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Study of 100 Cases of Gestational Diabetes in Sree Balaji Medical College and Hospital (SBMCH), Tamil Nadu, India.

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ABSTRACT

To assess the association between gestational diabetes and its risk factors. This study was undertaken to identify the degree of association between gestational diabetes and its various risk factors in our population. This is a population based study done in SBMCH, Chennai over a period of six months from January 2015 to June 2015. All antenatal patients attending antenatal op in SBMCH excluding multiple pregnancy and those with medical disorders including overt diabetes, were subjected to 75g GTT in their first visit. In that 100 patients were found to have glucose intolerance. And the study was conducted in that 100 patients. The prevalence of GDM was high in older age group(>30years) 59%, obese women (BMI>25) 69%, family history of diabetes (both mother and father) 61%, PCOD 52%, GDM in previous pregnancy(54.28%)%, Previous big baby (>4kg) 5.71%,previous still birth11.42%, previous anomalous baby 7.15 %, present congenital anomalies6% and poly hydramnios 18%. since the prevalence of gestational diabetes in patients with risk factors was high, early screening of mothers with these risk factors will help in diagnosing GDM at earlier gestational age and hence in preventing maternal and neonatal complications of GDM.

Keywords: gestational diabetes, GTT, GDM.

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INTRODUCTION

Gestational diabetes is defined as acarbohydrate intolerance of variable severity with onset or first recognition during pregnancy [1]. It is associated with an increased risk of maternal and perinatal morbidity and mortality. More than half of women with GDM ultimately develop overt diabetes in the ensuring 20 years [2]. Worldwide the incidence of GDM has increased and varies from 0.4% to 10% in western population [3]. In India the incidence of GDM is much higher and varies from 10% to 17.8 % [4]. Gestational diabetes is a condition that can be effectively controlled eventually leading to the delivery of healthy infants.

MATERIALS AND METHODS

This study was done from January 2015 to June 2015 in Sree balaji medical college and hospital in Chennai.

All antenatal mothers (532) attending our antenatal op excluding multiple pregnancy and those with medical disorders including overt diabetes, were screenedfor GDM.Of them 100 were diagnosed to have glucose intolerance. Detailed historymainly concentrating on age, pre pregnancy weight, height, family history of diabetes, GDM in previous pregnancy, previous anomalous baby, previous big baby, previous still birth baby and PCOD elicited. Thorough general and obstetric examination was done. An overnight fasting plasma glucose is taken and then 75 g of glucose in 250 ml of water is given to the patient and blood sugars are checked at one-hour and two-hour interval.

Diagnostic values for GDM after 75G oral GTT:

Plasma glucose	mg/dl
Fasting	92
1-hr OGTT	180
2-hr OGTT	153

One or more of these values from a 75g OGTT must be equaled or exceeded for thediagnosis of gestational diabetes (5). In 532 patients 100 patients were found to have GDM. In that, 30 patients were primi and 70 were multigravida.

RESULTS

Table 1: Distribution of Patients According To Age

AGE(YEARS)	NUMBER OF CASES WITH GDM	PERCENTAGE
< 20	1	1
20-25	15	15
26-30	25	25
>30	59	59
TOTAL	100	100

According to the above table maximum number of patients belong to the age group above 30 years which is 59%. Between the age group 26-30 years 25(25%) cases were seen.

Table 2: Distribution Of Patients According To BMI

BMI(KG/M2)	NUMBER OF CASES WITH GDM	PERCENTAGE
< 18.5	1	1
18.5-25	30	30
>25	69	69
TOTAL	100	100

According to the above table, of the 100 GDM patients 69 patients had BMI more than 25(68%), 30 patients had BMI between18.5-25.

Table 3: Distribution of Patients According To Family History

FAMILY HISTORY	NUMBER OF CASES WITH GDM	PERCENTAGE
ONLY MOTHER	20	20
ONLY FATHER	9	9
BOTH MOTHER AND FATHER	61	61
NO FAMILY HISTORY OF DM	10	10
TOTAL	100	100

According to above table, 61 patients had family history of diabetes in both mother and father. 20 patients had family history of diabetes only inmother and 9 patients had history of diabetes only to father.

Table 4: Distribution of Patients According To the History of PCOD

PAST HISTORY	NUMBER OF CASES WITH GDM	PERCENTAGE
HISTORY OF PCOD	52	52
NO HISTORY OF PCOD	48	48
TOTAL	100	100

In this study 52 GDM patients had polycystic ovarian disease.

Table 5: Distribution Of Patients According To The History Of GDM In Previous Pregnancy

PAST HISTORY	NUMBER OF CASES WITH GDM	PERCENTAGE
HISTORY OF GDM IN PREVIOUS PREGNANCY	38	54.28
NO PREVIOUS HISTORY OF GDM	32	45.72
TOTAL	70	100

In this study 30 patients were primi, 70 patients were multigravida. Of the 70 patients, 38 patients had GDM in previous pregnancy (54.28%).

Table 6: Distribution of Patients According To History of Previous Big Baby

PAST HISTORY	NUMBER OF CASES WITH GDM	PERCENTAGE
HISTORY OF PREVIOUS BIG BABY	4	5.71
NO HISTORY OF BIG BABY	66	94.29
TOTAL	70	100

In this study 30 patients were primi, 70 patients were multigravida. Of the 70 patients, 4(5.71%) patients with GDM had previous big baby of weight more than 4 kg.

Table 7: Distribution of Patients According To the History of Previous Still Birth

PAST HISTORY	NUMBER OF CASES WITH GDM	PERCENTAGE
HISTORY OF STILL BIRTH	8	11.42
NO HISTORY STILL BIRTH	62	88.58
TOTAL	70	100

In this study 30 patients were primi, 70 patients were multigravida. Of the 70 patients, 8 (11.42%) patients had still birth in previous pregnancy.

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Table 8: Distribution of Patients According To the History of Previous Anomalies

PAST OBSTETRIC HISTORY	NUMBER OF CASES WITH GDM	PERCENTAGE
NUMBER OF PATIENTS WITH PREVIOUS ANOMALOUS BABY	5	7.15
NO: OF PATIENTS WITH PREVIOUS NORMAL BABY	65	92.85
TOTAL	70	100

In this study 30 patients were primi, 70 patients were multigravida. Of the 70 patients 5(7.15%) patients had previous anomalous baby.

Table 9: Distribution of Patients According To Liquor Status in Present Pregnancy

LIQUOR	NUMBER OF CASES WITH GDM	PERCENTAGE
POLYHYDRAMNIOS	18	18
OLIGOHYDRAMNIOS	0	0
NORMAL	82	82
TOTAL	100	100

Of the 100 patients of GDM, 18 patients had polyhydramnios in present pregnancy

Table 10: Distribution of Patients According To Present Congenital Anomalies

ANOMALIES IN PRESENT PREGNANCY	NUMBER OF CASES WITH GDM	PERCENTAGE
NO OF PATIENTS WITH ANOMALIES IN PRESENT PREGNANCY	6	6
NO ANOMALIES	94	94
TOTAL	100	100

According to the above table, 6 (6%) patients have anomalies in present pregnancy.

DISCUSSION

This study provides baseline information about the risk factors of GDM. Early identification of GDM and appropriate treatment reduces the maternal and perinatal morbidity and mortality. In our study the incidence of gestational diabetes increases with increasing age like in other studies [6]. Overweight women were more likely to develop GDM than the normal weight women [7,8].

In our study family history of diabetes plays a significant role in GDM. When both mother and father has diabetes the incidence GDM was 61% [9-11]. In 1997, in a population-based study, it was reported that the history of diabetes in the patient's mother was significantly associated with a risk of GDM, our study also confirmed the same [12]. This shows that there is a highly significant risk with maternal association as against paternal association toward the development of GDM.

Women with PCOS had a higher risk of developing GDM, other studies also confirms the same [13-16].The present study showed that women with a history of GDM in a previous pregnancy were more likely to have GDM in the present pregnancy, reflecting the inherent tendency of women to develop insulin insensitivity. Another study done in Canadaalso confirmed the same [17].

In a study conducted in Iran showed that previous macrosomic baby is theSequele of unrecognized gestational diabetes [18]. Our study also showed that previous macrosomic baby is a risk factor for GDM.

According to a study done in Canada in 2001, one of the risk factors for development of GDM was previous unexplained neonatal deaths [19]. According to our study still birth, anomalies in previous pregnancy, hydrominos and congenital anomalies in present pregnancy are also an important risk factors for GDM [20-22].

SUMMARY

Risk factors like older age, obesity, family history of diabetes, polycystic ovarian disease, history of GDM in previous pregnancies, still birth, previous big baby,previous anomalous baby,polyhydramnios and present anomalous baby are associated with gestational diabetes. Hence early screening in pregnant women with these risk factors will help in diagnosing gestational diabetes in early pregnancy and with appropriate treatment we can reduce the maternal and neonatal complications of GDM.

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