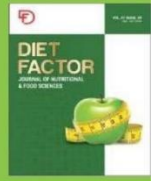




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Assessment of Biochemical Profile Among Patients of Gestational Diabetes Mellitus

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ABSTRACT

Gestational diabetes mellitus is common but a major health problem in pregnant women. The rate of gestational diabetes mellitus has increased globally from 3% to 14% within last 10 years. **Objective:** To assess the biochemical profile of women with gestational diabetes mellitus visiting public hospitals, Lahore city. **Methods:** A cross-sectional study was carried out at gynae department of Sir Ganga Ram Hospital, Lahore and Services Institute of Medical Sciences, Lahore within 4 months using the convenient sampling technique. The data of 100 patients were collected through pre-tested questionnaire. Data were analyzed statistically using SPSS version 21.0. Frequencies were calculated, Pearson's chi-square test was applied. **Results:** According to the results, 81% patients were not having insulin therapy during pregnancy and only 19% were having insulin. 73% patients had OGTT values above 200 mg/dl during pregnancy while 27% had values above 140 mg/dl. An insignificant association was found between HbA1c test results and cereal food (paratha) consumption ($p < .72$). **Conclusions:** Study concluded that more than half of female had high OGTT rate. Improper medication, irregular treatment and lack of proper medication to control diabetes during pregnancy were a major cause of high clinical test values of diabetes in pregnant women. There was no significant association between HbA1c test results and cereal food consumption.

INTRODUCTION

Gestational diabetes mellitus (GDM) is common but a major health problem in pregnant women. The rate of gestational diabetes mellitus has increased globally from 3% to 14% within last 10 years [1]. In Pakistan, the rate of gestational diabetes mellitus is increasing day by day [2]. Gestational diabetes mellitus is identified to be with high rates of harmful maternal and neonatal results [3]. Therefore, it is recommended to treat any form of gestational diabetes mellitus seriously [4]. It is suggested that early diagnosis and stringent control of blood glucose levels during overall pregnancy duration can reduce maternal and fetal problems [5]. Many clinicians and health care providers screen all pregnant females in their practices for gestational diabetes mellitus on routine basis [6]. A board of above 200 specialists globally has suggested some steps for gestational diabetes mellitus test and these suggestions are based on oral glucose tolerance tests [7]. The diagnosis of this disorder is often based on the outcomes of oral glucose tolerance tests [8]. Particular treatment, containing the treatment to reduce the concentration of glucose and specific obstetric management is suggested to lower the risks for mothers and their offspring during pregnancy and later in life [9]. It is confirmed that treatment of gestational diabetes mellitus has good effects on some problems of pregnancy [10]. Gestational diabetes mellitus which is not treated or not diagnosed brings major risks of perinatal illnesses and serious perinatal issues in all stages of severity of the disease [11]. High rates of



morbidity and mortality are found in patients with uncontrolled diabetes mellitus during pregnancy [12]. The most important feature in diabetes management is self-monitoring. Monitoring the blood glucose levels four to seven times in a day is a useful contributor to improve outcomes of pregnancy as well as perinatal outcomes [13]. It is recommended in nutrition practice guideline to monitor the blood glucose levels four times per day at the beginning [14]. The rate of occurrence of progressing gestational diabetes mellitus in pregnant females is becoming greater worldwide [15]. The rate of occurrence of gestational diabetes mellitus is outlined as 2-9% of overall pregnancies in Europe [16]. The detected rate of gestational diabetes mellitus in India was 17.8% urban females, in semi urban 13.8 %, 9.9 % in rural areas [17]. Various risk factors are associated with progression of this disease [18].

The researcher was aimed to assess the biochemical profile of women with gestational diabetes mellitus and the possible health hazards among women with pregnancy visiting public hospitals, so that awareness could be created for prevention of the factors causing this disease through health education. And the mortality and complications due to gestational diabetes mellitus in pregnant women could be reduced.

METHODS

A cross-sectional study was conducted at Public hospitals in Lahore city among 100 pregnant females suffering from gestational diabetes mellitus over the period of 4 months. A pre-tested questionnaire was used to collect data using convenient sampling technique from women with diabetes mellitus during pregnancy with informed consent. Data were analyzed using statistical package for social sciences (SPSS) version 21.0. Frequencies were calculated and Pearson's chi-square test was applied to find associations of socioeconomic status, regular checkup, mental stress, difficulty during sleep. p-value less than 0.05 was considered as significant.

RESULTS

According to the results, 81% patients were not having insulin therapy during pregnancy and only 19% were having insulin, as shown in Figure 1.

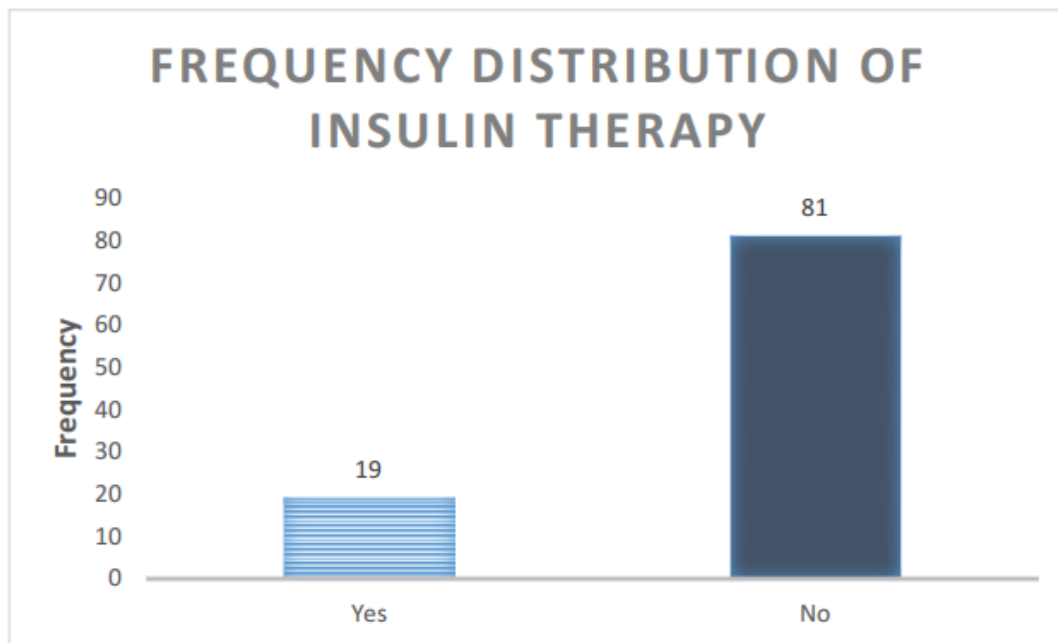


Figure 1: Frequency distribution of Insulin therapy in patients

According to the results, 73% patients had OGTT values above 200 mg/dl during pregnancy while 27% had values above 140 mg/dl, as shown in Figure 2.

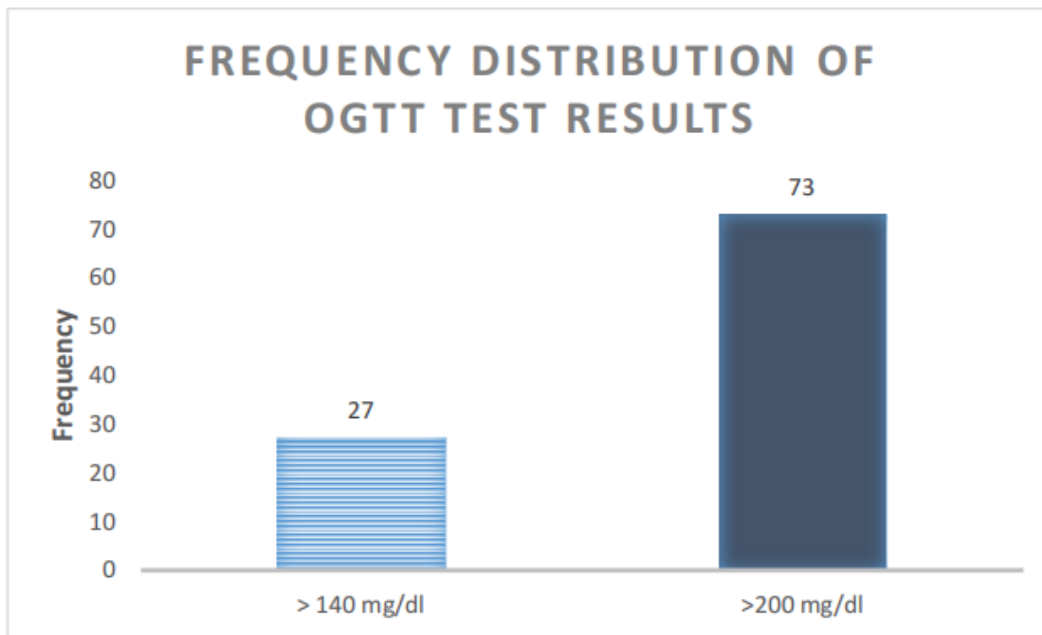


Figure 2: Frequency distribution of OGTT lab values

An insignificant result of association was found between HbA1c test results and Cereal food Paratha ($p < .72$), as shown in Table 1.

HbA1c	Paratha consumption					Total	P - value
	Daily	1-2 times/week	3-4 times/week	Once a week	Never		
>5.7%	13	8	22	6	1	50	.72
>6.7%	12	21	6	7	4	50	
Total	25	29	28	13	5	100	

Table 1: Association between HbA1c test of patients and Cereals (Paratha)

DISCUSSION

Women suffering from gestational diabetes mellitus should take insulin to control their blood sugar levels which can affect the fetus. The results of the current study showed that 81% females were not having insulin treatment during pregnancy and only 19% were having insulin therapy. Similar results were found in a study conducted by Horvath K et al in 2010 which found the better results in pregnant women who were taking insulin but the rate of women avoiding insulin treatment was high. Study found more serious health issues in women who did not have insulin therapy throughout their pregnancy [19]. Oral glucose tolerance test is a basic clinical tool to assess the diabetes mellitus in women during their pregnancy. The alarming situation occurs if the value of oral glucose tolerance tests (OGTT) raises from 140 mg/dl and serious health issues occur if the lab values raise from 200 mg/dl. The results of current study found that 73% pregnant females had their OGTT test values more than 200 mg/dl and 27% had values above 140 mg/dl. Similar results were found in a study conducted by Donovan et al., in 2013 which they found the high rate of lab values of OGTT among pregnant women with diabetes mellitus [20]. In current study there was an insignificant association found between consumption of high fat containing cereals and grains with lab values of HbA1c test ($p=0.72$).

CONCLUSIONS

Study concluded that improper medication, irregular treatment and lack of proper medication to control diabetes during pregnancy were a major cause of high clinical test values of diabetes in pregnant women.

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