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Research Article

**OUTCOME OF PREGNANCY IN FEMALES WITH
UNDIAGNOSED GESTATION DIABETES MELLITUS**¹Dr Aqsa Choudhary, ²Dr Masooma Batool, ²Dr Muntaha Munawar¹House Surgeon, Ghurki Trust Teaching Hospital Lahore²House Surgeon, Sheikh Zayed Hospital RYK**Article Received:** February 2019**Accepted:** March 2019**Published:** April 2019**Abstract:**

Objective: This study aimed to interrogate the consequences of macrosomia & comparison of the risk aspects linked with the maternal complications as well as issues of neonates among females suffering from suffering from GDM (Gestation Diabetes Mellitus) & females with no GDM and to find out the importance for the screening of gestation diabetes mellitus before delivery of child.

Methodology: We took the samples of blood from one hundred and twenty mothers of neonates suffering from macrosomia within twenty-four hours after child birth & evaluated the levels of HBA1c (glycohemoglobin). The detection of gestation diabetes mellitus was depending upon the levels of glycohemoglobin greater than 5.90%.

Results: We found 23 mothers with glycohemoglobin level greater than 5.90%. Complications of maternal and neonates were not varying significantly in undiagnosed gestation diabetes mellitus females & females with no gestation diabetes mellitus. Excluding the age of mother, her parity & body mass index, all other factors of risk for the GDM development ere not different in both groups significantly.

Conclusions: The rate of the maternal complications and problems of neonates have association with the birth of the neonate with macrosomia and these are no different in the mothers of both groups. So, the screening for the females having pregnancy for gestation diabetes mellitus is not necessary.

KEY WORDS: GDM, diabetes, mellitus, complications, methodology, parity, body mass index, neonate, maternal.

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INTRODUCTION:

The intolerance to level of glucose which initially appears in the period of pregnancy is GDM (gestation diabetes mellitus) [1]. The occurrence of gestation diabetes mellitus in USA ranges 1.40% -12.3% & 2.30%-6.30% in Iran [2]. The estimated weight of the fetal higher than the gestational period is macrosomia which is the most common complication of gestation diabetes mellitus. This is the recognition of the professionals that both mother & infant with macrosomia are at high risk for acquiring injury. But, checkups of the morbidity of neonates are very retrospective [3].

If we look through the last thirty years, we will not find any consensus on particular strategies of screening, screening standard or detection and treatment of this problem has any impact on the outcome of fetal. This study evaluated the availability of gestation diabetes mellitus, the vitality of the risk factors of gestation diabetes mellitus and associated complications in the females of our country, Pakistan having neonates with macrosomia.

METHODOLOGY:

The analysis of females having neonates with macrosomia, on the basis of the Alexander curve [4], carried out in Mayo Hospital, Lahore. This case study started in April 2018 and lasted up to January of 2019. Ethical committee of the hospital gave the approval to conduct this case work. The estimation of gestation period performed by either from the duration of last menses period, date of the initial ultrasonography [at ten to twenty weeks] or system of Ballard scoring. Females with acknowledged diabetes before the pregnancy period or discovered with gestation diabetes mellitus at the pregnancy week of < 34 were

not the part of this case study. Every female gave his sample of blood for testing and evaluation of levels of HbA1c carried out within one day after the delivery of sample. The samples of blood gathered in a tube having EDTA and deposited at four °C temperature before the examination. The mixing of the sample carried out manually for complete 1 minute, HPLC test carried out for the analysis of proteins.

The glycohemoglobin level higher than 5.90% was the standard for the detection of the gestation diabetes mellitus. Information about the age of mother, her height, weight, delivery mode and blood pressure gathered and the data recording of weight of neonate, scores of Apgar at 1 & 5 minutes, complication of neonate and admissions in the ICU carried out. BP of equal or greater than 140/90 mmHg was indicating the hypertension in the females. The PS V. 14 was in use for the analysis of the collected information. Average and SD values were in use to express the results. The utilizations of other tests carried out for different purposes.

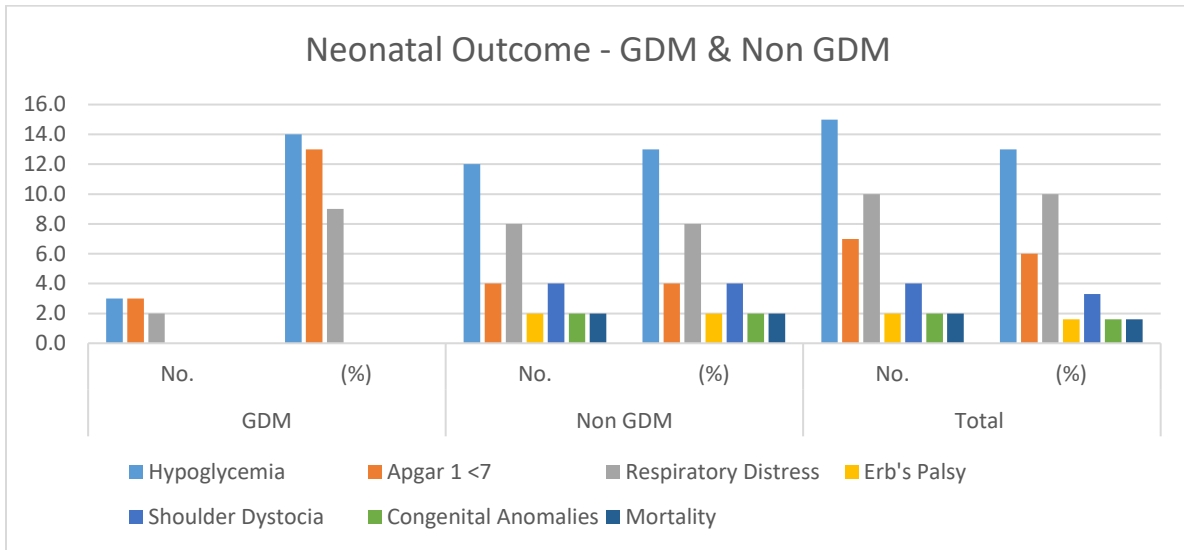
RESULTS:

Out of total 120 females with infants suffering from macrosomia, in 19.0% (n: 23) found with glycohemoglobin value of higher than 5.90%. The average weight of all 120 neonates at the time of birth was 4133 ± 287.0 grams at 38.730 ± 1.370 gestation week. The average weight of the neonates of gestation diabetes mellitus and no GDM was 4176 ± 319 grams & 4122 ± 280 grams correspondingly. The average age of gestation of the neonates of gestational diabetes mellitus mothers was 38.130 ± 1.540 weeks & 38.870 ± 1.3 weeks in no gestational diabetes mellitus females. The outcomes of infants are available in Table-1.

Table-I: Neonatal outcome among macrosomia infants delivered from GDM and non-GDM mothers.

Outcome	GDM		Non GDM		Total		P Value
	No.	(%)	No.	(%)	No.	(%)	
Hypoglycemia	3.0	14.0	12.0	13.0	15.0	13.0	N-Sig*
Apgar 1 <7	3.0	13.0	4.0	4.0	7.0	6.0	N-Sig*
Respiratory Distress	2.0	9.0	8.0	8.0	10.0	10.0	N-Sig*
Erb's Palsy	0.0	0.0	2.0	2.0	2.0	1.6	N-Sig*
Shoulder Dystocia	0.0	0.0	4.0	4.0	4.0	3.3	N-Sig*
Congenital Anomalies	0.0	0.0	2.0	2.0	2.0	1.6	N-Sig*
Mortality	0.0	0.0	2.0	2.0	2.0	1.6	N-Sig*
Total	23.0	19.2	97.0	80.8	120.0	100.0	N-Sig*

*Not significant

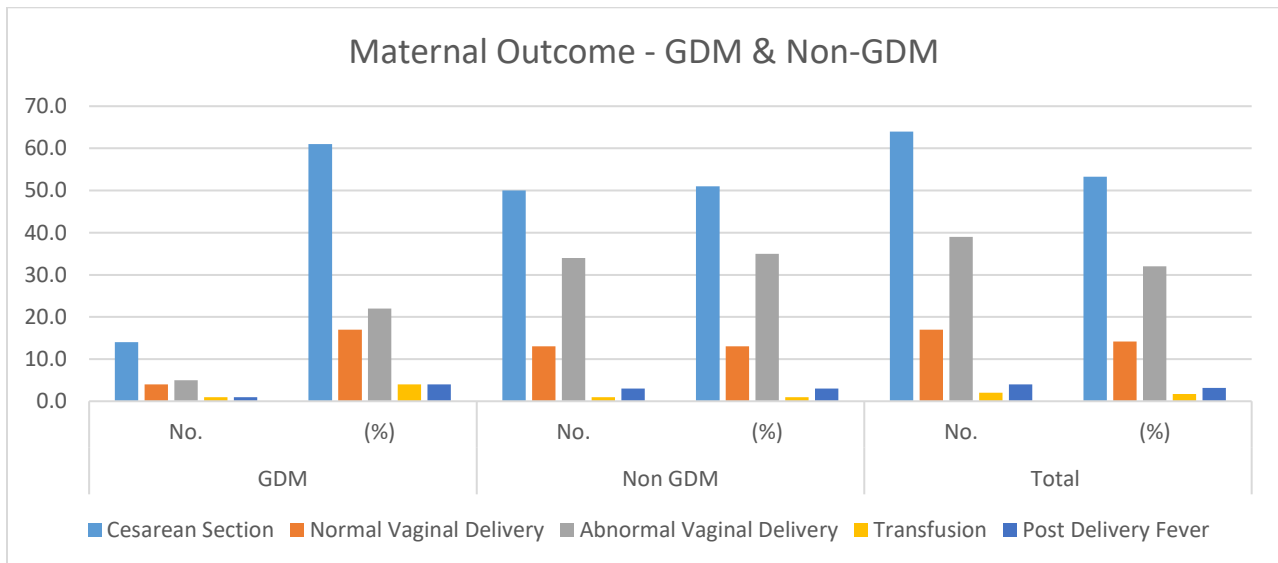


Total 53.30% (n: 54) fetuses with macrosomia were the outcome of cesarean section. The maternal outcomes are available in Table-2. The application of analysis through linear regression carried out. The association among the maternal glycohemoglobin level & weight of the infant at the time of birth was not significant.

Table- II: Maternal outcome among GDM and non-GDM mothers.

Characteristics	GDM		Non GDM		Total		P Value
	No.	(%)	No.	(%)	No.	(%)	
Cesarean Section	14.0	61.0	50.0	51.0	64.0	53.3	N-Sig*
Normal Vaginal Delivery	4.0	17.0	13.0	13.0	17.0	14.2	N-Sig
Abnormal Vaginal Delivery	5.0	22.0	34.0	35.0	39.0	32.0	N-Sig
Transfusion	1.0	4.0	1.0	1.0	2.0	1.7	N-Sig
Post Delivery Fever	1.0	4.0	3.0	3.0	4.0	3.2	N-Sig

*Not significant



DISCUSSION:

In current study, we were not able to find any benefit of screening for gestational diabetes mellitus in the time of pregnancy period due to the complications and problems among undiscovered gestation diabetes mellitus and healthy controls were not different. In USA, the detected method for gestation diabetes mellitus & screening is 2 step method as conducted in Iran. The starting step fifty gram GCT test (Glucose Challenge Test). The females with level of glucose in plasma > 140 mg/dL get a 100 gram 3-h OGTT (Oral Glucose Tolerance Test) [4]. We calculated levels of HgbA1c to test the GDM. The measures of glycohemoglobin, mean levels of glycemic over the previous two to three months. In females with the development of gestation diabetes mellitus, the metabolism of glucose develops impaired in a very small duration after twenty-four weeks of gestation; so, mothers with a pregnancy period of higher than 34 weeks were the part of this case study.

Nielsen concluded the normal levels of glycohemoglobin from 4.40% to 5.60% in later pregnancy period [5]. Rohulfings' in his case study concluded the glycohemoglobin to have great sensitivity (83.40%) & specificity (84.40%) for discovery of unidentified diabetes at a glycohemoglobin cut-off above 5.60% [6]. In other case work, Radder stated the levels of glycohemoglobin as 3.40% to 5.90% in healthy females with pregnancy [7]. Other research work, the reference intervals of glycohemoglobin was 4.0% to 5.50% for women with pregnancy and no diabetes [8]. In current casework, on the basis of study of Radder, the highest concluded level of glycohemoglobin in the healthy females with pregnancy was 5.90% which was the cut off point for HbA1c. In current case work, 19.0% (n: 23) patients found with HbA1c higher than 5.90% and they under consideration of having gestational diabetes mellitus.

This discovered value is same with the rate concluded by Berard (19.0%), a research work assessed mothers of 100 infants with macrosomia for gestational diabetes mellitus [9]. We found no significant disparities of complications among both groups. But the frequency of the cesarean section was very high in the females suffering from GDM. The rate of cesarean surgery in females with GDM was 33.60% in comparison with the 20.20% prevalence in the group of healthy females but this disparity was not much significant. Nevertheless, this outcome suggests that a detection of gestational diabetes mellitus changes the mode of delivery to cesarean section. We were unable

to find the any important disparities among rates of hypertension, irregular delivery through vagina, transfusion & high temperature after delivery among females of both groups.

The risk factor of gestational diabetes mellitus as age of female greater than 25 years, having body mass index of ≥ 30.0 & parity greater than 3 were different in the females of both groups. In other case work of Naylor, only the age of mother ≥ 30.0 years, body mass index ≥ 25.0 , and parity of female ≥ 3 were different in the females of both groups [10]. The factors of risks were same as compared to the study of Naylor's case work. The previous history of macrosomia, miscarriage, congenital abnormalities, hypertension and history of family in DM were not different in the females of both group. The analysis of linear regression was not able to show an association between HbA1c level of mother & weight of neonate at the time of birth. This outcome is steady with some other case works [11] & inconsistent with some other works [2]. In the last, weight after delivery was in use by this research work which was no showing the normal actual weight which can be a limitation because the gain of weight is not similar in all females.

CONCLUSION:

This research work displayed that after the delivery of the neonate with macrosomia, there is no difference in the rate of maternal and neonate abnormalities among the pregnant females of both groups. The results of this research work did not recommend the universal screening for gestation diabetes mellitus for every pregnant female because it is time consuming and costly.

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