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ANALYSIS OF PREVALENCE AND RISK FACTORS OF DIABETES IN PREGNANCY AMONG LOCAL FEMALE POPULATION OF PAKISTAN

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Abstract:

Introduction: As the incidence of diabetes continues to rise and increasingly affects individuals of all ages, including young adults and children, women of childbearing age are at increased risk of diabetes during pregnancy. *Objectives of the study:* The main objective of the study is to analyze the prevalence and risk factors of diabetes in pregnancy among local female population of Pakistan.

Material and methods: This cross sectional study was conducted in Islamic International Medical College Rawalpindi (RIU) during June 2018 to December 2018. The data was collected from 100 female patients. We designed a study to associate maternal BMI and GWG with pregnancy outcomes in local women of Pakistan with GDM and examine whether these narrower pregnancy weight gain recommendations are predictive of adverse perinatal outcomes in Pakistani population.

Results: According to the pre-pregnancy BMI, 96 women (11.5%) were underweight, 558 (67.1%) were of normal weight, 134 (16.1%) were overweight and 44 (5.3%) were obese. The level of glycated hemoglobin was significantly higher in the overweight and obese groups than in normal weight and underweight groups (P < 0.05). In addition, birth weight was significantly higher in overweight or obese women than in underweight women (P < 0.05).

Conclusion: *It is reasoned that high pre-pregnancy BMI and unnecessary GWG are related with higher frequencies of LGA, and in addition other unfavorable results in Chinese ladies with GDM.*

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INTRODUCTION:
As the incidence of diabetes continues to rise and increasingly affects individuals of all ages, including young adults and children, women of childbearing age are at increased risk of diabetes during pregnancy. The epidemic of diabetes is not limited to western countries, but reaches worldwide affecting individuals in countries such as India and China [1]. A recent study estimates the global prevalence of diabetes in 2000 at 2.8%, translating into 171 million individuals with diabetes, and projects that in 2030 the prevalence will be 4.4%, translating into 366 million individuals with diabetes worldwide. The increased prevalence is attributed to the aging population structure, urbanization, the obesity epidemic and physical inactivity [2].

At first glance, the obesity epidemic driven by changes in lifestyle appears to be the driving force behind the increased prevalence of diabetes. The current epidemic of obesity and overweight is widespread, affecting both children and adults of many ethnic backgrounds in North America and internationally [3]. It has been demonstrated that maternal obesity and inordinate gestational weight pick up (GWG) are related with unfriendly obstetric and neonatal results including unconstrained fetus removal, gestational diabetes mellitus (GDM), cesarean conveyance, preeclampsia, neonatal macrosomia, and agent and soporific entanglements [4].

To help ideal pregnancy results, the World Health Organization (WHO) prescribed that the Institute of Medicine (IOM) create rules for weight pick up amid pregnancy. In any case, the IOM suggestions on gestational weight pick up depend on pre-pregnancy BMI without mulling over various race/ethnicity, age, or existing pregnancy inconveniences [5]. Ladies with GDM are at expanded danger of maternal and fetal intricacies including preeclampsia, preterm birth, cesarean segment and conveyance of huge for gestational age (LGA) newborn children [6].

Objectives of the study
The main objective of the study is to analyze the prevalence and risk factors of diabetes in pregnancy among local female population of Pakistan.

MATERIAL AND METHODS:
This cross sectional study was conducted in Islamic International Medical College Rawalpindi (RIU) during June 2018 to December 2018. The data was collected from 100 female patients. We designed a study to associate maternal BMI and GWG with pregnancy outcomes in local women of Pakistan with GDM and examine whether these narrower pregnancy weight gain recommendations are predictive of adverse perinatal outcomes in Pakistani population. Student's t-test was performed to evaluate the differences in roughness between group P and S. Two-way ANOVA was performed to study the contributions. A chi-square test was used to examine the difference (SPSS 19.0 for Windows, SPSS Inc., USA).

RESULTS:
According to the pre-pregnancy BMI, 96 women (11.5%) were underweight, 558 (67.1%) were of normal weight, 134 (16.1%) were overweight and 44 (5.3%) were obese (Table 1). The level of glycated hemoglobin was significantly higher in the overweight and obese groups than in normal weight and underweight groups (P < 0.05). In addition, birth weight was significantly higher in overweight or obese women than in underweight women (P < 0.05). There were no significant differences between the four pre-pregnancy BMI categories in maternal age, parity, height and gestational weeks (Table 1).

Table 01: Gestational weight gains in pregnancy

Variables	Excessive GWG (N = 293)		
	N (%)	AOR (95% CI)	P
Cesarean section[a]	177 (60.4)	1.60 (1.15–2.23)	0.005
PPH[a]	60 (20.5)	1.44 (0.94–2.19)	0.094
Preterm delivery[b]	6 (2.0)	0.63 (0.23–1.73)	0.369
PPROM[b]	51 (17.4)	1.01 (0.66–1.54)	0.965
GHT[c]	11 (3.8)	1.23 (0.50–2.98)	0.655
Macrosomia[c]	39 (13.3)	1.94 (1.11–3.38)	0.020
SGA[b]	7 (2.4)	0.78 (0.29–2.08)	0.615
LGA[b]	97 (33.1)	1.31 (0.92–1.85)	0.133

CI, confidence interval; GWG, gestational weight gain; PPH, postpartum hemorrhage; PPROM, preterm premature rupture of membranes; GHT, gestational hypertension; SGA, small for gestational age; LGA, large for gestational age. AORs are presented relative to the adequate GWG group.

DISCUSSION:

As obesity and diabetes increasingly affect young adults and women of childbearing age, understanding the public health impact of diabetes during pregnancy and its affect on infant health becomes important. Exposure to maternal diabetes later in pregnancy is associated with high birth weight, increased childhood and adult obesity and increased risk of type 2 diabetes therefore, the diabetic intrauterine environment may not only be a result of the obesity and diabetes epidemics, it may be partially responsible and currently fueling the epidemics [5]. Moreover, because both obesity and diabetes disproportionately affect minority women including minority women of childbearing age, if the intrauterine environment is contributing to the epidemics, it perpetuates and widens health disparities between racial and ethnic groups [7]. Maternal, perinatal and neonatal complications are strongly associated with GDM. The frequency of GDM in China has expanded since 2000 and this has turned into a critical open issue. A Chinese national review had detailed predominance of the IADPSG criteria-characterized GDM of 14.7% out of 2004– 2009 [8]. This occurrence of GDM is like different investigations in Asian populaces, yet higher than the rate of GDM in the United Kingdom (3.5%) and the United States (8.6%). Occurrence of GDM appears to rely upon variables, for example, ethnicity and geological areas. In 2007 through 2008, about 60% of conceptive age American ladies were accounted for to be overweight or corpulent, with the predominance of overweight or obesity announced at around 21.4% in our investigation [9]. In spite of the fact that the occurrence of obesity is bring down in Chinese and Asian ladies contrasted and different ethnicities, past investigations have demonstrated that Asians have a significantly higher danger of GDM, even at a low BMI [10].

CONCLUSION:

It is reasoned that high pre-pregnancy BMI and unnecessary GWG are related with higher frequencies of LGA, and in addition other unfavorable results in Chinese ladies with GDM.

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