

Prediction of preeclampsia and intrauterine growth restriction in low-risk pregnancies in East Avenue Medical Center using uterine artery Doppler velocimetry

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Preeclampsia, which is defined as elevated blood pressure after 20 weeks of pregnancy in a woman whose blood pressure had been normal, remains the second most common cause of direct maternal deaths (0.83 per 100,000 cases) worldwide. At present, no effective prophylactic measures have been identified in the prevention of preeclampsia and other pregnancy complications such as intrauterine growth restriction. Therefore, proper antenatal care remains the most important part of prevention. Identifying each woman's individualized risk can allow further antenatal surveillance to be directed to those women who are most likely to develop preeclampsia. Such care leads to early diagnosis and intervention, both in terms of maternal/fetal monitoring and timing of delivery. In this study, uterine artery Doppler velocimetry in the mid-trimester will be analyzed and its role in the prediction of later pregnancy complications (preeclampsia and intrauterine growth restriction) will be discussed. The aim of this study is to predict the risk for the development of adverse pregnancy outcomes on the basis of mid-trimester uterine artery Doppler velocimetry. Statistical analysis showed that preeclampsia occurred significantly more commonly in the group with an abnormal Doppler result at 16-22 weeks of gestation, compared to pregnancies with normal Doppler findings. That is 42.9% (3 out of 7) for abnormal Doppler result versus 7.2% (2 out of 27) for those with normal Doppler findings. However, none of the 34 evaluated cases developed intrauterine growth restriction. Abnormal uterine artery Doppler result at 16-22 weeks is associated with adverse pregnancy outcomes. In this study, it was well correlated with the development of preeclampsia. Hence, uterine artery Doppler can be used as a useful method for identifying high-risk pregnancies. Uterine artery pulsatility index (PI>1.45) can provide further information for the prediction of preeclampsia in order to conduct appropriate clinical interventions to avoid perinatal morbidity.

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