

Novel blood test may help predict impending preterm birth

May 14 2014



A blood-based diagnostic test accurately predicted whether 70% of female study participants with threatened preterm labor (TPTL) would or would not give birth prematurely. Results were published May 14, 2014, in the open access journal *PLOS ONE*, by Dr Jan Heng and Professor Stephen Lye from the Lunenfeld-Tanenbaum Research Institute, Mount Sinai Hospital, Toronto, Canada.

"A lot of TPTL [women](#) are unnecessarily hospitalized," says Professor Stephen Lye. "We want to develop a [test](#) that can differentiate between true and false labor so that women in true labor can receive the appropriate medical care while women in false labor will receive supportive care and be discharged." Preterm birth worldwide remains

the main cause of childbirth-related mortality in the developed world. Only 5% of the women hospitalized with signs of premature labor (i.e. TPTL) will deliver a premature baby within ten days.

The current [preterm labor diagnostic test](#), fetal fibronectin (fFN) test is easily influenced by factors that can cause false positives. Thus, many women are ineligible for fFN testing. In an effort to develop a method that can be used in all cases, scientists used microarrays to study differential whole blood gene expression associated with spontaneous [premature birth](#) within 48 hours in women admitted with TPTL – an important window for the clinical management of TPTL. Blood samples were collected prior to treatment from ~150 TPTL women. The fFN test was also performed on eligible participants (~60 women), and the results were compared.

The researchers discovered that a set of nine genes, coupled with clinical blood data, could classify whether 70% of participants would or would not have a spontaneous preterm birth within 48 hours of hospital admission. In addition, the nine genes coupled with clinical blood data outperformed the fFN test. This newer test highlights the advantages of utilizing a blood-based diagnostic test to predict spontaneous [preterm birth](#), where it can be performed on all women and as part of routine blood work.

More information: Heng YJ, Pennell CE, Chua HN, Perkins JE, Lye SJ (2014) Whole Blood Gene Expression Profile Associated with Spontaneous Preterm Birth in Women with Threatened Preterm Labor. *PLoS ONE* 9(5): e96901. [DOI: 10.1371/journal.pone.0096901](https://doi.org/10.1371/journal.pone.0096901)

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