New technology aims to reduce maternal and neonatal deaths

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A new technology that could help physicians screen pregnant women at risk of developing a prenatal and potentially fatal complication called preeclampsia has been developed at The University of Western Ontario and the Children's Health Research Institute of Lawson Health Research Institute.

The technology, employing a panel of biomarkers found to have changed levels in the placenta of women who develop preeclampsia, has been licensed to California-based Biosite Inc. for further development and eventual commercialization.

As one of the leading causes of maternal and neonatal deaths worldwide, preeclampsia does not discriminate socioeconomic status or geography, and affects approximately 3-10 per cent of all pregnancies. According to the World Health Organization, it is responsible for 18 per cent of all maternal deaths, 80,000 premature births and associated neonatal complications, which can have life-long impact such as cerebral palsy, mental retardation and blindness.

Screening and early detection are key given that there are no known cures for preeclampsia, and the only treatment available to date is to deliver the baby and placenta at any stage of gestation at which the disease is diagnosed. The work has been supported by grants from the Canadian Institutes of Health Research, Western and the Children's Health Foundation.
"Our research is highly relevant to early-onset severe preeclampsia that presents before 28 weeks gestation," says Dr. Victor Han, Canada Research Chair in Fetal and Maternal Health, at the Schulich School of Medicine & Dentistry at Western, and one of the team's lead researchers. "By identifying these pregnant women early, one day, we will be able to delay the onset or reduce the severity by targeted intervention."

Han, biochemistry professor Gilles Lajoie and recent Master's graduate Aaron Booy set out to identify an 'early warning system' for preeclampsia and have developed a patent-pending method for identifying proteins and related biomarkers that, in combination, will predict the likelihood of and risk associated with the disease. This important discovery could lead to the development of diagnostic tests used by physicians to identify at-risk pregnancies more quickly and more effectively.

This finding drew the immediate attention of Biosite Inc., a division of Inverness Medical Innovations, which is a world leader in the area of medical diagnostics. Biosite Inc. will help support the researchers' continued efforts by developing reagents and immunoassays to enable the biomarkers to be measured in patients' blood specimens and take the technology to market.

The deal is one of the first completed by London's new WORLDiscoveries™ business development office, which is a partnership between Western, including Robarts Research Institute, and Lawson Health Research Institute.

Source: University of Western Ontario