetes.²

GDM is defined as glucose intolerance of varying degree with onset or first recognition during pregnancy. Prevalence of gestational diabetes mellitus varies widely. Depending on the population studied and the diagnostic test employed, prevalence may range from 2.4 to 21 per cent of all pregnancies. In India it is difficult to predict any uniform prevalence levels because of wide differences in living conditions, socioeconomic levels and dietary habits. Zargar et al³ found the prevalence of GDM to be 3.8 per cent in Kashmiri women. In a random survey performed in various cities in India in 2002-2003, an overall GDM prevalence of 16.55 per cent was observed. In another study done in Tamil Nadu, GDM was detected in 17.8 per

cent women in urban, 13.8 per cent women in semi-urban and 9.9 per cent women in rural areas.

Pregnancies complicated by maternal diabetes are associated with adverse maternal and neonatal outcomes including increased rate of Cesarean section delivery, macrosomia, admission to neonatal intensive care unit (NICU), and perinatal mortality.⁴ The present study was conducted to assess the cases of gestational diabetes.

MATERIALS & METHODS

The present study was conducted in the department of Gynaecology & Obstetrics. It included 392 pregnant women in 24- 28 weeks. All were informed regarding the study and written consent was obtained. Ethical clearance was obtained before starting the study.

General information such as name, age, etc. was recorded. BMI, education status, family history, socio- economic status was also noted. All were advised to take their regular diet for 3 days and to come after observing overnight fast for oral glucose tolerance test (OGTT).

After estimating fasting capillary glucose all participants were subjected to OGTT with 75g anhydrous glucose powder dissolved in 250-300 ml water to be consumed within five minutes. Time was counted from the start of the drink. Fasting, 1 and 2 h post-glucose (FPG & PG) load, plasma glucose levels were estimated by glucometer. Results thus obtained were subjected to statistical analysis

using chi- square test. P value less than 0.05 was considered significant.

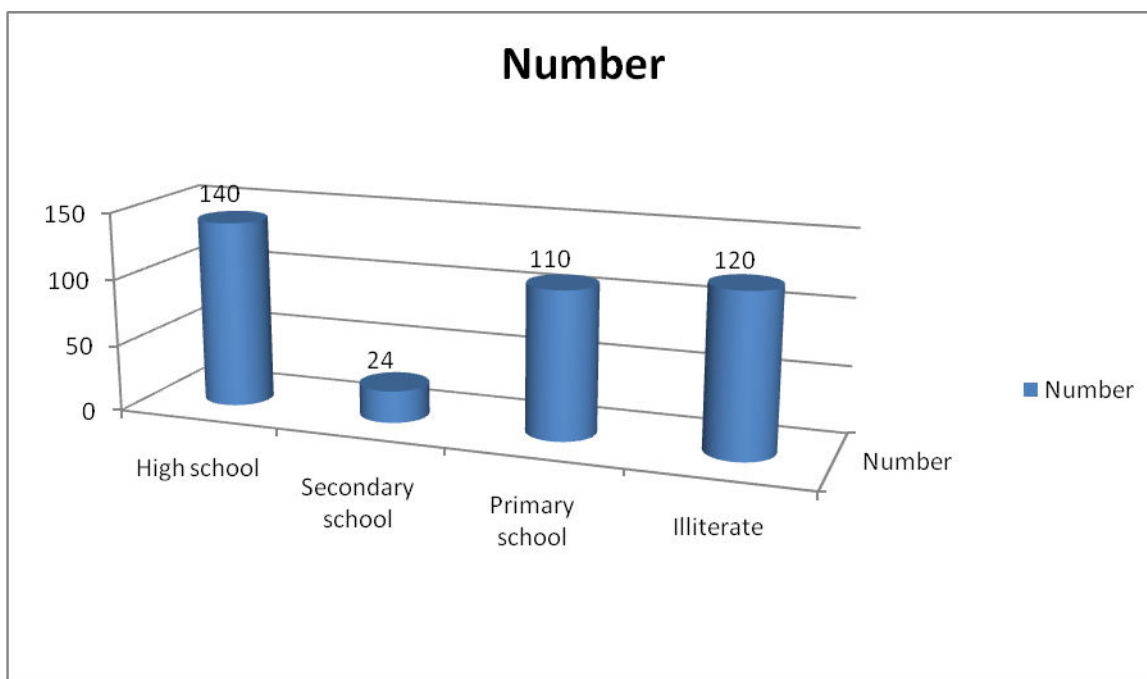
RESULTS

Table I Characteristics of patients

Parameters	Number	P value
Age (years)		
16-20	94	0.01
21-25	176	
26-30	102	
>30	20	
BMI (Kg/m²)		
<18.5	130	0.01
18.5- 24.9	194	
>25	68	
Parity		
0	168	0.02
1	152	
2	50	
3	24	

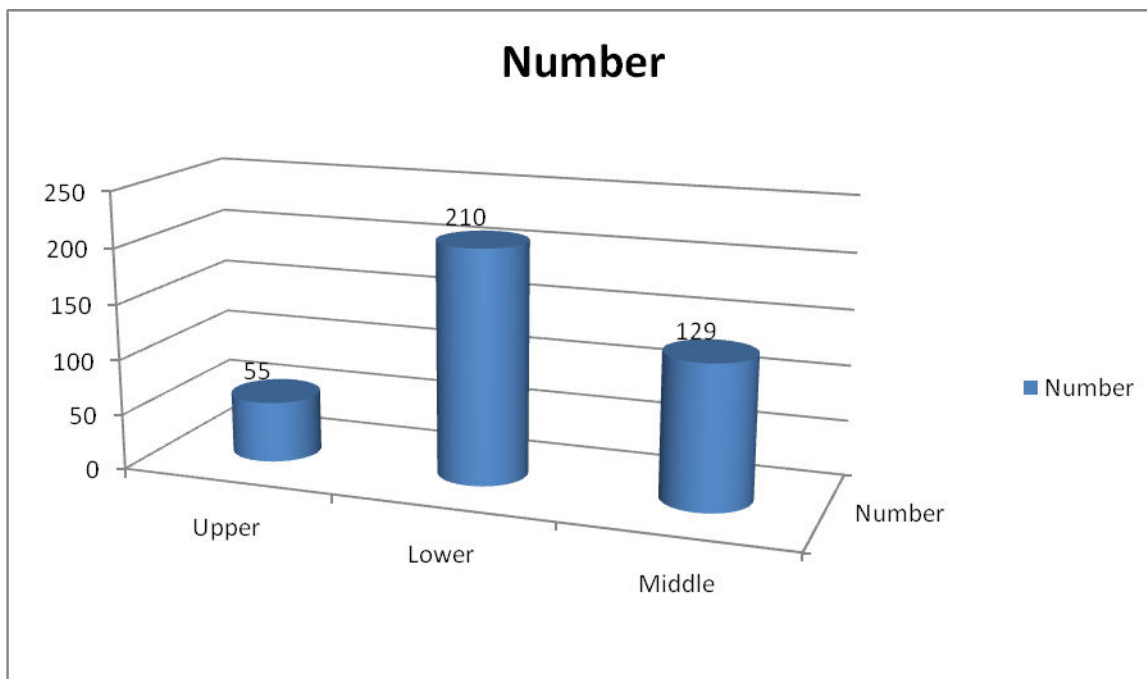
Table I shows that maximum number of patients were in age group 21- 25 years (176) followed by 26- 30 years (102), 16- 20 years (94) and >30 years (20). BMI (Kg/m²) was seen in range of 18.5- 24.9 (194), < 18.5 (130) and >25 (68). Parity was 0 (168), 1 (152), 2 (50) and 3 (24). The difference was significant (P< 0.05).

Graph I Education status



Graph I shows that education level was high school (140), secondary school (24), primary school (110) and illiterate (120). The difference was significant (P< 0.05).

Graph II Class of the patients



Graph II shows that class was upper (55), lower (210) and middle (129). The difference was significant ($P < 0.05$).

DISCUSSION

Gestational diabetes is a condition in which a woman without diabetes develops high blood sugar levels during pregnancy. Gestational diabetes is caused by not enough insulin in the setting of insulin resistance. Risk factors include being overweight, previously having gestational diabetes, a family history of type 2 diabetes, and having polycystic ovarian syndrome. Diagnosis is by blood tests. For those at normal risk screening is recommended between 24 and 28 weeks gestation.⁵

Interventions such as preconception care for women with pre-GDM and screening and control of hyperglycemia during pregnancy for women with GDM have been proven to improve the outcomes for pregnancies complicated with diabetes. Hence, it is important to estimate the burden of diabetes and its complication among pregnant women to direct health resource to improve the outcomes for these high-risk pregnancies. Obesity is a risk factor for many maternal and perinatal adverse outcomes, including increased Cesarean section delivery, hypertensive disorders in pregnancy, macrosomia, and perinatal mortality. In addition, obesity is associated with the development of T2DM and GDM due to the increased peripheral resistance to insulin.⁶

We found that maximum number of patients were in age group 21- 25 years followed by 26- 30 years, 16- 20 years and >30 years. This is in agreement with Metzger et al.⁷ We found that BMI (Kg/m^2) was seen in range of 18.5-24.9 (194), < 18.5 (130) and >25 (68). Parity was 0 (168), 1

(152), 2 (50) and 3 (24). This is in agreement with Xiong X et al.⁸ We found that education level was high school (140), secondary school (24), primary school (110) and illiterate (120). Maximum patients were in lower (210) and middle (129) and upper (55) class was.

Gestational diabetes generally results in few symptoms; however, it does increase the risk of pre-eclampsia, depression, and requiring a Caesarean section. Babies born to mothers with poorly treated gestational diabetes are at increased risk of being too large, having low blood sugar after birth, and jaundice. If untreated, it can also result in a stillbirth. Long term, children are at higher risk of being overweight and developing type 2 diabetes. Prevention is by maintaining a healthy weight and exercising before pregnancy. Gestational diabetes is treated with a diabetic diet, exercise, and possibly insulin injections. Most women are able to manage their blood sugar with a diet and exercise.⁹ Blood sugar testing among those who are affected is often recommended four times a day. Breastfeeding is recommended as soon as possible after birth.

CONCLUSION

Gestational diabetes is common nowadays. Prevention is by maintaining a healthy weight and exercising before pregnancy. It was observed mostly in 21- 25 years of women and women with BMI 18.5- 24.9 showed higher prevalence.

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