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To evaluate the prevalence of GDM in pregnant women of Akola district

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ABSTRACT:

Background & Method: Prospective study for screening the cases of Gestational diabetes mellitus among women visiting antenatal clinic at tertiary care centre. Department of Obstetrics & Gynecology GMC and Hospital Akola from October 2018 to May 2020 with sample size of 300. DIPSI GUIDELINES because it is single step procedure irrespective of last meal. Women with estimated duration of pregnancy 21 to 36 weeks of gestation, irrespective of age, parity and obstetric outcome, attending the antenatal clinic at tertiary care centre satisfying the inclusion criteria.

Result: In GDM Women, 27.27% is rural women and 72.72% is urban women. In our study, 9.52% of neonate had birth weight > 3.5 kg about 52.37% of neonate of GDM patients had birth weight between 2.5kg-3.5 kg. 11.76%had been operated for CPD, 5.88% had LSCS for Fetal Distress, 11.76% had Rpt. LSCS,PROM with failure of induction had 29.41%,NPOL had 17.64%, malpresentation had 11.76%, preeclampsia with poor bishop score had 11.76%. Mean Age 24.32 years, less than 20 years the Incidence is 0.0%, 78.93% is in between 21-40 years. 2 hr blood glucose > 140 mg%, incidence is 7.33%.

Conclusion: In our study GDM prevalence at >32 weeks was 77.27%. There was no previous follow up of these patients during first and second trimester in our institute. They had first ANC visits at primary health centre or sub-centre. Hence, we recommend strict screening for GDM should be started in first and second antenatal visit wherever possible. 09.52% of neonate had birth weight > 3.5 kg about 61.89% of neonate of GDM patients had birth weight between 2.5kg-3.5 kg.

Keywords: prevalence, pregnant, GDM & women.
Study Designed: Observational Study.

I. INTRODUCTION

As per the World Health Organization, gestational diabetes mellitus (GDM) is defined as any degree of glucose intolerance with onset or first recognized during pregnancy, may be associated with adverse maternal and perinatal outcome, and most frequent metabolic complication of pregnancy[1]. Prevalence of diabetes is increasing globally, particularly in developing world. Prevalence varying from 2% to 22% of all pregnancies and is associated with high morbidities and mortalities among mothers and infants.GDM constitutes 90%–95% of all cases of diabetes seen in pregnant women. Maternal and fetal complication with GDM are due to a number of confounding factors such as obesity, older maternal age[2].

Pregnancy induces progressive changes in maternal carbohydrate metabolism. As pregnancy advances, insulin resistance and diabetogenic stress due to placental hormones necessitates compensatory increase in insulin secretion[3]. When this compensation is inadequate GDM develops. Magnitude of complications in GDM are in equal to women with pre GDM.

Universal Screening is strongly recommended for the population ethnically proven to have high prevalence of type 2DM. In much of the world, GDM is diagnosed if 2 hrs Blood glucose ≥ 140 mg/dl. GDM woman has increased incidence of caesarian section, preeclampsia and macrosomia[4].

Increased maternal age and obesity are significant contributing genetic factors. In about 20% of GDM patients sluggish early insulin secretion cannot be demonstrated, due to increased elaboration / heightened/ sensitivity to one or more of the gestational counter hormones. Post receptor defect in the insulin signaling cascade appears to be

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a cause for the reduced insulin sensitivity in pregnant women with normal glucose tolerance and gestational diabetes[5].

IR substrate (IRS-1) expression is reduced in all pregnant women compared to non pregnant controls, this down regulation is due to cytokine tumor necrosis factor. Simply the pathophysiology of GDM has been related to excessive insulin antagonism by the pregnancy contrainsulin factors[6]. When maternal insulinogenic compensation is inadequate to offset these factors, gestational diabetes will supervene. Reduced β cell function that occurs in GDM women may be the indication for the future susceptability to diabetes[7].

II. MATERIAL & METHOD

Women with estimated duration of pregnancy 21 to 36 weeks of gestation, irrespective of age, parity and obstetric outcome, attending the antenatal clinic at tertiary care centre satisfying the inclusion criteria.

STUDY DESIGN / NATURE OF STUDY- Prospective study for screening the cases of Gestational diabetes mellitus among women visiting antenatal clinic at tertiary care centre of Department of Obstetrics & Gynecology of Government Medical College and Hospital, Akola, Maharashtra from October 2018 to May 2020 with sample size of 300.

SCREENING AND DAIGNOSTIC CRITERIA: DIPSI GUIDELINES because it is single step procedure irrespective of last meal. DURATION-

INCLUSION CRITERIA

- All the women with gestational age between 21to 36 weeks, irrespective of age parity, and previous obstetric outcome were included in this study, giving informed and valid consent for study.

EXCLUSION CRITERIA

- Women having gestation period below 21weeks, women with history of Diabetes Mellitus prior to the onset of pregnancy, multiple pregnancy and major chronic diseases including cancer will be excluded .
- Patients on drugs steroids, Calcium Channel blockers, Thiazides

Prospective Study was done in, govt. medical college Akola having deliveries of about 6000 to 7000 per annum, with daily antenatal patient attendance of 60 – 80. Randomly selected 300 patients in gestational age 21 – 36 weeks irrespective of age, parity and previous obstetric outcome by clinical examination height, 1st trimester weight, general examination, obstetric examination of the patient, from Oct 2018 to may2020 of 14 months duration. These women were booked for delivery at GMC Akola.

III. RESULTS

TABLE 01: INCIDENCE OF GDM

GDM	No. of Patients	Percentage
Yes	22	7.33
No	278	92.67
Total	300	100%

In our study, 2 hr blood glucose > 140 mg%, incidence is 7.33%.

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TABLE 02: AGE DISTRIBUTION OF GDM

S. No.	Age(yrs)	Non GDM	GDM	Percentage GDM
1	< 20	14	00	00
2	20-25	217	14	63.64%
3	26-30	32	05	22.73%
4	31-35	11	02	9.09%
5	36-40	4	01	4.54%
	TOTAL	278	22	100%

In our study, Mean Age 24.32 years, less than 20 years the Incidence is 0.0%, 78.93% is in between 21-40 years.

TABLE 03: INDICATION OF LSCS IN GDM

Indication	No.	Percentage
PREVIOUS LSCS WITH CPD	02	11.76
FETAL DISTRESS	01	5.88
PROM WITH FAILURE OF INDUCTION	05	29.41
NPOL	03	17.64
MALPRESENTATION	02	11.76
CPD	02	11.76
SEVERE PREECLAMPSIA WITH POORBISHOP SCORE	02	11.76
TOTAL	**17**	**100 %**

In our study, 11.76%had been operated for CPD, 5.88% had LSCS for Fetal Distress, 11.76% had Rpt. LSCS,PROM with failure of induction had 29.41%,NPOL had 17.64%, malpresentation had 11.76%, preeclampsia with poor bishop score had 11.76%.

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TABLE 04: BABY WEIGHT OF GDM MOTHER

Wt. in kg	N0.	%
<2.5 KG	08	38.09
2.6- 3 KG	04	19.04
3.1-3.5 KG	07	33.33
3.6- 4 KG	02	9.52

In our study, 9.52% of neonate had birth weight > 3.5 kg about 52.37% of neonate of GDM patients had birth weight between 2.5kg-3.5 kg.

TABLE 05: AREA WISE DISTRIBUTION OF GDM CASES:-

Area	GDM No	Percentage
Rural	6	27.27%
Urban	16	72.72%
Total.	22	100

In GDM Women, 27.27% is rural women and 72.72% is urban women.

IV. DISCUSSION

The prevalence of GDM varies in direct proportion to the prevalence of NIDDM in a given population or ethnic group. Prevalence of GDM in United States is 2 – 5%, less than 1% is noted in China, Srilanka, Italian Women.

The prevalence of abnormal Glucose Tolerance is highly dependent upon ethnicity (Hadden 1985[8] and Beischer et al 1991) [9] Stephen et al in 1981 found in his study that the incidence of gestational diabetes lies between 1 to 5%.Ranchod et al[10]found the prevalence of gestational diabetes in the Indian subcontinent 1.6% by applying WHO GTT Diagnostic criteria.

Ramachandran A[11] carried out screening for gestational diabetes in 950 patients in southern India showed the prevalence of GDM were 0.56%. Initially screening test was done with the 50g glucose load and values more than or equal to 140mg/dl were subjected to 3hr oral GTT. According to Mudaliar, the incidence of diabetes varies from 0.3 to0.7%.Incidence of GDM is 7.33% in our study. Incidence being on higher side because our being a tertiary care referral unit.

Siddigi T, Rossen.B, Mimouri F et al[12] in their study found incidence of PIH in GDM to be approximately 15% compared to 7.7% in controls. Compared with controls GDM patients showed higher prevalence of PCOS, greater clinical and biochemical evidence of hyperandrogenism and insulin resistance and higher prevalence of PIH. GDM developed in 20% of PCOS compared to 8.9% in controls[13]. Out of 33 GDM women 6.06% had been treated for PCOS. GDM accounts 30.6 % in women whose mother has GDM versus 3.5% in controls.

Gultonen and Terano (1993) reported that cases of PIH and preeclampsia contributed to the incidence two times more common among GDM than controls[14].

In our study preeclampsia was found in 50% of pregnant diabetic patients. Out of those patient screened who were found to be having GDM, 50% had preeclampsia. So preeclampsia was most common risk factor in our study. Again the incidence being on higher side because of tertiary care centre.

V. CONCLUSION

In our study GDM prevalence at >32 weeks was 77.27%. There was no previous follow

up of these patients during first and second trimester in our institute. They had first ANC visits at primary health centre or sub-centre. Hence, we recommend strict screening for GDM should be started in first and second antenatal visit wherever possible. 09.52% of neonate had birth weight > 3.5 kg about 61.89% of neonate of GDM patients had birth weight between 2.5kg-3.5 kg.

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