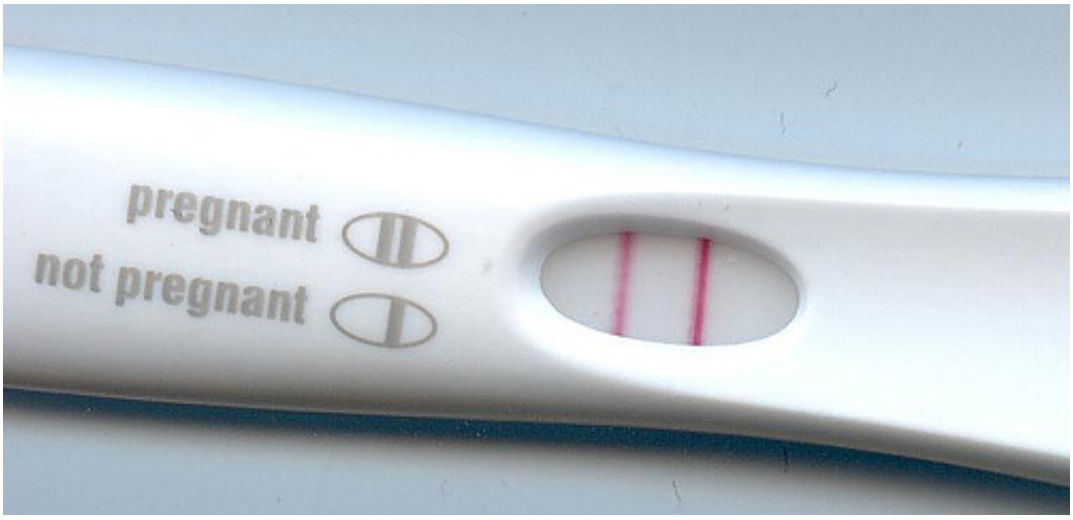
'Early-term' births significantly increase risk of preterm births, says study

July 12 2016, by Liz Droge-Young



Pregnancy test. Credit: public domain

A new study led by UC San Francisco researchers found that women whose first child was born at 37 to 38 weeks – so-called "early-term" birth – are two to three times more likely to experience preterm birth, defined as birth at a gestational age less than 37 weeks, when giving birth to a second child. The identification of this new risk factor may be a boon to doctors, who are rarely able to predict preterm birth, which occurs in nearly one in 10 births and is the leading cause of infant mortality.

The heightened risk was present whether a woman spontaneously

delivered early, or if the birth was induced due to another medical consideration.

"The magnitude of the increased risk surprised us – it really is a potent factor," said Laura Jelliffe-Pawlowski, PhD, associate professor of epidemiology and biostatistics at UCSF, associate director of precision health with the UCSF California Preterm Birth Initiative (PTBi-CA), and senior author of the new study.

The study, published July 11, 2016, in *Obstetrics & Gynecology*, is the first systematic look at how the gestational age in a first pregnancy predicts the second, analyzing data from more than 160,000 California women who gave birth between 2005 and 2011. It comes as the preterm birth rate has inched up for the first time in more than a decade.

As in previous studies, the researchers noted additional risk factors for premature birth, which is more frequent in African-American mothers, when there is an inter-pregnancy interval of less than 6 months, with illicit drug use during pregnancy, or when mothers have been diagnosed with hypertension, preexisting diabetes, or urinary tract infections.

Preterm birth is linked to myriad poor health outcomes. According to the Centers for Disease Control and Prevention, preterm birth is the chief cause of infant death, as well as a major predictor of neurological problems with life-long consequences, such as cerebral palsy, developmental delay, and vision and hearing impairment.

"Delaying labor by just two weeks could make a major difference in neurologic outcomes and adult health," said Larry Rand, MD, associate professor of obstetrics, gynecology and reproductive sciences at UCSF.

The new finding could expand the number of women targeted for interventions to reduce the chance of delivering preterm. The primary

treatments for at-risk women are progesterone and careful monitoring of the cervix and for uterine contractions to catch signs of early labor. Progesterone can extend pregnancy, whereas signs of early labor can indicate the need for additional medical interventions to slow or stop the labor.

Jelliffe-Pawlowski suggested that clinical trials could be undertaken to confirm if women with an early-term delivery could similarly benefit from progesterone treatments in subsequent pregnancies. If progesterone proves effective in these patients, many more women at risk for a preterm birth could be treated. For example, of all first pregnancies in the current study, 5.7 percent of women gave birth preterm and would be considered at high risk in a second pregnancy, but a much larger group – 22 percent—delivered early term, and would not be flagged for intervention under the current standard of care, even though they are at higher risk for delivering a preterm baby.

"Delaying labor by just two weeks could make a major difference in neurologic outcomes and adult health," said Rand. "We are on the edge of a new era in prematurity prevention and improving associated outcomes – there are new blood tests that can help improve identifying who's at risk for prematurity. When coupled with important risk factors, like maternal conditions and previous pregnancy duration, not only do we get a more precise picture of risk, but also a more informed sense of what interventions could be most powerful to mitigate those risks."

The other key change Jelliffe-Pawlowski suggests is enhanced doctor-patient communication. She said the risk of early-term birth should be clearly conveyed, so women understand their own risks.

For the new study, researchers in UCSF's PTBi-CA initiative collaborated with lead author Juan Yang, PhD, a research scientist at the California Department of Public Health, and additional scientists in

California, Iowa, Ohio, and Philadelphia.

The study was funded by the PTBi at UCSF's School of Medicine, the March of Dimes Prematurity Research Center at Stanford University, the March of Dimes Prematurity Research Center Ohio Collaborative, the Bill and Melinda Gates Foundation, and the Eunice Kennedy Shriver National Institute of Child Health and Development.

The PTBi is a multidisciplinary research effort to limit the number of preterm births, particularly in the initiative's study areas of California (San Francisco, Oakland, Fresno) and East Africa (areas of Kenya, Uganda, and Rwanda). The project is supported by Lynne and Marc Benioff and the Bill and Melinda Gates Foundation. "The PTBi is uniquely prepared to think about how information like new preterm birth risks can be translated to change in our communities of focus," Jelliffe-Pawlowski said. "Preterm birth really starts the wheel in a bad direction. Our work is all about better beginnings."

Provided by University of California, San Francisco