ORIGINAL ARTICLE

Frequency of Gestational Diabetes Mellitus among Pregnant Women

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ABSTRACT

Background: Gestational Diabetes Mellitus (GDM) frequency among pregnant women varies according to different cultures and countries. Also there are some factors which may predispose pregnant women towards GDM.
Aim: To determine the frequency of GDM among pregnant women presenting in our hospital.
Methods: This prospective cross-sectional study was done at Avicenna Medical College, Lahore, over a period of 2 years. We included all the patients presenting in Obstetrics and Gynecology department with confirmed pregnancy. They were screened for GDM using The American College of Obstetricians and Gynecologists (ACOG, 2001) criteria at 24-28 weeks and 34th-36th weeks of gestation. All data was analyzed using SPSS version 24.
Results: A total of 558 patients were included in this study over 2 years of study period. The mean age was found to be 29.42±6.10 years. Most of the women were having age <30 years, were uneducated and were housewives. Among them 194 patient (34.76%) were primigravida. GDM was found in 47 patients of 558 included in this study (8.42%). GDM was stratified presence/absence of GDM for risk factors including age, educational status of mothers, gravida status, previous pregnancy GDM status and BMI. However, it was not significant for any of these variables.
Conclusion: We conclude that frequency of GDM is quite higher in our pregnant women and we need to educate our patients about this entity. Also we recommend screening all patients for GDM having pregnancy.
Keywords: Gestational Diabetes Mellitus; Diabetes; Pregnancy

INTRODUCTION

Gestational Diabetes Mellitus (GDM) is one of the most common metabolic disorder encountered during pregnancy. Its prevalence varies in different ethnic as well as geographic areas; however, it varies from 1%-14% [(1)]. In a recent study from Pakistan, prevalence of GDM was found as 11.8% among pregnant women in Pakistan [(2)]. In a study from Australia, it was concluded that frequency of GDM is higher in Asian population as compared to those in Australian pregnant women (11.5% vs 3.7%) [(3)]. GDM is associated with many complications which may occur during antenatal period to the mothers as well as among newborns. Also GDM patients are more prone to develop type 2 Diabetes Mellitus (DM) and it is one of the important risk factor for such patients. There are many different risk factors including Age over 30 years old, high BMI and obesity, low activity, smoking, genetic disorders, previous GDM, family history of diabetes and history of abortion have been presented in different studies [(4, 5)]. As there is not enough literature available from Pakistan over the topic, so this study was planned with the objective to determine the prevalence of GDM among pregnant women in our population. The objective of the study was to determine the frequency of GDM among pregnant women presenting in our hospital.

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MATERIALS AND METHODS

This prospective cross-sectional study was done at Avicenna Medical College, Lahore, over a period of 2 years, from January, 2015 to December, 2017. All the patients presenting in Obstetrics and Gynaecology department with confirmed pregnancy and gestational age>8 weeks were included in this study. An informed consent was obtained from all patients before inclusion into the study. They were provided obstetrical care as per protocols of the department. Their screening for GDM was done two times during gestational period. In order to diagnose GDM, we used The American College of Obstetricians and Gynecologists (ACOG, 2001) criteria (6). All the patients underwent Glucose tolerance test (GTT) twice in this period. First GTT was done between 24-28 weeks and we used 50 g oral glucose. Later on second test was done at 34th-36th weeks of gestation using 100g oral glucose. If Glucose level is more than higher range on 2 or more occasions, then it was labeled as GDM. We excluded all those patients who had abortion, intrauterine death or did not come for follow up in our hospital. All the data was recorded on a Performa and was analyzed using SPSS version 24.

RESULTS

A total of 558 patients were included in this study over 2 years of study period. The mean age was found to be 29.42 ± 6.10 years. Most of the women were having age <30 years. In this study 52.86% women (n= 295) were uneducated. Similarly 72.5% women (n=405) were housewives and did not do any job. Among them 194 patient (34.76%) were primigravida. Those having >1 gravida status 364(20.87%) patients (n=76) had GDM in their previous pregnancies. Most of the women in this study had BMI >30 kg/m^2. The final outcome of the study was to

determine the frequency of GDM among these women. GDM was found in 47 patients of 558 included in this study (8.42%). Then we stratified presence/absence of GDM for risk factors including age, educational status of mothers, gravida status, previous pregnancy GDM status and BMI. However, it was not significant for any of these variables (Table 1).

Table 1: Stratification of all variables for GDM

Variable	Total (n= 558)	GDM		P- Value
		Yes	No	
Age				
≤30 years	373	26	347	0.076
>30 years	185	21	164	
Educational status				
Uneducated	295	23	272	0.738
Upto Matriculation	208	18	190	
More than Matriculation	55	6	49	
Occupation status				
Working women	153	9	144	0.184
Housewife	405	38	367	
Previous pregnancies				
Primigravida	194	19	175	0.561
1-2 pregnancies	266	22	244	
>3 pregnancies	98	6	92	
GDM in previous pregnancy				
Yes	76	13	63	0.220
No	288	34	254	
BMI				
<25 kg/m^2	137	7	130	0.253
25.1-30 kg/m^2	159	14	145	
>30 kg/m^2	255	26	236	

DISCUSSION

Diabetes in pregnancy was first described by Bennewitz in Germany (1826). GDM is defined as any degree of glucose intolerance with onset or first recognition during pregnancy. The frequency of GDM is reported ranging from 1% to 14% in different studies. In this study, we found it in 8.42% of pregnant women. A study from Turkey reported its prevalence in 45 of 690 pregnant women (6.9%) [7]. In a study from Pakistan, it was reported in 15.6% of pregnant women [8]. In another larger study from Pakistan which included 11430 pregnant women, GDM was found in 1349(11.8%) pregnant women [2]. A study from India reported its incidence in 14.8% of pregnant women (9). In a study which included more than 125 million pregnancies in the United States over 31 years, it was observed that prevalence of GDM is on continuous rise over the decades and compared with 1979–1980 (0.3%), the rate of GDM had increased to 5.8% in 2008–10 [10].

Regarding the risk factor of GDM, many factors including GDM during previous pregnancies, family history of Diabetes Mellitus, maternal obesity, advanced age of the mother and genetic predisposition may be a significant risk factors [4, 5, 11-13]. In our study, none of the factors proven to be significant for GDM development. This may be due to difference in sample size as such studies generally demand a very large sample size.

There were some limitations of this study. It was a single center study, although it was conducted over a period of 2 years, but still a multicenter study must be better. Secondly it was a cross-sectional study and we strongly recommend future case-control studies in order to determine the risk of GDM with all these proposed risk factors and to assess their association with GDM.

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