An FP7-funded project is performing a study with the support of 5,000 babies over the course of 4 years. The so-called IMPROVED babies will contribute to the development of a novel predictive blood test for pre-eclampsia.

Pre-eclampsia is a complex disorder causing high blood pressure in the second half of pregnancy. It accounts for 24% of maternal deaths in Europe, and causes over 500,000 infant deaths every year across the globe.

To be tackled, the disease requires a personalised approach thanks to screening tests which are not available yet. ‘Currently no clinically useful screening test exists for pre-eclampsia; consequently clinicians are unable to offer targeted surveillance or emerging preventative strategies,’ explains Katleen Verleysen, CEO of IMPROVED project partner Pronota.

IMPROVED aims to fill this gap with two innovative prototype screening tests for this late pregnancy complication, a finding that would revolutionise prenatal care according to the project team. The consortium is led by University College Cork (UCC) and driven by Metabolomic Diagnostics Ltd of Ireland and Pronota NV of Belgium – both of which are industry leaders in the discovery and development of novel blood-borne biomarkers for disease prediction. The consortium has secured EUR 6 million under the FP7-HEALTH programme.

But what’s an IMPROVED baby then? Since it was kicked-off in 2014, the IMPROVED team has been establishing a high quality pregnancy biobank with blood samples collected from 5,000 first-time pregnant women recruited in five countries including Ireland, the United Kingdom, Germany, Sweden and the Netherlands. In May 2014, the first of these first-time mums’ babies was born, unaware that her first tears were preceded by a participation in what could be a game-changing advance for those who will follow.

The help of first-time mothers is indeed vital to the success of IMPROvED. ‘By joining IMPROVED I feel that I am contributing to a better and more personalised approach to understanding the cause of this disease’, one of the mothers told IMPROVED.

Once all these samples are collected, the resulting biobank will be used to determine whether prototype predictive assays and algorithms translate to the clinical environment, assess potential synergy of a combined metabolomic and proteomic approach, and progress regulatory approval and development of the selected test into the clinical arena. To this aim project partner MedSciNet will deliver a sophisticated web-based platform, already widely used internationally for data management in clinical trials and cohort studies, to create biobank management software augmented with clinical metadata.

‘An effective screening test will allow antenatal care to be tailored to an individual woman’s risk, such that at risk women receive the best possible care. The approval of IMPROvED is a strong endorsement of European researchers and recognises the importance of enhancing maternal and fetal health,’ says Prof Phil Baker, co-principal investigator of the project.
Ultimately, the project holds the promise of multiple benefits, including the uptake of personalised medicine into clinical practice, the development of novel treatment strategies, the reduction of healthcare costs, increase competitiveness of Europe and a positive impact for relevant industries. For more information, please visit: http://www.fp7-improved.eu/

Countries
Ireland


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