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Original Research Article

A Study on Incidence of GDM at A Tertiary Care Centre

Dr. N. Sumathi
Professor O& G, Madurai Medical College, Madurai

***Corresponding author**
Dr. N. Sumathi
Email: sumathibaskaran88@gmail.com

Abstract: The aim is to find the incidence of GDM using 75-g oral glucose tolerance test (OGTT) as a single-step screening and diagnosing GDM. Antenatal women attending Obstetrics department OP at Government Rajaji hospital, Madurai. Irrespective of age, parity and risk factors were subjected to a standardized 75 g oral glucose tolerance test (OGTT). Blood samples were obtained after 2 hours and venous plasma glucose was measured using an autoanalyser. 140mg/dl and above was taken as a cut off for GDM diagnosis. This study was conducted between July to december 2016. A total of 1,352 pregnant women were included in the study. Among the 1352 Ante natal women, GDM was diagnosed in 127 women. The incidence was found to be 9.39%. In this analysis, risk factors that are significantly associated with GDM were increasing age and increasing parity. Most of the cases were found positive between 24 to 28 weeks. As the percentage of pregnancies with GDM is increasing, a timely intervention is needed to prevent further complication associated with GDM. The cut off valve for diagnosing GDM can be decreased to 130mg % to increase the sensitivity of the test.
Keywords: Gestational diabetes mellitus, OGTT

INTRODUCTION:

Gestational diabetes mellitus, (GDM) is a state of carbohydrate intolerance of being first recognized during pregnancy. With increasing incidence in developing countries, 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 risk of developing diabetes mellitus in future, special attention should be paid to this population especially in developing countries.

AIM

To find the incidence of GDM using 75-g oral glucose tolerance test (OGTT) as a single-step screening and diagnosing GDM

MATERIALS AND METHODS

Antenatal women attending Obstetrics department OPD at Government Rajaji hospital, Madurai irrespective of age, parity and risk factors were subjected to a standardized 75 g oral glucose tolerance test (OGTT). Blood samples were obtained after 2 hours and venous plasma glucose was measured using an autoanalyser. 140mg/dl and above was taken as a cut off for GDM diagnosis. This study was conducted between July to December 2016. A total of 1,352 pregnant women were included in the study.

RESULTS

1352 mothers were screened of which 127 were found to be positive. Hence the incidence of gestational diabetes was found to be 9.39%

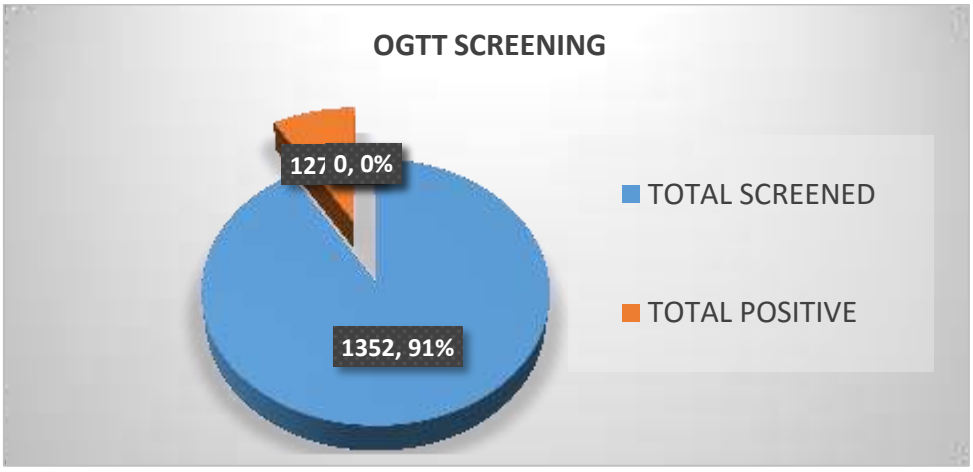

Fig-1: OGTT SCREENING

Table I: Relation between Parity and GDM

PARITY	SCREENED	POSITIVE	PERCENTAGE
PRIMI	573	51	8.9%
G2	569	56	9.8%
G3	167	11	6.5%
G4 & ABOVE	43	9	***20.9%***

Of the total 1352, 573 mothers were primi para, 569 muti para, 167 third gravida and 43 higher order births 4 and above . The incidence is high in higher order births (20.9%) , which can be partly attributed to the increasing age in this group of mothers. and this observation was found to be statistically significant (P<0.001).

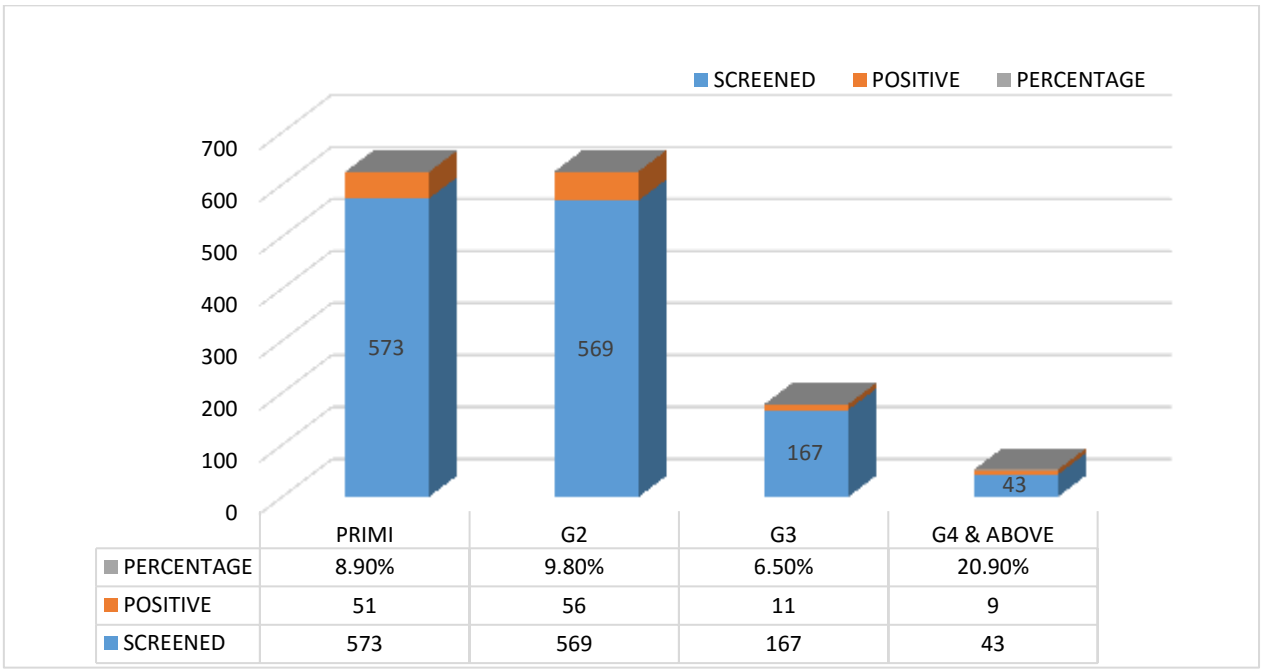

Fig-2: Relation between Parity and GDM

Table 2: Relation between Age and GDM.

MATERNAL AGE	SCREENED	POSITIVE	PERCENTAGE
< 20	56	3	5.3%
20 TO 30	1137	97	8.5%
30	159	27	***16.9%***

Majority of the mothers included in this study, belonged to the age group 20-30, in whom the incidence was 8.5%. However the incidence of GDM was higher in the age group above 30 years – 16.9%. The incidence of GDM was lowest in the age group less than 20 years- 5.3%.This observation was found to be statistically significant (P=0.001).

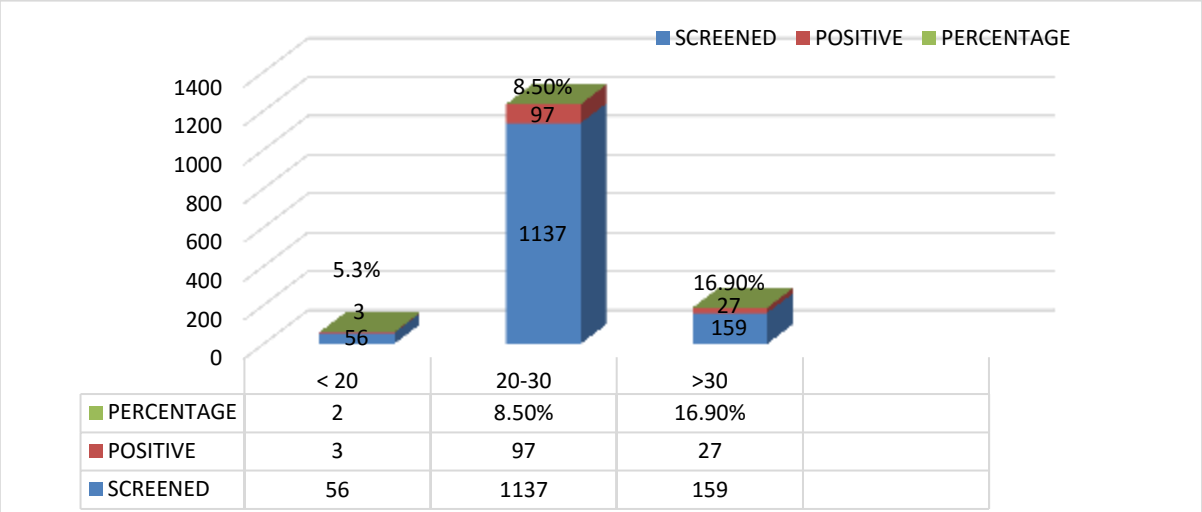

Fig-3:Relation between Age and GDM

Table 3: Trimester Wise Analysis

TRIMESTER	TOTAL NUMBER OF AN MOTHERS	POSITIVE FOR GDM SCREENING	PERCENTAGE
1ST TRIMESTER	201	3	2.3%
2ND TRIMESTER	956	97	76.3%
3RD TRIMESTER	195	27	21.2%

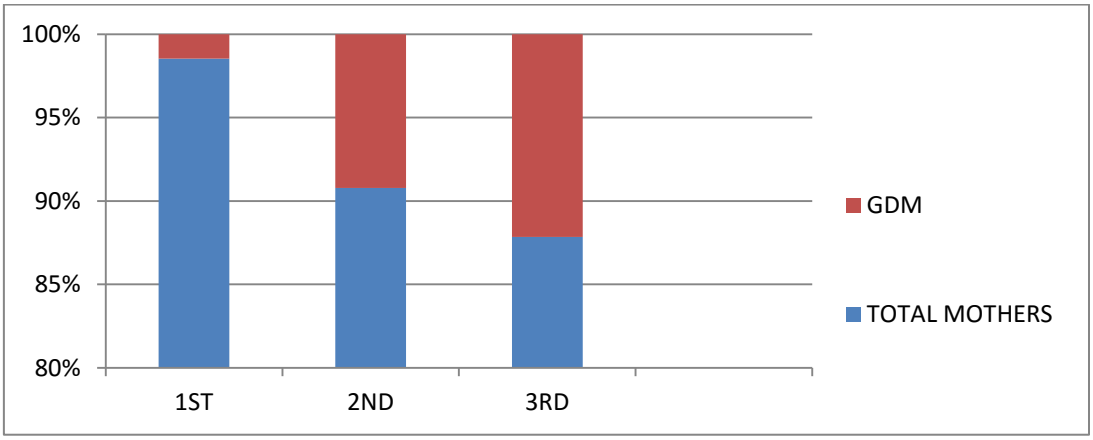

Fig-4: Trimester Wise Analysis

GDM screening revealed the incidence to be higher in second and third trimester being 76.3% and 21.2% respectively. This observation was found to be statistically significant (P< 0.001).

DISCUSSION

In this present study, among 1352 antenatal women, 127 mothers were found to have gestational diabetes mellitus; none of them was a known case of diabetes. They were admitted for detailed maternal and fetal evaluation. GDM showed an association with increasing age, higher parity, and most of the cases were found between 24 to 28 weeks of gestation. In this present study, the incidence of GDM was 9.39%. Compared to the observation of Rajesh Rajput *et al.;* [1] 7.1%, Siribaddana SH *et al.;* [2] 5.5%. In another study done by Seshiah *et al.;* [3] in tamil nadu, a total of 4151, 3960 and 3945 pregnant women were screened in urban, semi-urban and rural areas, respectively and GDM was detected in 17.8, 13.8 and 9.9 per cent women, respectively.

In our study, incidence of GDM increased significantly with increasing age. A similar association has been seen in earlier studies by American diabetes association [4] and Seshiah *et al.;* [5]. In our study the odds of a woman above 25 years developing GDM were 3.3 times more than a woman under 25 years of age. Seshiah *et al.;* [5] reported an odds ratio of 2.1 for women above 25 yr of age. Higher parity has been found to be associated with higher prevalence of GDM. Similar observations have been reported by AJOG [6]. Jang *et al.;* [7] found greater ratio of women with GDM in the group with parity >2, in comparison to primiparas. When the cut off value was reduced to 130mg %, the incidence raised to 11.4%. 155 mothers were screened positive with this cut off.

CONCLUSION

As the incidence of GDM and its associated morbidity is found to be increasing in the recent years, the cut off value for GDM can be decreased to 130mg/dl in order to find out high risk mothers who are likely to suffer the morbidities associated with GDM. Second trimester screening for GDM has to be made mandatory. Awareness regarding the higher incidence of GDM in elderly mothers has to be emphasized.

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