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RESEARCH ARTICLE

Gestational Diabetes mellitus effects on Macrosomia and risk of Developing Type 2 Diabetes in Tertiary care hospital

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ABSTRACT:

Objectives: Gestational diabetes mellitus (GDM) and its risk of developing macrosomia (larger than normal birth weight) and Type 2 diabetes. This study was undertaken to determine the prevalence of GDM and risk factors associated with in urban women.

Methods: This study which includes prospective observational study and effects on macrosomia and risk of developing Type 2 diabetes. The study was done in a gynecology department and carried out for a period of one year both in-patient and out-patients by using chi-square analysis for all statistical analysis. A detailed questionnaire was prepared to assess the patients.

Results: Total of 1100 pregnant ladies being studied, 150 mothers had gestational diabetes mellitus, 950 mothers had Non-gestational diabetes. Gestational diabetes was seen more in the age group from 18-25(34.6%) of the population was seen less from the group from 36-40(10%). 36 gestational diabetes mellitus Patient had babies with macrosomia (24%). There were 85 babies born with macrosomia among the mothers who did not have gestational diabetes mellitus (8.94%).

Conclusion: The study investigated the possible association of gestational diabetes mellitus and the risk of developing Type 2 diabetes mellitus among mothers. study suggested that gestational diabetes mellitus is a significant risk factor for macrosomia. Women who had gestational diabetes mellitus had 24% macrosomia delivery than women without gestational diabetes mellitus (8.94%)

KEYWORDS: Gestational diabetes, macrosomia, type 2 diabetes, Pregnant women.

INTRODUCTION:

Gestational diabetes mellitus is defined as having high blood glucose levels during pregnancy. It usually begins during the 24th week of pregnancy. However, women at high risk are usually screened during the first trimester.^(1,2) as a consequence of the body's inability to make and use all the insulin it needs during the gestation period (American Diabetes Association, 2014). Gestational diabetes mellitus can have significant impact on birth outcomes, especially babies having macrosomia.^(3,4)

I examined the correlation between gestational diabetes mellitus among Patients and its impact on macrosomia along with the risk of developing Type 2 diabetes among mothers. In addition, the study compared the prevalence of macrosomia among Patients diagnosed with and without gestational diabetes mellitus.^(5,6) It also categorized the prevalence of women who had gestational diabetes mellitus and are at risk for developing Type 2 diabetes. research questions and hypotheses, purpose of the study, assumptions, limitations, delimitations, and significance of the study.⁽⁷⁾ All pregnant women have some insulin resistance during late pregnancy. However, some women have insulin resistance even before they get pregnant, usually because they are overweight. These women start

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pregnancy with an increased need for insulin and are more likely to have gestational diabetes.⁽⁶⁾

High blood glucose levels because of gestational diabetes is not under control, baby will also have high blood glucose. so baby's pancreas will have to make extra insulin to control the high blood glucose. The extra glucose in baby's blood is stored as fat. Untreated or uncontrolled gestational diabetes can cause problems for baby, such as being born with a larger than normal body. A condition called macrosomia. which can make delivery difficult and more dangerous for baby. having low blood glucose also called hypoglycemia. right after birth having breathing problems a condition called respiratory distress syndrome having a higher chance of dying before or soon after birth Your baby also might be born with jaundice. Jaundice is more common in newborns of mothers who had diabetes during their pregnancy^(9,10)

MATERIALS AND METHODS:

This was a quantitative prospective observational study that was done to compare the prevalence of macrosomia among women diagnosed with and without gestational diabetes mellitus; and to determine the prevalence of women who are at risk for developing Type 2 diabetes mellitus after being diagnosed with gestational diabetes mellitus. This chapter describes the instrument used to collect the data, study population, characteristics of the participants, instrumentation, data analysis, and ethical considerations of the data. Primary as well as secondary data analysis of questionnaires to establish whether knowledge among pregnant women can decrease the risk for gestational diabetes mellitus and macrosomia. It was utilized to verify if there is an association between two or more variables at one particular point in time of the gestational period. The PRAMS data were considered as a secondary data because the current study used questions from PRAM's database as well as analyzed data that were formerly collected by PRAMS to answer different study questions.

The study was carried out to examine if the prevalence of macrosomia is higher among women with gestational diabetes mellitus than those without gestational diabetes mellitus. The study also determined if there is an association between gestational diabetes mellitus and the risk of developing Type 2 diabetes mellitus among mothers. Details of selection of participants, characteristic of the participants, instrumentation, and the target population are discussed separately.

RESULTS AND DISCUSSION:

Total of 1100 pregnant ladies being studied. Gestational diabetes patients 150(13.63%), without gestational diabetes patients 950 (86.36%) (Table 1)

Total of 150 pregnant ladies being studied with gestational diabetes was seen more in the age group from 18-25(34.6%) of the population was seen less from the group from 36-40(10%). (Table 2)

Total of 950 pregnant ladies being studied with Non-gestational diabetes was seen more in the age group from 18-25(42%) of the population was seen less from the group from 36-40(08%). (Table 3)

Total of 1100 pregnant ladies being studied, 150 mothers had gestational diabetes mellitus, 950 mothers had Non-gestational diabetes. 36 gestational diabetes mellitus Patient had babies with macrosomia (24%). There were 85 babies born with macrosomia among the mothers who did not have gestational diabetes mellitus (8.94%). (Table 4)

Total of 1100 pregnant ladies being studied, 150 mothers had gestational diabetes mellitus, 950 mothers had Non-gestational diabetes Therefore, the prevalence of gestational diabetes among this population was 13.63%. The overall prevalence of macrosomic babies in the study population was 11%. (Table 5)

Out of 150 gestational diabetes patients, 3(2%) women developing Type 2 diabetes mellitus after delivery (Table 6).

Out of 150 gestational diabetes patients delivered 36 Babies born with macrosomia. Macrosomia was seen more in the age group from 36-40 (38.8%). macrosomia was seen less group from 18-25(11.1%). Out of 950 Non-gestational diabetes patients delivered 85 babies with macrosomia. Macrosomia was seen more in the age group from 36-40 (37.6%), macrosomia was seen less in the age group from 18-25 (10.5%). (Table 7)

Table 1. PARTICIPANTS DISTRIBUTION

Participants	No. of Patients 1100	% of Patients
Gestational Diabetes	150	13.63
Non-Gestational diabetes	950	86.36

Table 2. DISTRIBUTION BASED ON AGE (Gestational diabetes patients)

Age	No.of Patient N=150	% of Patients	P Value
18-25	52	34.6	<0.0001
26-30	48	32	
31-35	35	23.3	
36-40	15	10	

Table 3. DISTRIBUTION BASED ON AGE (Non-Gestational diabetes patients)

Age	No. of Patients N=950	% of Patients	P Value
18-25	399	42	<0.0001
26-30	266	28	
31-35	209	22	
36-40	76	08	

Table 4. DISTRIBUTION BASED ON MACROSOMIA

Participants	No. of Patients 1100	Macrosomia	% of Macrosomia Patients	Non-Macrosomia Patients	% of Non- Macrosomia	P Value
Gestational Diabetes	150	36	24	114	76	<0.0001
Non-Gestational diabetes	950	85	8.94	865	91.05	

Table 5. DISTRIBUTION BASED ON MACROSOMIA (gestational diabetes and Non gestational diabetes)

Participants	No. of Patients 1100	Macrosomia	Total Macrosomia (N ₁ + N ₂)	% of Macrosomia	P Value
Gestational Diabetes (n ₁)	150	36	121	11	<0.0001
Non-Gestational diabetes (n ₂)	950	85			

Table 6. DISTRIBUTION BASED ON RISK OF DEVELOPING TYPE 2 DIABETES

Participants	Total No.of Patients	No. of Patients Developed Type 2 Diabetes	% of Patients Developing Type 2 Diabetes
Gestational Diabetes Patients	150	03	02

Table 7. AGE DISTRIBUTION BASED ON MACROSOMIC BABIES MOTHERS

Participants	Age	Macrosomia	% of Macrosomia	P Value
GESTATIONAL DIABETES	18-25	4	11.1	0.7245
	26-30	8	22.2	
	31-35	10	27.7	
	36-40	14	38.8	
	TOTAL	36	99.8	
NON- GESTATIONAL DIABETES	18-25	9	10.5	0.4743
	26-30	20	23.5	
	31-35	24	28.2	
	36-40	32	37.6	
	TOTAL	85	99.8	

CONCLUSION:

This study was conducted to explore whether the prevalence of macrosomia is higher among women with gestational diabetes mellitus than those without gestational diabetes mellitus. The study also investigated the possible association between gestational diabetes mellitus and the risk of developing Type 2 diabetes mellitus among mothers. Results from this study suggested that gestational diabetes mellitus is a significant risk factor for macrosomia. Women who had gestational diabetes mellitus had 24% macrosomic delivery than women without gestational diabetes mellitus (8.94%). In addition, women who were diagnosed with gestational diabetes mellitus are 2% at risk of developing Type 2 diabetes mellitus.

ABBREVIATIONS:

PRAMS- Progress Recording And Monitoring System

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