PREECLAMPSIA: EARLY DIAGNOSIS AND PREVENTION

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Abstract: This thesis discusses the early diagnosis and prevention of preeclampsia. It highlights the major risk factors, modern screening methods, and preventive strategies used to reduce maternal and perinatal complications. Early identification of women at high risk and timely preventive interventions play a crucial role in improving pregnancy outcomes.

Keywords: Preeclampsia, pregnancy, early diagnosis, prevention, hypertension, screening, risk factors, perinatal complications.

Introduction

Preeclampsia is one of the most serious complications of pregnancy and remains a major cause of maternal and perinatal morbidity and mortality worldwide. The condition usually develops after the 20th week of gestation and is characterized by elevated blood pressure and dysfunction of multiple organ systems. Early diagnosis is essential for preventing severe maternal and fetal complications and improving pregnancy outcomes. Modern screening methods, including risk factor assessment, ultrasound examination, and laboratory biomarkers, enable the early identification of women at high risk of developing preeclampsia. Timely implementation of preventive measures, particularly in high-risk pregnancies, can significantly reduce the incidence of preeclampsia and improve maternal and neonatal health outcomes.

Relevance

Preeclampsia is one of the most dangerous complications of pregnancy and a major cause of maternal and perinatal morbidity and mortality. Early diagnosis and timely preventive measures are essential for reducing severe complications and improving pregnancy outcomes.

Main part

Early diagnosis of preeclampsia is essential for preventing severe maternal and fetal complications. The disease usually develops after the 20th week of pregnancy and is characterized by hypertension and proteinuria or signs of organ dysfunction. Identification of women at high risk begins during the first trimester through assessment of maternal history and clinical risk factors. Regular blood pressure monitoring remains the simplest and most effective screening method. Laboratory investigations, including urinary protein analysis and biochemical markers, improve diagnostic accuracy. Doppler ultrasound of the uterine arteries is useful for evaluating placental blood flow and predicting disease development. Modern biomarkers such as placental growth factor and soluble fms-like tyrosine kinase-1 further enhance early detection. Timely diagnosis enables close

monitoring, early intervention, and improved pregnancy outcomes while reducing maternal and neonatal morbidity and mortality.

Prevention of preeclampsia primarily focuses on identifying women at increased risk and implementing appropriate preventive measures. Low-dose aspirin is recommended for high-risk pregnant women beginning in early pregnancy. Adequate calcium supplementation may reduce the incidence of preeclampsia, particularly in women with low dietary calcium intake. Management of chronic hypertension, diabetes mellitus, obesity, and kidney disease before and during pregnancy is also important. Regular antenatal care allows early recognition of abnormal clinical findings and ensures timely medical intervention. Healthy nutrition, appropriate weight control, moderate physical activity, and avoidance of smoking contribute to reducing disease risk. Patient education regarding warning symptoms also plays an important role in successful prevention.

Early diagnosis and effective prevention of preeclampsia significantly improve maternal and fetal outcomes. Timely identification of high-risk pregnancies allows individualized monitoring and appropriate treatment strategies. Early intervention decreases the risk of severe hypertension, eclampsia, placental abruption, fetal growth restriction, preterm birth, and perinatal mortality. Continuous maternal and fetal surveillance improves pregnancy management and facilitates timely delivery when necessary. Modern screening programs combined with preventive therapy have substantially reduced the frequency of severe complications. Therefore, comprehensive antenatal care remains the cornerstone of successful preeclampsia prevention and contributes to improved maternal and neonatal health.

Conclusion

Preeclampsia is one of the most serious complications of pregnancy and remains an important cause of maternal and perinatal morbidity and mortality. Early identification of women at high risk through modern screening methods and timely preventive interventions significantly reduce the incidence of severe complications. Regular antenatal monitoring, appropriate preventive therapy, and individualized management improve both maternal and neonatal outcomes. Therefore, early diagnosis and prevention should remain key priorities in modern obstetric practice.

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