

Novel Method for Prognosis of Pre-Eclampsia

Published date: Aug. 28, 2016

Technology description

Background

Preeclampsia is a hypertensive disorder that occurs only during pregnancy, affecting roughly 5 % of all pregnancies. Preeclampsia typically arises after 20 weeks gestation (middle to late pregnancy). It is a rapidly progressive condition characterized by high blood pressure and abnormally high levels of protein in the urine. Preeclampsia and other hypertensive disorders of pregnancy are a leading cause of maternal and infant illness and death. By conservative estimates, these disorders are responsible for 76,000 maternal and 500,000 infant deaths each year. The etiology and pathogenesis of preeclampsia remains poorly understood and useful predictors of the disease are currently lacking. Technology Investigators at the University of Pittsburgh have developed methods for accurately predicting which women will develop preeclampsia or eclampsia well before an increase in blood pressure occurs. The technology involves measuring the concentration of soluble c-kit protein in the blood, plasma or serum of a pregnant patient and comparing it with a control sample from the same patient collected earlier in the pregnancy. The diagnostic can distinguish preeclampsia or eclampsia from gestational hypertension.

Application area

1. Diagnostic or prognostic specifically for preeclampsia
2. Identification of patients prone to preeclampsia
3. Monitor a patient's response to blood pressure medications to treat preeclampsia

Advantages

1. Requires only 3-5 milliliters of whole blood
2. Other bodily fluids, like urine, can be used
3. More sensitive than current tests (Greater than 95% sensitivity and specificity)
4. Can be used to predict preeclampsia prior to detecting increased blood pressure and just weeks into the pregnancy.

5. Early detection of preeclampsia reduces the morbidity rate
6. Decreased complications and healthcare costs for the mother and child

Institution

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