RELATIONSHIP BETWEEN EXPRESSION OF OMENTIN-1 AND CHEMERIN AND INSULIN RESISTANCE IN CHINESE PREGNANT WOMEN WITH GESTATIONAL DIABETES MELLITUS

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Objective: To explore relationship between expressions of omentin-1, chemerin in both serum and visceral omental adipose tissue and insulin resistance (IR) in Chinese pregnant women with GDM.

Methods: Thirty individuals with GDM and 22 healthy control subjects were enrolled in this study. Insulin levels, expressions of omentin-1 and chemerin were detected by enzyme-linked immuno sorbent assay (ELISA). Total cholesterol (TC), triglyceride (TG) and c-reactive protein (CRP) were measured. Expressions of mRNA omentin-1 and vaspin in visceral omental adipose tissue were detected by quantitative realtime RT-PCR.

Results: Serum omentin-1(217.88±72.15ng/mL vs 272.08±107.30 ng/mL) levels were significantly decreased and CRP(6.81±4.47 mmol/L vs 4.49±2.71mmol/L, P=0.035), chemerin(9126.22±710.23 pg/mL vs 8574.46±682.04 pg/mL, P=0.007) increased in GDM cases. The mRNA expressions of chemerin and omentin-1 in visceral omental adipose were not different in GDM and control group when BMI 29kg/m², while in those with BMI29 kg/m², chemerin mRNA (18.72±2.40 vs 5.12±3.99, P=0.021) expression increased significantly and expression of omentin-1mRNA(23.87±12.08vs46.75±18.80, P=0.035) significantly decreased than control group with BMI25kg/m². Serum chemerin levels were significantly associated with that of TC(r=0.4, P=0.003), TG(r=0.402, P=0.003) and CRP(r=0.325, P=0.019). The expression of omentin-1 was related with pre-delivery BMI(r=-0.383, P=0.005) and serum level of chemerin(r=-0.352, P=0.031) and HDL(r=0.374, P=0.006) level.

In conclusion: Both omentin-1 and chemerin might play an pivotal roles in obese patients with GDM.

Key words Omentin-1, chemerin, expression, gestational diabetes mellitus