

Abnormal glucose tolerance after gestational diabetes mellitus in Japanese women



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Introduction

Various maternal and pregnancy characteristics among women with gestational diabetes mellitus (GDM) is are considered to be risk factors for the onset of diabetes in later life.

Objective

The purpose of this study was to identify the risk factors associated with abnormal glucose tolerance on the first postpartum 75-g oral glucose tolerance test among Japanese women with GDM.

Materials and Methods

Study Sample

57 women with GDM were enrolled in this study. Forty-four women (29 presenting with one positive value; 15 presenting with more than two positive values)

Measurements

- 75g OGTT at 12 weeks postpartum to diagnose abnormal glucose tolerance, including impaired glucose tolerance and type 2 diabetes.
- Dietary habits by a self-administered dietary history questionnaire were examined at 28 gestational weeks and 12 weeks postpartum.
- General Self-Efficacy Scale (GSES) was examined at 12 weeks postpartum.

*All the women diagnosed with GDM received nutrition counseling and routine antenatal care.

Ethical Consideration

The study was approved by the Ethics Committee of Osaka University of Medical Science, Japan.

Results

Table 1. Demographic characteristic by diagnosing impaired glucose tolerance at 12 weeks among women with GDM postpartum

	Normal (n=35)	Prediabetes of Type 2 DM (n=9)	P values
Age			
Under 35y n(%)	23(65.7)	5(55.6)	n.s
Over 35y n(%)	12(34.3)	4(44.4)	
Parity			
primipara n(%)	27(77.1)	4(44.4)	n.s
Multipara n(%)	8(22.9)	5(55.6)	
Family history of diabetes	3(8.6)	1(11.1)	n.s
Height (cm)	160.5±6.7	157.6±5.9	n.s
Prepregnancy weight (kg)	54.8±8.0	60.6±10.2	n.s
Prepregnancy BMI (kg/m ²)	21.3±3.1	24.4±4.1	<0.05
No of abnormal values at diagnosis of GDM			
One n(%)	24(68.6)	5(55.6)	n.s
More than two n(%)	11(31.4)	4(44.4)	

Values are presented as mean±SD or n (%)
ns: non significant Independent t test or χ^2 test for p values.

Table 2. General self-efficacy scales at 12 weeks among women with GDM postpartum

	Normal (n=35)	Prediabetes of Type 2 DM (n=9)	P values
Total GSES scores	8.4±3.8	7.6±2.5	n.s
No of high GSES Over 11 scores n(%)	11(31.4)	1(11.1)	n.s

Values are presented as mean±SD or n (%)
ns: non significant Independent t test or χ^2 test for p values.

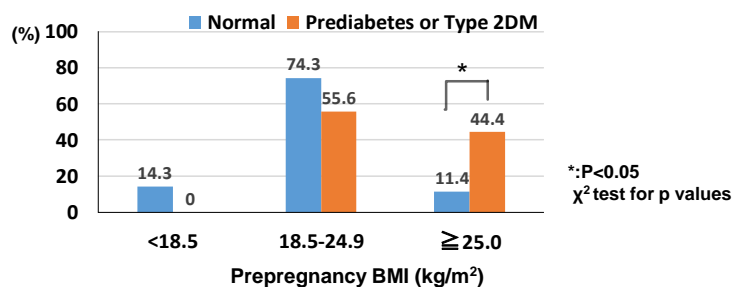


Figure 1. Prevalence of Prediabetes or Type 2DM at 12 weeks postpartum by prepregnancy BMI

The significant risk factor associated with postpartum abnormal glucose tolerance was pre-pregnancy BMI over 25 kg/m² ($P < 0.05$). Total weight gain, age, parity, and nutritional status were not associated with postpartum abnormal glucose Tolerance.

Conclusions

Identification of antepartum risk factors in advance is crucial for preventing impaired glucose tolerance and the onset of T2DM. Maintaining an appropriate BMI before pregnancy may reduce the risk of future T2DM in reproductive-aged women.

References

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