Examining the genomics of pregnancy-induced diabetes

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Pregnancy-induced diabetes, also known as gestational diabetes, is a common metabolic complication of pregnancy. The disorder carries a significant risk of adverse obstetric outcome. Additionally, it is

associated with a high risk of recurrence, progression to maternal type 2 diabetes as well as an elevated risk of obesity in fetuses exposed to hyperglycaemia during gestation.

The mechanisms causing gestational diabetes are complex and incompletely understood. The disorder has a strong underlying genetic element that interacts with lifestyle factors and the physiologic changes accompanying pregnancy to alter maternal glucose regulation.

A team of researchers from the Faculty of Medicine and Surgery have applied high-throughput genomics to identify rare highly-penetrant genetic variants that drive the development of gestational diabetes.

The study, entitled 'Screening for monogenic subtypes of gestational diabetes in a high prevalence island population—a whole exome sequencing study' provides the first description of atypical diabetes presenting in pregnancy in the Maltese population.

This research integrates clinical medicine, genomics and protein modeling with longitudinal follow-up data. The paper highlights the genetic heterogeneity underlying disorders of glucose regulation and reinforces the role of precision medicine research in unraveling the etiology of complex traits.

More information: Nikolai Paul Pace et al, Screening for monogenic subtypes of gestational diabetes in a high prevalence island population – a whole exome sequencing study, *Diabetes/Metabolism Research and Reviews* (2021). DOI: 10.1002/dmrr.3486

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