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Review Article

**MANAGEMENT OF DIABETICS IN PREGNANCY****Riteek P. Raghuwanshi<sup>1</sup>, Nandakishor B. Deshmukh<sup>2</sup>, Dr. Swati P. Deshmukh<sup>3</sup>**<sup>1</sup>Bachelor of pharmacy student, Shraddha Institute of Pharmacy.<sup>2</sup>Assistant Professor, Shraddha Institute of Pharmacy.<sup>3</sup>Principle, Shraddha Institute of Pharmacy.**Abstract:**

*Diabetes management during pregnancy is essential to reduce the risks of maternal and fetal complications, including preeclampsia, macrosomia, preterm birth, and neonatal hypoglycemia. This review aims to evaluate the current approaches to managing both pre-existing and gestational diabetes in pregnant women, with a focus on screening, glycemic control, and preventive strategies. The findings highlight the importance of early screening for diabetes, particularly for high-risk populations, and the effectiveness of lifestyle interventions, such as diet and physical activity, in controlling blood glucose levels. Insulin remains the first-line treatment for blood glucose management, though newer medications may also play a role in certain cases. The review underscores the need for individualized care, including regular monitoring and patient education, to optimize outcomes for both mother and child. Key recommendations stress the importance of a comprehensive, multidisciplinary approach to prenatal care, ensuring timely interventions and appropriate management of diabetes during pregnancy.*

**KEYWORDS:** Diabetes in pregnancy, gestational diabetes, blood glucose control, insulin therapy, prenatal care, complications, lifestyle intervention, maternal health, fetal health.

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## INTRODUCTION:

Gestational Diabetes Mellitus (GDM) is defined as Impaired Glucose Tolerance (IGT) with onset or first recognition during pregnancy. Worldwide, one in 10 pregnancies is associated with diabetes, 90% of which are GDM. Undiagnosed or inadequately treated GDM can lead to significant maternal & fetal complications. Moreover, women with GDM and their offspring's are at increased risk of developing type2 diabetes later in life. In India, one of the most populous countries globally, rates of GDM are estimated to be 10-14.3% which is much higher than the west. As of 2010, there were an estimated 22 million women with diabetes between the ages of 20 and 39 & an additional 54 million women in this age group with impaired glucose tolerance (IGT) or pre-diabetes with the potential to develop GDM if they become pregnant. [1] The incidence of GDM is expected to increase to 20% i.e. one in every 5 pregnant women is likely to have GDM. In a field study in Tamil Nadu performed under the "Diabetes in Pregnancy" – Awareness and Prevention project, of the 4151, 3960 and 3945 pregnant women screened in urban, semi urban and rural areas, respectively, the prevalence of GDM was 17.8% in the urban, 13.8% in the semi urban and 9.9% in the rural areas. [2] To address to the urgent need to prevent and minimize maternal and fetal morbidity associated with GDM, Ministry of Health and Family Welfare released a national guideline for provision of universal screening and management of GDM as part of the essential antenatal package. State of Madhya Pradesh with support from Govt. of India implemented the recommendations of national guideline on "ANC care based GDM Diagnosis and Management" in district Hoshangabad from Nov 2016 to Oct 2017. During the implementation period 84% (21358) of ANC client were tested for GDM and prevalence of GDM was found to be 11% and 8% in urban and rural areas respectively. Further, the GDM diagnosis and management services were initiated in additional 11 states across India. [3]

## PATHOPHYSIOLOGY

Normal Maternal Glucose Metabolism although early pregnancy is a time of relative insulin sensitivity, this sensitivity decreases sharply in the second and early third trimester of pregnancy. This reduces insulin-dependent glucose uptake in tissues such as muscle and fat and serves as a maternal physiologic adaption to preserve carbohydrate for the rapidly growing fetus. In addition, impaired insulin mediated suppression of maternal lipolysis and fat oxidation provides fatty acids as an alternative energy source. This process is likely mediated by a number of factors including an increase in progesterone,

estrogen, cortisol, and human placental growth hormone. Typically, a two- to three-fold increase in insulin production is sufficient to meet this challenge and studies confirm an increase in pancreatic fractional beta cell area in human pregnancy. Insulin secretion increases significantly by early pregnancy, even before increases in insulin resistance. In animal models, lactogenic hormones seem to stimulate this process through a direct effect on beta cells; however, it is uncertain if this is the case in humans. [4]

- **GDM:**

Frequently, the insulin secretory response is inadequate and hyperglycemia develops, leading to a diagnosis of GDM in women without pre-existing diabetes. Limited evidence from physiologic studies in such women suggests that subtle abnormalities of insulin secretion precede pregnancy and persist after parturition. In one such study of high-risk women with GDM, independent predictors of a postpartum abnormality of glucose tolerance were hyperglycemia before 22 weeks' gestation and a low first-phase insulin response during an intravenous glucose tolerance test. The first-phase insulin response to intravenous glucose represents an early burst of insulin release and is followed by a gradually increasing phase of insulin secretion over several hours. This first-phase response plays a significant role in maintaining glucose homeostasis in healthy individuals and is lost in the early stages of diabetes. The degree of insulin resistance in the third trimester of pregnancy is not an important predictor of abnormal glucose tolerance within 6 months after GDM. This suggests a chronic beta cell defect exacerbated by pregnancy. [5]

- **Pre-existing Diabetes:**

Women with pre-existing diabetes face similar changes in insulin resistance. The ability of the beta cell to compensate is more profoundly impaired in type 2 diabetes and negligible in type 1 diabetes. Although the clinical impact may be insignificant, a pregnancy-induced increase in C-peptide (suggesting improved beta cell function) has even been observed in women with established type 1 diabetes and undetectable C-peptide levels at baseline.

- **Early Pregnancy Hyperglycemia and Fetal Effects:** Maternal hyperglycemia both per conceptually and during the first trimester of pregnancy can result in major birth defects and pregnancy loss. Whereas these outcomes typically affect pregnancies with pre-existing diabetes, in women with GDM the risk of malformations increases with maternal fasting glucose, body mass index (BMI), and earlier gestational age at diagnosis. Most commonly these malformations affect the cardiac or central nervous system and include transposition of the great arteries, septal defects, neural tube defects, and caudal

regression syndrome and the latter of which is almost universally associated with diabetes in pregnancy. Oxidative stress has been suggested to play a role in the development of such complications, but further studies of mechanism are needed. Although maternal hyperglycemia in the second and third trimester is typically associated with excessive fetal growth, women with pre-existing diabetes may have impaired fetal growth through two mechanisms. Maternal microvascular disease confers a significant risk of intrauterine growth restriction, whereas hyperglycemia in the first trimester may impair placental development and subsequent fetal growth through poorly understood mechanism<sup>[6]</sup>

- **Fetal Overnutrition:**

Maternal glucose is transferred to the fetus across the placenta down a concentration gradient determined by both maternal and fetal glucose levels. Maternal hyperglycemia therefore promotes fetal hyperglycemia and stimulates fetal insulin secretion. This process constitutes the “hyperglycemia-hyperinsulinemia hypothesis” or the “Pedersen hypothesis.” Taking this process a step further, fetal glucose uses increases with fetal hyperinsulinemia, lowering fetal glucose and increasing the transplacental glucose gradient and rate of glucose transfer. This is described as the “fetoplacental glucose steal phenomenon” and once established, is believed to favor a high glucose flux with stimulation of fetal triacylglycerol formation and deposition of excess fetal adipose tissue even when maternal blood glucose is normal. The Pedersen hypothesis was developed in an era when most cases of hyperglycemia in pregnancy were due to type 1 diabetes. However, during the past 50 years, increases in maternal obesity have changed this landscape, and the metabolic milieu to which the developing fetus is exposed is undoubtedly different in obesity (with or without type 2 diabetes). For example, maternal triglyceride levels are 40% to 50% higher in mothers with obesity and GDM compared with normal-weight mothers during pregnancy. Placental lipases can hydrolyze maternal triglycerides to free fatty acids for fetal-placental availability, and there is increasing evidence that these are also important substrates for fetal fat accretion and overgrowth. Excessive fetal growth may be expressed as macrosomia or LGA. Macrosomia is typically defined as an absolute birth weight of greater than 4000 to 4500 g, whereas LGA refers to a birth weight greater than 90<sup>th</sup> percentile for gestational age. Affected infants are at risk for asphyxia, perinatal death, and shoulder dystocia with or without birth injury, respiratory distress, and hypoglycemia. Additional metabolic complications that may be present at birth and arise from maternal

hyperglycemia include hypocalcemia, hypomagnesaemia, polycythemia, and hyperbilirubinemia<sup>[7]</sup>

- **Long-Term Offspring Outcomes:**

It is difficult to separate the role of fetal exposure to maternal hyperglycemia from factors such as maternal obesity and environmental exposures. However, offspring of mothers with pre-existing diabetes or GDM are heavier at birth and at every age with an increased risk of type 2 diabetes compared with those born to mothers without diabetes. Epigenetic variation established in utero may explain the link between the uterine milieu and later disease susceptibility. Although several offspring methylation variants appear to be independently associated with GDM and type 2 diabetes, these observations have not led to the development of biomarkers to predict which children are most at risk of metabolic disease. Another emerging concern is the potentially negative effect of maternal diabetes on offspring cognitive development, but reports have been conflicting and causal pathways are unclear. Type 1 diabetes risk is increased in offspring with maternal or paternal diabetes of any type, and appears even higher with paternal diabetes<sup>[8]</sup>

### **DIAGNOSIS:**

Diabetes in pregnancy encompasses both pre-existing diabetes and gestational diabetes mellitus (GDM). Proper diagnosis is crucial for ensuring the health of both the mother and the baby. This overview covers the diagnostic criteria, screening methods, and considerations for both types of diabetes during pregnancy.

- **Types of Diabetes in Pregnancy**

- **Pre-existing Diabetes:**

Pre-existing diabetes includes both type 1 and type 2 diabetes that is diagnosed before pregnancy. Women with known diabetes should manage their condition before conception and throughout pregnancy.

- **Gestational Diabetes Mellitus (GDM):**

GDM is defined as glucose intolerance that is first recognized during pregnancy. It typically develops around the second trimester and can resolve after delivery, though it increases the risk of developing type 2 diabetes later in life.

- **Screening and Diagnosis of GDM:**

- **Timing of Screening:**

The American College of Obstetricians and Gynecologists (ACOG) recommends screening for GDM for all pregnant women between 24 and 28 weeks of gestation. Women with risk factors (e.g., obesity, family history of diabetes, previous GDM) may be screened earlier.

- Glucose Challenge Test (GCT):
  - Procedure: This is a non-fasting test where the patient consumes a 50-gram glucose solution, followed by a blood draw one hour later.
  - Interpretation: A blood glucose level of 140 mg/dL or higher indicates the need for further testing.
- Oral Glucose Tolerance Test (OGTT):
  - If the GCT results are elevated, an OGTT is performed to confirm GDM.
  - Preparation: Patients fast for at least 8 hours prior to the test.
  - Procedure: After a baseline fasting blood sample is taken, the patient drinks a 75-gram glucose solution, and blood samples are collected at fasting, 1 hour, and 2 hours post-ingestion.
  - Diagnostic Criteria: GDM is diagnosed if any of the following criteria are met:
    - Fasting:  $\geq 92$  mg/dL
    - 1-Hour:  $\geq 180$  mg/dL
    - 2-Hour:  $\geq 153$  mg/dL
- Follow-Up for GDM:
  - Women diagnosed with GDM should undergo regular monitoring of blood glucose levels and follow-up assessments postpartum to evaluate their risk for type 2 diabetes.
- Diagnosis of Pre-existing Diabetes During Pregnancy:
- Screening for Pre-existing Diabetes
  - For women with risk factors (e.g., obesity, family history of diabetes), screening for diabetes should occur before conception or as soon as pregnancy is confirmed.
- Diagnostic Tests:
  - Fasting Plasma Glucose (FPG)
    - A fasting plasma glucose level of 126 mg/dL or higher indicates diabetes.
  - Random Plasma Glucose Test
    - A random plasma glucose level of 200 mg/dL or higher, accompanied by classic symptoms of hyperglycemia, suggests diabetes.
  - Oral Glucose Tolerance Test (OGTT)
    - The same OGTT procedure used for diagnosing GDM can confirm pre-existing diabetes in pregnant women.
- Importance of Early Diagnosis:
  - Identifying pre-existing diabetes early in pregnancy allows for better management and reduced risks of complications, including fetal anomalies, preterm birth, and maternal health issues.
- Challenges in Diagnosis:
  - Asymptomatic Nature

Both GDM and pre-existing diabetes can present without noticeable symptoms, underscoring the need for routine screening.

- Variability in Guidelines
  - Different organizations may have varying recommendations for screening and diagnostic criteria, which can lead to inconsistencies in practice.
- Cultural and Socioeconomic Barriers
  - Cultural beliefs and access to healthcare can influence the effectiveness of screening programs. Education and outreach are essential to improve awareness and compliance.<sup>[9]</sup>

## MANAGEMENT

The primary goals of diabetes management in pregnancy include:

- Achieving Target Blood Glucose Levels:
  - Maintaining blood glucose within recommended ranges.
- Preventing Complications:
  - Minimizing risks to both maternal and fetal health, such as macrosomia, preeclampsia, and neonatal hypoglycemia.
- Providing Patient Education:
  - Equipping women with the knowledge and skills needed to manage their diabetes effectively.
- Monitoring:
  - Regular monitoring of blood glucose levels is crucial for effective management. This typically includes:
    - Self-Monitoring of Blood Glucose (SMBG):
      - Women are encouraged to monitor their blood glucose levels several times a day.
    - Continuous Glucose Monitoring (CGM):
      - Some women may benefit from CGM devices that provide real-time glucose data and trends.<sup>[10]</sup>
- Non-Pharmacological Treatment:
  - Dietary Management
    - Diet plays a vital role in managing diabetes during pregnancy. A well-balanced diet can help stabilize blood glucose levels and provide essential nutrients for both mother and baby.
    - Nutritional Guidelines
      - Balanced Meals:
        - Emphasis on a diet rich in whole grains, fruits, vegetables, lean proteins, and healthy fats.
      - Carbohydrate Counting:
        - Women may benefit from understanding carbohydrate intake to manage blood sugar levels.
      - Frequent Small Meals:
        - Eating smaller, more frequent meals can help maintain stable blood glucose levels.
- Monitoring and Adjusting Diet:

- Food Diary: Keeping a food diary can help identify patterns and adjust dietary choices as needed.
- Consultation with a Dietitian: A registered dietitian can provide personalized meal plans and nutritional guidance.
- Physical Activity
  - Regular physical activity is an important component of diabetes management during pregnancy. Exercise helps improve insulin sensitivity and can contribute to better blood glucose control.
- Recommendations
  - Moderate Exercise: Activities such as walking, swimming, or prenatal yoga are often recommended.
  - Frequency: Aim for at least 150 minutes of moderate-intensity aerobic activity per week.
  - Individualization: Exercise programs should be tailored to the individual's fitness level and any pregnancy-related considerations.
  - Safety Considerations
    - Consultation with Healthcare Provider: Women should discuss their exercise plans with their healthcare provider to ensure safety.
    - Avoiding High-Risk Activities: Activities with a high risk of falling or injury should be avoided.
  - Education and Support
    - Education is critical for empowering women to manage their diabetes effectively.
    - Diabetes Self-Management Education (DSME)
      - Understanding Diabetes: Education on the nature of diabetes and its implications during pregnancy.
      - Blood Glucose Monitoring: Training on how to monitor blood glucose levels effectively.
      - Recognizing Hypoglycemia and Hyperglycemia: Women should learn to identify and manage these conditions.
    - Support Networks
      - Support Groups: Connecting with other women experiencing similar challenges can provide emotional support and practical advice.
      - Healthcare Team Collaboration: Continuous communication with healthcare providers, including obstetricians, endocrinologists, and dietitians, is essential.<sup>[11]</sup>
  - Pharmacological Treatment:
    - Indications for Pharmacological Treatment
      - While lifestyle modifications are first-line interventions, some women may require pharmacological treatment, especially if blood glucose levels remain uncontrolled despite dietary and lifestyle changes.
    - Insulin Therapy
      - Insulin is the preferred pharmacological treatment for managing both pre-existing diabetes and GDM during pregnancy.
      - Types of Insulin
        - Short-Acting Insulin: Typically used for bolus dosing to control postprandial glucose levels. example
        - Long-Acting Insulin: Used for basal control, helping to manage fasting blood glucose levels.s
      - Administration
        - Self-Administration: Women may be trained to self-administer insulin using syringes, pens, or insulin pumps.
        - Monitoring: Regular monitoring of blood glucose levels is essential to adjust insulin dosages.
      - Oral Hypoglycemic Agents
        - While insulin is the mainstay of treatment, some oral medications may be considered for GDM:
        - Metformin
          - Use: Metformin is often prescribed for women with GDM who cannot achieve glycemic control through diet and exercise alone.
          - Benefits: It has a favorable safety profile and does not pose significant risks to the fetus.
        - Glyburide
          - Use: Glyburide, a sulfonylurea, is another oral option that may be used in select cases.
          - Considerations: Close monitoring is necessary to ensure efficacy and safety.
      - Monitoring and Adjustment of Pharmacological Therapy:
        - Regular Follow-Up: Ongoing evaluation of blood glucose levels is essential to determine the effectiveness of treatment.
        - Adjustments: Insulin dosages and oral medications may need adjustments based on changes in weight, activity level, and gestational age.
      - Postpartum Management:
        - Monitoring After Delivery: Women who had GDM should be screened for type 2 diabetes 6 to 12 weeks postpartum and subsequently every 1 to 3 years.
      - Education for Long-Term Health:
        - Lifestyle Modifications: Emphasizing the importance of maintaining a healthy lifestyle to reduce the risk of future diabetes.
        - Weight Management: Encouraging weight loss and regular physical activity as preventive measures.
      - Challenges in Management:
        - Individual Variability:

Each woman's response to treatment can vary, necessitating personalized management strategies.

- Access to Care:  
Barriers such as socioeconomic status and access to healthcare can impact the effectiveness of management strategies.
- Emotional Well-Being:  
Pregnancy can be a stressful time, particularly for women managing diabetes. Providing mental health support is an important aspect of comprehensive care.<sup>[12]</sup>

### SPECIAL CONSIDERATION

Managing diabetes in pregnancy requires a nuanced and individualized approach, as the impact of diabetes on maternal and fetal health can vary depending on the type of diabetes and the specific circumstances of the pregnancy. Special consideration must be given to the management of Type 1 diabetes, Type 2 diabetes, gestational diabetes mellitus (GDM), and pregnancies involving multiple fetuses. Each of these conditions presents unique challenges and requires tailored interventions to optimize outcomes.<sup>[13]</sup>

#### Type 1 Diabetes in Pregnancy

**Type 1 diabetes (T1D)** is an autoimmune condition in which the pancreas produces little or no insulin. In pregnancy, women with T1D face a higher risk of both maternal and fetal complications due to fluctuations in blood glucose levels. These complications include an increased risk of preeclampsia, diabetic ketoacidosis (DKA), preterm labor, and fetal congenital malformations (especially of the heart and central nervous system), as well as the risk of macrosomia (large babies).

#### Management Strategies:

**Tight Glycemic Control:** Achieving and maintaining tight glycemic control is critical in pregnancy. This can help minimize the risk of birth defects and improve fetal outcomes. Blood glucose levels should be monitored more frequently, with targets adjusted to keep fasting blood glucose between 60–90 mg/dL and postprandial levels below 120–140 mg/dL.

**Insulin Therapy:** Insulin requirements change during pregnancy due to hormonal fluctuations that affect insulin sensitivity. Insulin doses are typically increased, and the type of insulin used may be adjusted for better control. Continuous glucose monitoring (CGM) and insulin pumps are

increasingly being used to optimize glucose management in real-time, allowing for more precise adjustments.

**Preconception Counseling:** Women with T1D are strongly encouraged to optimize their blood glucose control before conception to reduce the risk of birth defects. Preconception care should also address potential microvascular complications (e.g., retinopathy and nephropathy), which may worsen during pregnancy.<sup>[14]</sup>

#### Special Considerations:

**Risk of Hypoglycemia:** Pregnant women with T1D are at increased risk of hypoglycemia, particularly in the second and third trimesters, due to increased insulin sensitivity. Close monitoring of blood glucose is essential to prevent episodes of hypoglycemia, which can be dangerous for both the mother and fetus.

**Frequent Monitoring:** Women with T1D should be monitored more closely than those without diabetes. This includes regular fetal ultrasounds, assessments of fetal growth, and tests for proteinuria or signs of preeclampsia.<sup>[15]</sup>

#### Type 2 Diabetes in Pregnancy

**Type 2 diabetes (T2D)** is a metabolic disorder characterized by insulin resistance, often associated with obesity and a sedentary lifestyle. During pregnancy, women with T2D are at an increased risk of complications such as preeclampsia, cesarean delivery, macrosomia, and neonatal hypoglycemia.

#### Management Strategies:

**Lifestyle Modifications:** The cornerstone of T2D management in pregnancy includes diet and physical activity. A balanced diet focused on low glycemic index foods, regular meals, and avoiding excessive weight gain is essential. Moderate exercise, such as walking, can help improve insulin sensitivity and control blood glucose levels.

**Medications:** Many women with T2D will require insulin therapy to maintain optimal blood glucose control. In some cases, oral medications like metformin may be used if appropriate, although the safety of some oral agents during pregnancy remains a topic of ongoing research.

**Blood Glucose Monitoring:** Regular monitoring of blood glucose is necessary, and individualized targets should be established to keep blood glucose within normal ranges. Women with T2D are also at increased risk of complications such as hypertension, and careful monitoring of blood pressure is essential. [16]

#### Special Considerations:

**Obesity and Insulin Resistance:** Women with obesity may face more challenges in controlling blood glucose during pregnancy, and they may also be at higher risk for other complications such as gestational hypertension or preeclampsia.

**Postpartum Care:** Women with T2D are at high risk for developing type 2 diabetes later in life, and postpartum screening for diabetes should be performed 6–12 weeks after delivery. Lifestyle interventions, including weight management and exercise, are critical in reducing the risk of progression to type 2 diabetes. [17]

#### Gestational Diabetes Mellitus (GDM)

**Gestational diabetes mellitus (GDM)** is a form of diabetes that develops during pregnancy, typically in the second or third trimester. It is characterized by insulin resistance that is exacerbated by hormonal changes, leading to elevated blood glucose levels. GDM increases the risk of both maternal and fetal complications, such as preeclampsia, macrosomia, neonatal hypoglycemia, and a higher risk of developing type 2 diabetes later in life.

#### Management Strategies:

**Screening and Diagnosis:** Universal screening for GDM is recommended for all pregnant women at 24–28 weeks of gestation, though high-risk women may be screened earlier. The standard diagnostic test is the oral glucose tolerance test (OGTT).

**Diet and Exercise:** Dietary modifications focusing on balanced meals with controlled carbohydrate intake are essential. Regular physical activity, such as walking, can help improve insulin sensitivity. [18]

**Blood Glucose Monitoring:** Regular self-monitoring of blood glucose levels is necessary to maintain control. In some cases, insulin therapy is required if lifestyle modifications are insufficient to control blood glucose levels.

**Postpartum Screening:** After delivery, women who had GDM should be screened for type 2 diabetes within 6–12 weeks. Continued lifestyle modifications, including weight management and exercise, are recommended to reduce the risk of developing type 2 diabetes later. [19]

#### Special Considerations:

**Risk of Recurrence:** Women who have had GDM are at a higher risk of developing GDM in subsequent pregnancies, as well as type 2 diabetes later in life.

**Fetal Monitoring:** Regular fetal monitoring is important to detect signs of fetal macrosomia, as infants of mothers with GDM are at increased risk of being larger than average.

#### Multiple Pregnancy and Diabetes

Multiple pregnancies (e.g., twins, triplets) introduce additional complexities in managing diabetes. Women carrying multiple fetuses may experience more significant insulin resistance due to the increased hormonal burden and higher calorie requirements.

#### Management Strategies:

**Blood Glucose Monitoring:** Tight glucose control is even more critical in multiple pregnancies to prevent complications such as preterm birth, intrauterine growth restriction (IUGR), or macrosomia. Women with diabetes in multiple pregnancies may require more frequent monitoring and adjustments to their insulin therapy.

**Fetal Monitoring:** Increased fetal monitoring, including ultrasound and non-stress tests, is recommended in multiple pregnancies to assess fetal growth and well-being, especially if there is concern for fetal overgrowth or IUGR.

**Special Considerations:** Multiple pregnancies also pose a higher risk of preeclampsia, preterm birth, and cesarean delivery. These women require more intensive prenatal care, including monitoring for signs of hypertensive disorders, fetal growth abnormalities, and signs of premature labor. [20]

#### CONCLUSION:

Managing diabetes in pregnancy, whether pre-existing or gestational, requires careful consideration of each woman's unique circumstances. Women with

Type 1 or Type 2 diabetes often need more intensive monitoring and a higher level of care to minimize risks to both maternal and fetal health. For gestational diabetes, early detection, lifestyle modifications, and close monitoring are key to managing the condition effectively. In multiple pregnancies, the risks of both maternal and fetal complications increase, necessitating even closer monitoring and individualized care plans. With appropriate management, the risks associated with diabetes during pregnancy can be minimized, leading to healthier outcomes for both mother and child.

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