

## PREGNANCY COMPLICATIONS: GESTATIONAL DIABETES AND HYPERTENSION

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<https://doi.org/10.5281/zenodo.17692192>

**Introduction:** Gestational diabetes mellitus (GDM) and gestational hypertension (GH) represent two of the most clinically significant pregnancy complications, contributing substantially to maternal and perinatal morbidity worldwide. These disorders often develop in the second half of pregnancy and are associated with metabolic, vascular, and hormonal dysregulation that can adversely affect both mother and fetus. The rising prevalence of obesity, sedentary lifestyle, and advanced maternal age has led to increased incidence of GDM and GH, making early detection and management critical. Understanding the underlying mechanisms and clinical manifestations is essential for preventing obstetric complications such as preeclampsia, fetal growth restriction, preterm birth, and postpartum metabolic disorders.

**Objective:** To evaluate the clinical characteristics, risk factors, maternal–fetal outcomes, and prognostic significance of gestational diabetes and gestational hypertension, with emphasis on early diagnosis, monitoring, and targeted therapeutic strategies.

**Materials and Methods:** This study included pregnant women aged 18–40 years who presented to the obstetrics and gynecology department for routine antenatal care. Clinical assessment involved detailed history, physical examination, and laboratory testing. Screening for gestational diabetes was performed using the oral glucose tolerance test (OGTT) between 24–28 weeks of gestation, while gestational hypertension was diagnosed based on repeated blood pressure measurements  $\geq 140/90$  mmHg after 20 weeks of pregnancy. Additional evaluations included fasting glucose, HbA1c, lipid profile, urine protein analysis, fetal ultrasonography, and Doppler studies. Data were analyzed to identify correlations between clinical parameters and adverse pregnancy outcomes.

**Results:** The study results demonstrated that women with gestational diabetes exhibited higher body mass index, elevated fasting glucose, and increased frequency of macrosomia and polyhydramnios. In contrast, patients with gestational hypertension showed significantly increased systolic and diastolic blood pressure values, higher incidence of proteinuria, and greater risk of preeclampsia development. Both conditions were strongly associated with maternal risk factors such as obesity, family history of diabetes or hypertension, advanced maternal age, and previous obstetric complications. Fetal outcomes included increased rates of cesarean delivery, intrauterine growth abnormalities, and neonatal hypoglycemia. Early diagnosis and strict maternal monitoring were associated with improved maternal and neonatal outcomes.

**Discussion:** The findings highlight that gestational diabetes and hypertension share several pathophysiological mechanisms, including endothelial dysfunction, insulin resistance, and abnormal placental development. These disorders require multidisciplinary management involving obstetricians, endocrinologists, and neonatologists to minimize complications.

Lifestyle interventions, dietary modification, pharmacologic therapy when indicated, and continuous fetal surveillance are essential components of care. The study underscores the need for individualized antenatal monitoring protocols, as timely intervention can significantly reduce the risk of severe maternal and perinatal complications.

**Conclusion:** Gestational diabetes and gestational hypertension remain major contributors to adverse pregnancy outcomes, emphasizing the importance of early screening, risk assessment, and comprehensive management. Integrating evidence-based diagnostic methods and personalized treatment approaches can improve prognosis for both mother and child. Enhanced awareness, patient education, and multidisciplinary collaboration are key to reducing the burden of these pregnancy-related disorders.

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