LB020

Genetic studies of pre-eclampsia in Central Asian and European populations

L. Morgan[1], H. Laivuori[2,3]
on behalf of the InterPregGen Consortium

[1] School of Molecular Medical Sciences , University of Nottingham, Nottingham, United Kingdom
[2]Haartman Institute, Medical Genetics and [3]Research Programs Unit, Women's Health, University of Helsinki, Helsinki, Finland

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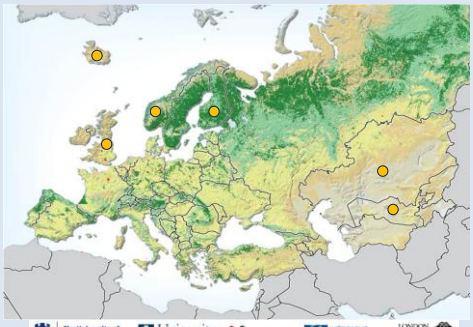
Pre-eclampsia

- One of the most dangerous cardiometabolic complications of pregnancy
- Claims the lives of 50,000 mothers and almost one million babies annually
- Affects 3-5% of pregnancies in western Europe; the incidence in Central Asian countries is over twice as high.

Susceptibility is in part genetically determined

- Large studies are essential to discover the predisposing variants in mothers and babies.
- Inter-population differences in genetic polymorphisms may be partly responsible for variation in the incidence of the condition.

Partners



Data generation and analysis in a phased approach

- Genome-wide association screening (GWAS)
- Meta-analysis of existing and novel GWAS results
- Replication of promising signals from GWAS
- Investigation of parent-of-origin (imprinting) effects

Data will be analysed to test:

- Association of maternal variants with pre-eclampsia
- Association of fetal variants with pre-eclampsia
- Maternal-fetal gene interactions

The InterPregGen Consortium

The InterPregGen study is funded by the European Community's Seventh Framework Programme within the call "Population genetics studies on cardio-metabolic disorders in EU/AC and EECA populations."

Objectives

- To establish sustainable collaborative links between research groups in Central Asia (Kazakhstan and Uzbekistan) and Europe (UK, Finland, Norway, Iceland)
- To identify and compare genetic variants which predispose to pre-eclampsia

Biobanks in Kazakhstan and Uzbekistan

- DNA and plasma samples from 4000 affected women, their partners and babies, and matched control samples from healthy pregnant women

More knowledge of the genetic diversity in Central Asian populations

- By undertaking whole genome sequencing of 100 subjects, analogous to the 1000 Genomes project

Pre-existing and new genetic data from European Cohorts

- Data from a total of 11,000 maternal cases, 8000 affected babies, and 7000 fathers

- The largest investigation of the genetic factors underlying pre-eclampsia to date
- Well-powered to identify polymorphisms with individually small effect sizes providing insights into the underlying pathological mechanisms
- This will generate novel hypotheses on the aetiology of pre-eclampsia, and provide targets for improved prediction, prevention and treatment

InterPregGen

Genetic studies of pre-eclampsia

The InterPregGen Consortium

The consortium comprises research groups with an established interest in pre-eclampsia and genetics from 12 research institutions in Europe and Central Asia :

- University of Nottingham, United Kingdom
- Scientific Center for Gynecology, Obstetrics and Perinatology, Kazakhstan
- Republic Specialized Scientific-Practical Medical Center of Obstetrics and Gynecology, Uzbekistan
- deCODE Genetics, Iceland
- University of Helsinki, Finland
- Norwegian University of Science and Technology, Norway
- National Institute of Public Health, Norway
- London School of Hygiene and Tropical Medicine, United Kingdom
- Wellcome Trust Sanger Institute, United Kingdom
- University of Glasgow, United Kingdom
- University of Leeds, United Kingdom
- Institute of Immunology, Uzbek Academy of Science, Uzbekistan

Further information

Further information about the InterPregGen study is available on our website www.interpreggen.org

Alternatively please contact either of the following:
Linda Morgan – linda.morgan@nottingham.ac.uk
Hannele Laivuori - hannele.laivuori@helsinki.fi

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