

**Ministry of higher education  
And scientific research  
University of Diyala  
College of medicine**



## **Prevalence of Diabetes among pregnant women in Baquba district Diyala Governorate**

**Thesis Submitted to the Council of the College of Medicine, Diyala University,  
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بِسْمِ اللّٰهِ الرَّحْمٰنِ الرَّحِیْمِ

قُلْ هَلْ یَسْتَوِی الذّٰی یَعْلَمُ وَ الذّٰی لَا  
یَعْلَمُ ۗ اِنَّمَا یَتَذَكَّرُ اُولُو الْاَلْبَابِ

صَدَقَ اللّٰهُ الْعَظِیْمُ

## Abstract

### **Background:**

Diabetes in pregnancy is a common medical problem and one of the most common causes of perinatal morbidity and mortality .

### **Aims of study.**

To detect the prevalence of diabetes among pregnant women in Baquba district Diyala governorate.

### **Patients and methods:**

A Descriptive cross-sectional study was conducted between November 2022 to March 2023. Random sample of 90 pregnant women whom gestational age less than 12 weeks, were screened for Diabetes through Fasting blood sugar, random blood sugar and Glycated Hemoglobin.

### **Results:**

Out of 90 random sample of early pregnant women , We found 15 women (16.6%) were diabetic 75 women (83.4%) without diabetes , mean age was 30.6 years. (5%) of them were newly diagnosed type 2 diabetes, 10 women (66.7%) were type 2 diabetes, while 5 of them (33.3%) were type 1 on insulin therapy , (20%) of the sample were newly diagnosed type 2 diabetes, while (80%) pre-existing diabetes. In distribution of (HbA1C) value , were 55 women (61.1%) less than (5.7%), were (22.2%) were diabetes pre-existing diabetes , were 6.7% women are diagnosed as diabetic , while 10% were uncontrolled diabetes (HbA1C ) more than 7%.

### **Conclusion**

we conclude that the prevalence of diabetes were 16.6% of pregnant women who attended the consultation clinic. The major type prevalence was type 2 diabetes .

### **Keywords :**

prevalence diabetes of pregnancy .Baquba , Diyala.

## **Introduction:**

Diabetes in pregnancy is associated with risks to the women and to the developing fetus . The health of pregnant women and their unborn children may be negatively impacted by diabetes. High blood sugar levels around the time of conception increase the risk of birth defects, stillbirth, and preterm birth in women with type 1 or type 2 diabetes. High blood sugar levels during pregnancy also increase the risk of cesarean delivery for women with any type of diabetes and the risk that their unborn children will be overweight or develop type 2 diabetes or obesity.(1)

In the US, type 1 or type 2 diabetes affects 1% to 2% of pregnant women, while gestational diabetes affects 6% to 9% of pregnant women. Pregnancy-related diabetes has become more prevalent recently. According to recent studies, the percentage of pregnant women with gestational diabetes increased by 56% between 2000 and 2010, while the percentage of pregnant women with type 1 or type 2 diabetes increased by 37%.(2)

Pregnancy diabetes varies by race and ethnicity. Black and Hispanic women have higher rates of type 1 or type 2 diabetes during pregnancy, while Asian and Hispanic women have higher rates of diabetes.(3)

Macrosomia, which results from increased placental transport of glucose and other nutrients from the mother to the fetus, is a hallmark of maternal diabetes. Since many years ago, it has been known that the endocrine pancreas' islet hypertrophy and hyperplasia of the B-cells that produce insulin in fetuses and newborns of diabetic mothers are typical features of these individuals.(4)

As early as nine weeks of gestation, the characteristics of B-cell stimulation are visible. An increase in the number of B-cells that produce insulin is accompanied by an increase in insulin secretion. IGF (insulin-like growth factors) levels also rise concurrently. Birth weight is correlated with both insulin and IGFs. (5)

The severity of diabetes-related illness before becoming pregnant influences maternal morbidity in diabetic pregnancies, Preeclampsia in pregnant women is increased two to four times ,also diabetes in pregnancy increase risk of coexisting microalbuminuria or frank nephropathy , diabetic retinopathy are at risk of progression of the disease , increase incidence of infection , severe hyperglycemia or hypoglycemia and diabetic ketoacidosis and the complications that may arise from increased operative delivery rate.(6)

Fatal macrosomia, perinatal mortality , congenital abnormalities ,shoulder dystocia and therefore possible hypoxic damage are the complication of diabetic women to the fetal , sudden and unexplained late stillbirth historically occurred in 10 -30 percent of diabetic pregnancy .(7)

**Aims of the study:**

The aim of the study was to detect the prevalence of diabetes among pregnant women in Baquba district Diyala Governorate.

## **Materials and methods:**

A Descriptive cross-sectional study was conducted between November 2022 to March 2023 was conducted on pregnant women who attended the consultation clinic. inclusion criteria were pregnant women in the first trimester to screen for preexisting Diabetes.

## **Adjustment .**

After collection, data were checked manually and analyzed by computer based program Statistical package of social science(SPSS) 26 version. Results were expressed as mean, or frequency or percentage.

## Result:

Out of 90 random sample of early pregnant women , we found women 15 (16.6 ) % were diabetic , mean age was 30.6 years as shown in table 1 .

Table 1 : prevalence of diabetes of pregnant women sample

<b>Prevalence</b>	<b>Frequency</b>	<b>Percentage</b>
<b>With diabetes</b>	<b>15</b>	<b>16.6%</b>
<b>Without diabetes</b>	<b>75</b>	<b>83.4%</b>
<b>Total</b>	<b>90</b>	<b>100%</b>

66.7% of diabetic women (10 ) were type 2 diabetes while(5) 33.3 % were type 1 on insulin therapy as shown in table 2 .

Table 2 : distribution of diabetes type among the diabetes women .

<b>Diabetes type</b>	<b>Frequency</b>	<b>Percentage</b>
<b>Type 2 diabetes</b>	<b>10</b>	<b>66.7%</b>
<b>Type 1 diabetes</b>	<b>5</b>	<b>33.3%</b>
<b>Total</b>	<b>15</b>	<b>100%</b>

Table 3 show that 20% (3) were newly diagnosed diabetes while 80% were pre – existing diabetes .

Table 3 : clinical outcome by newly diagnosed diabetes and pre-existing diabetes status.

	<b>Frequency</b>	<b>Percentage</b>
<b>Newly diagnosed type 2 diabetes</b>	<b>3</b>	<b>20%</b>
<b>Pre-existing diabetes</b>	<b>12</b>	<b>80%</b>

Table 4 show 22.2% were diabetes pre-existing diabetes(HbA1C) between 5.7%-6.4% , while 10% were uncontrolled diabetes .

Table 4: distribution of HbA1C value among the sample .

<b>HbA1C value</b>	<b>Frequency</b>	<b>Percentage</b>
<b>Less than 5.7%</b>	<b>55</b>	<b>61.1%%</b>
<b>5.7%-6.4%</b>	<b>20</b>	<b>22.2%</b>
<b>6.5%- 7%</b>	<b>6</b>	<b>6.7%</b>
<b>More than7% (uncontrolled diabetes)</b>	<b>9</b>	<b>10%</b>
<b>Total</b>	<b>90</b>	<b>100%</b>



## **Discussion :**

Diabetes is common medical problem during pregnancy , many patients already have type 2 diabetes but may be unrecognized until late pregnancy and this should not be overlooked because it might be confused later with gestational diabetes. Screening for diabetes in early pregnancy is warranted because of the highly genetic susceptibility of middle eastern women for insulin resistance and type 2 diabetes.

In this study , we found women 15 (16.6 ) % were diabetic , mean age was 30.6 years . Our results were comparable to other studies.

66.7% of diabetic women (10 ) were type 2 diabetes while(5) 33.3 % were type 1 on insulin therapy. This similar to study done by Lydon et al .(8) which found the major of the diabetes were type 2 diabetes among early pregnant women.

13.3% of the sample were newly diagnosed type 2 while 86.7% were diabetes pre-existing diabetes .This agree with study Axer et al (10) which found the most of the sample included were pre-existing diabetes.

We found that 22.2% were diabetes pre-existing diabetes , while 10% were uncontrolled diabetes . this agree with study done in Ukraine which found the major sample were uncontrolled done by Wroblewska et al .(11)

## **Conclusion :**

Diabetes is common medical problem during pregnancy , many patients already have type 2 diabetes but may be unrecognized until late pregnancy and this should not be overlooked because it might be confused later with gestational diabetes. Screening for diabetes in early pregnancy is warranted because of the highly genetic susceptibility of middle eastern women for insulin resistance and type 2 diabetes.

## **Recommendations**

We recommend that women have more screening for diabetes in early pregnancy. Many pregnant women already have diabetes but still asymptomatic and may be subjected to perinatal complication of diabetes.

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