



PREVALENCE OF GESTATIONAL DIABETES.

Gynaecology

Dr Rabindranath Behra	MBBS, MD, FICMCH, FBIOH (Italy), FINEM, Assistant professor & head ART & MIS unit, Dept of Obstetrics and Gynaecology, PG Institute, Hi-Tech Medical College and Hospital, Health Park, Pandara Bhubaneswar, Odisha, -751025.
Dr Smita Sarangi*	MD (Obs & Gynae), Assistant professor, Dept of Obs & Gynae, Hi-Tech Medical College and Hospital, Bhubaneswar, Odisha *Corresponding Author
Dr Krishna Priyambada	MD (Obs & Gynae), Assistant Professor, Dept of Obs & Gynae, Kalinga Institute of medical science, Bhubaneswar, Orissa.
Dr Amrit Patojoshi	M.B.B.S., M.D, DPM. Professor, Dept of psychiatry, Hi-Tech Medical College and Hospital, Bhubaneswar, Odisha
Dr. Ajay Kumar Bakhla	M.B.B.S., M.D, DPM., Associate Professor, Department of Psychiatry, Rajendra Institute of medical sciences, Ranchi, Jharkhand, India-834009

ABSTRACT

Aims—Women with gestational diabetes are at high risk for developing diabetes; We evaluated the prevalence of gestational diabetes mellitus among pregnant women.

Methods—It was a cross sectional observational study. All subjects were assessed for inclusion – exclusion criteria, and on qualification they were requested to fill up Socio-demographic data sheet or asked verbally and filled up by investigators. The lab reports were recorded in tabulated form.

Results— sample consisted of 240 subjects with mean age of 25.78 years (± 4.68 years) and mean duration of 17.15 ± 6.55 weeks of pregnancy. There was family history of diabetes among 60 (25%) of the sample. and based on Hb1Ac cut off of above 6.5 a total of 42 sample size was qualified as GDM, consisting 17.5% of the total sample size.

Conclusions— This study finds a prevalence of 17.5% of gestational diabetes mellitus.

KEYWORDS

INTRODUCTION

GDM is defined as glucose intolerance of varying degree with onset or first recognition during pregnancy [1]. Prevalence of gestational diabetes during pregnancy ranges from 2.4 to 21 per cent of all pregnancies [2-4] and different types of outcome of gestational diabetes are found in the literature. Average weight gain during pregnancy depends on BMI of the women, which may range from 5 to 18 kgs. Age over 25 years, BMI over 25 and family history of diabetes are considered as risk factors for GDM.[2]

Impact of persistent weight gain and hyperglycemia may leads to many obstetrical and general medical complications. Intrauterine exposure to hyperglycemia during the critical period of fetal development programmes the development of pancreas negatively and affects the insulin secretory function [5]. Whereas the effects of GDM also includes depression and anxiety that may affects birth outcomes and neurodevelopment [6,7]. Hence we plan this study to explore the prevalence of gestational diabetes in ours population.

MATERIALS AND METHOD

The aim of the present study was to assess the prevalence of antenatal anxiety and depression. This study was conducted at Ante natal out patients department at Hi-Tech Medical College and Hospital, Bhubaneswar, which is a tertiary care medical college hospital of Odisha, India. The study protocol was approved by the institutional review board of Hi-Tech Medical College and Hospital, Bhubaneswar. It was a cross-sectional study carried out over a nine months period (January 2017 – September 2017). All consenting women who attended this hospital for antenatal check up during second or third trimester and or confinement were recruited. All recruited subjects who satisfied the inclusion criteria for the study, presence of any major co morbid medical or other illness was kept as exclusion criteria. Included patients were examined clinically after taking detailed history and their socio demographic variables. They were requested to complete a questionnaire about their socio-demographic data sheet and advised for a blood test for Hb1Ac. Their height weight records were updated and noted, thus body mass index (BMI) of the subjects was calculated and expressed in kg/m². Details of family history of

diabetes, history of previous pregnancies and the socio-economic status were obtained.

Tools

Socio-demographic Data Sheet: The socio demographic data sheet included age, religion, occupation, education and clinical information like duration of pregnancy and other obstetric history.

Procedure: It was a cross sectional observational study. All subjects were assessed for inclusion – exclusion criteria, and on qualification they were requested to fill up Socio-demographic data sheet or asked verbally and filled up by investigators. The lab reports were recorded in tabulated form.

Statistical Analysis:

The collected data of all patients was statistically analyzed, using Statistical Package for Social Sciences (SPSS, Inc., Chicago, Illinois) version 10.0. Data analysis included means and standard deviations for complete sample. Frequency analysis was used to determine the prevalence of GDM.

RESULTS

A total of 240 subjects were included for the study, Table 1 summarizes the sample characteristics. The mean age of the sample was 25.78 years (± 4.68 years) with minimum age of 18 years to a maximum age of 35 years in ours sample. The mean education years for the sample were found to be 10.44 ± 2.54 years. The mean duration of pregnancy was 17.15 ± 6.55 weeks, The sample consisted of mostly Hindu religion (n=185, 77.1%) and other non Hindu consisted only 22.9% (n=55) (Table-1).

Among the total sample size of 240 patients 157 patients (65.4 %) reported their occupation as housewife, and 34.6% were working class (n=83). There was 71 (29.6%) Primigravid females, 109 (45.4%) gravida 2, and 20 % Gravida 3. There was history of abortion among 43 (17.9%) of the sample and there was family history of diabetes among 60 (25%) of the sample. The BMI was categorized as underweight (BMI below 18.5) that consisted n=12 (5%); BMI 18.5 – 24.9 is

categorized as Normal, that consisted 164 sample (68.3%); Rest of the sample were either over weight or obese n=56 (23.3%) and n=8 (3.3%) respectively. Finally based on Hb1Ac cut off of above 6.5 a total of 42 sample size was qualified as GDM, consisting 17.5% of the total sample size. (Table -1)

DISCUSSION

We found a 17.5% of prevalence of GDM, It is found to in accordance with many other studies reporting similar prevalence rate for GDM ranges between 2.4 to 21 % [2-4]. We found prevalence of GDM on slightly higher side of this range of these referenced studies. Usually mild variation in prevalence may be attributable to sample selection and different lab test or different criteria used, as most of the earlier studies used blood sugar estimation fasting state and 2 hr after 75 gm of oral glucose. In most of studies a woman was considered to have GDM if the FPG ≥ 126 mg/dl and/or 2-hr plasma glucose value ≥ 140 mg/dl with the 75 gm oral glucose. There may be certain other transient or immediate dietary or metabolic or psychological factors which may influence and attribute to glucose measurement by these methods. Whereas measurement of Hb1Ac is known to provide average glucose level for previous two to three months. Hence we selected using Hb1Ac for this study, which may have advantage on older technique.

In ours study we also found very high prevalence of positive family history of diabetes that is 25%, and this may be one of the important factor that may contribute to the found prevalence of GDM in this study. In a large sample of 10283 participants the prevalence of diabetes among individuals who have a first-degree relative with diabetes were found to be 14.3% [8]. It is also noticeable that earlier studies showing higher prevalence are usually carried out at metropolitan background and higher socioeconomic class, where food habits and physical exercise may be compromised. But ours study from small city and middle lower socioeconomic class is alarming that prevalence of GDM or DM is spreading across socio demographic boundaries.

There are several studies that attributes high prevalence of type 2 DM may be linked to poor fetal growth specially in Indian people [9]. In future studies may be planned as longitudinal prospective studies to assess fetal growth monitoring among GDM and may be a control group of non GDM. In future we also need larger samples size, along with a matched control group, simultaneous assessment of quality of life, disability and burden of various other metabolic problems, and follow-up studies to know the longitudinal course of these problems.

CONCLUSION:

This study finds a prevalence of 43.5%. sexual dysfunctions, including 31.9 % loss of libido, 24.7% erectile dysfunction, 18.8% Pre mature ejaculations and 16.7% pain on ejaculations among men with urological chronic pelvic pain syndromes.

In future we need larger samples size, along with a matched control group, simultaneous assessment of quality of life, disability and burden of various other psychological problems, and follow-up studies to know the longitudinal course of these problems.

CONCLUSION

This study finds a prevalence of 17.5% of gestational diabetes mellitus among 240 pregnant women.

Table 1.

	Mean $\pm$ SD	Min	Max
age	25.78 $\pm$ 4.68	18	35
Years of education	10.44 $\pm$ 2.54	5	15
Duration of pregnancy (Weeks)	17.15 $\pm$ 6.55	8	36
Mean Hb1Ac	6.09 $\pm$ 0.64	5	8.30
		n	%
Religion	Hindu	185	77.1
	Others	55	22.9
Occupation	House wife	157	65.4
	Working	83	34.6
Gravida	Primi	71	29.6
	G2	109	45.4
	G3	48	20
	G4 or more	12	5

History of Abortion	Nil	197	82.1
	Yes	43	17.9
Family h/o Diabetes	Yes	60	25
	No	180	75
BMI	Under weight below 18.5	12	5
	Normal (18.5 – 24.9)	164	68.3
	Over weight (25 – 29.9)	56	23.3
	Obese (over 30)	8	3.3
GDM	No (below 6.5)	198	82.5
	Yes (above 6.5)	42	17.5

REFERENCES

1. American Diabetes Association. Gestational diabetes mellitus. Diabetes Care. 2004 Jan; 27 Suppl 1(s):88-90.
2. Seshiah V, Balaji V, Balaji MS, Paneerselvam A, Arthi T, Thamizharasi M, Datta M. Prevalence of gestational diabetes mellitus in South India (Tamil Nadu)—a community based study. J Assoc Physicians India. 2008 May; 56:329-33.
3. Seshiah V, Balaji V, Balaji MS, Sanjeevi CB, Green A. Gestational diabetes mellitus in India. J Assoc Physicians India. 2004;52:707-11
4. Zargar AH, Sheikh MI, Bashir MI, Masoodi SR, Laway BA, Wani AI, et al. Prevalence of gestational diabetes mellitus in Kashmiri women from the Indian Subcontinent. Diabetes Res Clin Pract. 2004;66:139-45.
5. Van Assche FA, Horemans K, Aerts L. Long term consequences for offspring of diabetes during pregnancy. Br Med Bull 2001;60:173-82.
6. Bowen A, Muhajarine N. Antenatal depression. Can Nurse 2006;102(9):26-30.
7. O'Donnell K, O'Connor TG, Glover V. Prenatal stress and neurodevelopment of the child: focus on the HPA axis and role of the placenta. Dev Neurosci. 2009; 31:285-292.
8. Annis AM, Caulder MS, Cook ML, Duquette D. Family history, diabetes, and other demographic and risk factors among participants of the National Health and Nutrition Examination Survey 1999-2002. Prev Chronic Dis. 2005 Apr;2(2):A19.
9. Yajnik et al. Fetal growth and glucose and insulin metabolism in four year old Indian children. Diabetic Medicine 1995;12:330-6.