Plasma Omentin-1 Level does not Change in the First Trimester in Women with Gestational Diabetes Mellitus

Seda Sancak, Huseyin Aydin, Mehmet Saray, 4Kasim Ozyen, Sali Erdemir, Ediphan Celik, T"Uk"l"s Aslan

1Fatih Sultan Mehmet Training and Educational Hospital, Division of Endocrinology and Metabolism, Istanbul, Turkey
2Haseke University Hospital, Division of Endocrinology and Metabolism, Istanbul, Turkey
3KaraciLU Lutfi Kirdar Training and Educational Hospital, Diabetes Department, Istanbul, Turkey
4KaraciLU Lutfi Kirdar Training and Educational Hospital, Division of Biochemistry, Istanbul, Turkey
5Fatih Sultan Mehmet Training and Educational Hospital, Department of Internal Medicine, Istanbul, Turkey
6Fatih Sultan Mehmet Training and Educational Hospital, Division of Obstetrics and Gynecology, Istanbul, Turkey
7KaraciLU Lutfi Kirdar Training and Educational Hospital, Department of Internal Medicine, Istanbul, Turkey

OBJECTIVES

Gestational diabetes mellitus (GDM) is strongly associated with maternal obesity. Omentin-1 is secreted from the adipose tissue and enhances insulin action. Circulating levels are inversely correlated with body weight, decreased in type 2 diabetes. Pre-existing maternal obesity has been shown to be associated with lower omentin-1 expression in placenta, adipose tissue and maternal plasma. In our previous study, we had shown that plasma omentin-1 level is decreased in women with GDM and increased after delivery. The aim of this study was to assess the maternal plasma omentin-1 level in the first trimester and its predictive value on development of GDM.

METHODS

Pregnant women in their first trimester (n=220) were included into the study. Those that developed GDM (n=66) was compared with non-diabetic pregnant women (n=154). WHO criteria was used for the diagnosis of GDM and screening was done at gestational weeks 24-28. Plasma omentin level was measured with ELISA. Fasting blood glucose, insulin, was also measured and HOMA-IR was calculated.

RESULTS

Patients with GDM was overweight compared to controls at the beginning of pregnancy (BMI: 28.2±4.4 vs. 25.2±3.0). HOMA-IR was higher in GDM group (2.07±1.4 vs. 1.40±0.6). Omentin level was not different between groups (2.22±0.8 vs. 2.05±0.9 ng/L). After delivery plasma omentin level increased with a mean level of 166.6±74.1 ng/L. There was no correlation between plasma omentin-1 level and glucose levels during oral glucose tolerance test. Omentin-1 level did not also correlate with body mass index, HOMA-IR and age.

CONCLUSIONS

Plasma omentin-1 level during early periods of pregnancy is did not differ between healthy and GDM-developed women. Since decreased levels were observed in GDM patients in previous studies, our findings could indicate that omentin-1 levels decrease as the pregnancy ages or change is only observed when GDM develops.