

Impact of diabetes during pregnancy in women affected with GCK-MODY on neonatal health outcome.

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BACKGROUND

Gestational diabetes is one of the most common medical disorders and may cause numerous maternal and fetal complications.

It constitutes one of the most frequent pregnancy health problems and may cause wide range of complications such as: preterm births, congenital defects, sacral agenesis, hypertrophic cardiomyopathy, metabolic changes and macrosomia in neonates. Therefore, early detection and implementation of guideline-based screening tests, are crucial.

One of the types of diabetes, which may clinically manifest in pregnancy, is GCK-MODY, caused by mutations in glucokinase (GCK) gene, resulting in pancreatic beta cells dysfunction. Clinical course of the disease is mild. Patients usually present slightly elevated fasting glucose concentration.

AIM OF THE STUDY

to assess the impact of diabetes during pregnancy in women affected with GCK-MODY on neonatal health outcome. Researchers tried to determine the clinical and biochemical characteristics of newborns delivered by patients with GCK-MODY

METHODS

Study was multicenter, involving 50 patients from Diabetology Clinics in Gdansk, Katowice, Bialystok and Lodz. The risk of MODY 2 was evaluated on the basis of medical history of the patient, clinical course of the disease and laboratory tests performed during diagnostic procedures. Data concerning family history, mothers' health status, course of pregnancy and perinatal period was collected.

RESULTS

- The study showed that only 32% of women, later diagnosed with GCK-MODY, were tested for blood glucose concentration before pregnancy.
- In 68% of patients blood glucose measurement was not carried out before conception and women became aware of impaired glycemia during pregnancy.
- 32% of women, regardless of recognition of diabetes or normal glucose concentration after delivery, were no longer controlled for glucose levels.
- Among children with glucokinase mutation, born by mothers affected with GCK-MODY, 62% (n=32) received 10 points in Apgar score in first minute of life, whereas 92% (n=46) obtained 10 points in Apgar score in fifth minute of life. Researchers observed a statistically significant difference between the absence of macrosomia (birth weight >91 percentile) in children with GCK-MODY diabetes in comparison to general pediatric population (p=0,0229).

CONCLUSION

According to presented study, possible consequences of GCK-MODY during pregnancy on fetal development are generally less severe and may differ from those characteristic for other types of diabetes. Further investigation of particular phenotypes of GCK-MODY, depending on the type of inherited mutation, in mothers and their children is required.

