

**TITLE**

**Intrauterine hyperglycemia induces glucose intolerance transmission associating with altered Igf2/H19 expression in mouse islet**

**Fang-fang Wang, Guo-Lian Ding and He-Feng Huang**

Zhejiang University School of Medicine,  
Hangzhou, China

The aim of this study is to investigate the mechanism of transgenerational transmission of glucose intolerance by intrauterine hyperglycemia associated with gestational diabetes mellitus (GDM). We established a mouse model of GDM and observed the phenotype of GDM offspring (F1-GDM). Furthermore, we intercrossed male and female F1 adult control (C) and GDM mice and investigated phenotype in F2 offspring. Mouse model of GDM was induced by a single intraperitoneal injection of streptozotocin on the day of pregnancy. We intercrossed male and female adult control (C) and first-generation offspring of GDM (F1-GDM) mice to obtain the second-generation (F2) offspring in four groups: C♂-C♀, C♂-GDM♀, GDM♂-C♀ and GDM♂-GDM♀. Intraperitoneal glucose tolerance tests were performed on 3-week-old and 8-week-old mice. Gene expression was detected by real-time quantitative PCR. (1) Compared with control group, birth weight increased in F2 offspring through the paternal line; (2) In F1-GDM, impaired glucose tolerance (IGT) appeared at adult mice. High risk of IGT appeared as early as childhood in F2 offspring and progressed through both parental lineages, especial paternal line; (3) IGT in both F1 and F2 generations is associated with abnormal Igf2/H19 expression in islet. During pregnancy, intrauterine hyperglycemia environment of GDM lead to IGT in both first- and second-generation offspring. Abnormal expression of Igf2/H19 in islet may be one of the mechanisms for transmission of glucose intolerance induced by intrauterine hyperglycemia.

**Biography**

Fang-Fang Wang has completed her bachelor degree with the major of Clinical Medicine in Zhengjiang University from 2003 to 2008; Then master degree of Clinical Medicine in the field of obstetrics and gynecology from 2008 to 2010; and she is in the 2nd year of her Ph.D program with the major of reproductive endocrinology. She has 3 papers published on the top journal in the reproductive endocrinology field and 2 papers submitted to the journal of DIABETES and JMM.