A Method for Detecting Obstetric Complications

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Technology description

Invention Summary
U-3244 serves as a screening tool to identify pregnancies at risk of disease or prematurity as early as 12 weeks. This technology involves the use of Doppler ultrasound techniques to study the blood flow velocities from fetal and maternal arteries. Sophisticated signal processing algorithms are used to analyze these data for coherence between maternal and fetal blood flow. Early detection of preeclampsia allows preventative and effective therapeutic agents to be started as early of the second trimester. Previous data has suggested that early administration of this and other treatments reduces the risk of severe preeclampsia by up to 95% depending on the specific therapeutic. Additionally, detecting abnormalities earlier would allow doctors to perform additional analysis that may reduce the incidence of premature births. This technology would be of interest to obstetricians and midwives caring for pregnant patients.
Value Proposition
Allows the obstetrician to predict pregnancies at risk of preeclampsia and other complications as early as 12 weeks and subsequently monitor or treat that risk earlier
Noninvasive
Simple to perform (falls within normal workflow; may add 1-2 minutes to check-up)
Detects abnormalities with 90% accuracy
Potential to reduce costs associated with premature birth by at least 10%, which could save $40 million per year at the University of Utah hospital alone
Not all women seek prenatal care. It is difficult to be precise because of changes to birth certificates enacted between 2003 and 2014, but as of 2006, approximately 4% of pregnant women either did not seek prenatal care or sought late (third trimester) care. The total market would not include these women, meaning the market size would reach $1.92 billion. Furthermore, not all women who do seek prenatal treatment will opt for the scan unless it becomes part of the typical care process and receives insurance reimbursement. Therefore, assuming 10% market adoption, the yearly market will be approximately $192 million.

Institution

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