



Noninvasive Screening for Gestational Diabetes

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SUMMARY

Dr. Brian Koos in the Department of Obstetrics and Gynecology at UCLA has developed a noninvasive and accurate screening technology to identify gestational diabetes during early pregnancy.

BACKGROUND

Gestational diabetes, or glucose intolerance in pregnant women, affects 3-8% of all pregnancies in the US, which stands at approximately 4.3 million live births per year. Current standards for diagnosing gestational diabetes utilize invasive venipuncture to monitor glucose levels, but the practice is discomforting, time-consuming, and only applicable in late gestational ages (24-28 weeks). Alternatively, protein markers related to gestational diabetes can be tested in blood serum/plasma, but this method lacks sensitivity and specificity. Thus, the development of a technology that enables early identification with a painless and short diagnostic process would provide an important advance in screening gestational diabetes and importantly, allow for faster treatment of the disease.

INNOVATION

Dr. Brian Koos has developed a novel and completely non-invasive screening method that analyzes easily collectable specimens from women who are 8-14 weeks pregnant. The approach identifies markers that have a very high correlation to gestational diabetes. In a pilot study of 25 patients, the screening method identified 100% of those patients that would subsequently be diagnosed with gestational diabetes much latter in pregnancy. The accuracy (sensitivity + specificity/2) of the test was also 100%. This technology innovatively simplifies the sample collection, which significantly reduces discomfort experienced by patients. More importantly, the technology allows for early detection and monitoring of gestational diabetes, allowing for improved counseling and therapeutic intervention for patients.

APPLICATIONS

- ▶ Early screening of gestational diabetes
- ▶ Potential identification of type 2 diabetes in non-pregnant subjects

ADVANTAGES

- ▶ Detect disease in early pregnancy to maximize beneficial effects of therapeutic treatments
- ▶ Patients experience painless and timely diagnostics
- ▶ No requirement for expensive training in sample collection

STATE OF DEVELOPMENT

- ▶ 25 patients were accurately tested by this technology: 100% accuracy in separating gestational diabetes women from normal subjects. A validation study is currently in progress, which involves a greater number of subjects from an entirely different patient population.

PATENT STATUS

Country	Type	Number	Dated	Case
Germany	Issued Patent	3094968	12/09/2020	2014-252
France	Issued Patent	3094968	12/09/2020	2014-252
United Kingdom	Issued Patent	3094968	12/09/2020	2014-252
United States Of America	Published Application	20160341739	11/24/2016	2014-252

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INVENTORS

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OTHER INFORMATION

KEYWORDS

diabetes, diagnostics, gestational
diabetes, screening test, early
intervention, pregnancy

CATEGORIZED AS

- ▶ Medical
 - ▶ Diagnostics
 - ▶ Disease: Metabolic/Endocrinology
 - ▶ Screening

RELATED CASES

2014-252-0

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