Uterine artery Doppler and the universal screening for impaired placentation/placenta related adverse obstetrical outcomes

More than 15% of pregnancies are affected by placenta related adverse obstetrical outcomes necessitating uterine artery Doppler to screen for impaired placentation.

Preeclampsia and other hypertensive disorders of pregnancy occur in 5-8% of all pregnancies of women who have no known risk factors. https://www.preeclampsia.org/faqs
O36.512 - maternal care for known or suspected placental insufficiency.

Preeclampsia is a leading cause of maternal death worldwide. Preeclampsia is potentially life-threatening and affects 1 in 25 pregnancies in the United States.
*American Heart Association. April 2023.

More than 15% of pregnancies are affected by placenta related adverse obstetrical outcomes. Placental dysfunction - due to vascular and/or inflammatory pathophysiology - are considered to be the primary or significant contributor to The Great Obstetrical Syndromes, namely, preterm labor, preterm prelabor rupture of membranes, fetal demise, preeclampsia, and intrauterine growth restriction. These pregnancy complications may be responsible for both short- and long-term health outcomes.

In each trimester of pregnancy, multifactorial algorithms employing uterine artery Doppler, maternal blood pressure, biochemical markers and maternal demographics are the best available means by which to screen for impaired placentation and placenta related adverse obstetrical outcomes including preeclampsia and stillbirth. In the first and second trimester these algorithms are the best available means to determine which patients would best benefit from aspirin treatment.

Uterine artery Doppler is a validated non-invasive proxy for placenta ischemia due to impaired placentation and defective trophoblastic invasion - the pathogenesis of early onset preeclampsia and contributing factor to preterm preeclampsia. Uterine artery Doppler is a marker for defective remodeling of spiral arteries with consequent placental malperfusion and associated impaired fetal growth. Uterine artery Doppler is an essential component within the evidence based multifactorial Fetal Medicine Foundation algorithm optimizing personalized quantitative preeclampsia risk assessment in each trimester of pregnancy.

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