MedicalXpress

Study validates two-protein test for spontaneous preterm birth prediction

February 1 2016

In a study to be presented on Feb. 4 at the Society for Maternal-Fetal Medicine's annual meeting, The Pregnancy Meeting, in Atlanta, researchers will present findings from the Proteomic Assessment of Preterm Risk study (PAPPR study, #NCT01371019) with the title Clinical validation of a two-protein test for spontaneous preterm birth (sPTB) prediction in a large multicenter prospective study of asymptomatic women.

Pre-term birth is a birth that takes place before 37 weeks of pregnancy. According to the Centers for Disease Control and Prevention, in 2014, preterm birth affected one out of every 10 infants. In the U.S., preterm birth is the largest contributor to infant death with most preterm related deaths occurring among babies born very preterm (before 32 weeks). It is also a leading cause of long-term neurological disabilities in children. For these reasons, it is critical to identify key indicators of preterm birth.

This study performed a blind evaluation of the performance of a two-protein test for spontaneous preterm birth prediction. The study was conducted at 11 sites between 2011 and 2013, with 5501 pregnant women (representative of the U.S. population) enrolled at 17-28 weeks of gestational age. By examining specimens from PAPR, researchers identified an optimal gestational age window in pregnancy (19-21 weeks) and two highly performing proteins for predicting subsequent spontaneous preterm birth.

Following the discovery and verifications steps, the novel classifier

(IBP4 and SHBG) was validated in an independent group of women, with excellent performance and an area under the ROC curve of 93% for preterm delivery before 35 weeks and 75% for delivery before 37 weeks.

"The performance of this proteomic classifier was excellent," said George R. Saade, M.D. professor of Obstetrics and Gynecology at the University of Texas Medical Branch in Galveston and lead investigator. "Having a classifier to help physicians risk-stratify patients for preterm birth in early pregnancy would be extremely valuable in guiding levels of care and employing preventive strategies for their patients," added Saade.

Provided by Society for Maternal-Fetal Medicine