OSTEOPONTIN, hs-CRP LEVELS IN GESTATIONAL DIABETES MELLITUS

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INTRODUCTION: Gestational diabetes mellitus (GDM) is a sort of temporary carbonhydrate intolerance in pregnancy. GDM may be defined as early-onset type 2 DM in insulin resistance. GDM leads to a variety of risks for the fetus and the mother during pregnancy. Cardiovascular disorders, hypertension, dyslipidemia and metabolic syndrome are the other diseases that can develop in years after GDM. Osteopontin (OPN) is a matrix-associated protein that is secreted out of the cell, for its activities to many different biological several studies related to insulin resistance and type 2 diabetes mellitus, is noteworthy. In the literature, OPN is known to have an important role in the development of atherosclerosis, vascular calcification and remodeling. Recently it is reported that the serum OPN levels were lower in GDM group than the control group. In the same study, it has been shown that there was no correlation with serum OPN levels and the insulin sensitivity/secretion. After all, we could not find enough report about OPN levels in GDM. The aim of this study was to evaluate osteopontin (OPN) and high sensitive CRP (hs-CRP) levels in gestational diabetes mellitus (GDM) patients.

MATERIAL AND METHOD: 33 patients with GDM and 26 control patients pregnant were included in this study. Blood tests for lipid profile, fasting glucose, oral glucose tolerance test, OPN, HOMA-IR, hs-CRP were done at nearly 24th gestational week. Serum levels of OPN were measured by enzyme-linked immunosorbent assays (ELISAs), serum hs-CRP levels were measured by particule association turbidometric assay.

RESULTS: The gestational week, age, BMI of two groups were similar ($p > 0.05$). The GDM group had significantly higher fasting glucose, prandial (1st and 2nd hour) glucose, HbA1c levels than the control group. Fasting insulin, HOMA-IR levels were higher in the GDM group than the control group but the difference was not significant. The lipid profiles of two groups were not significantly different. The OPN levels were 3.4(2) ng/ml in the GDM group and 3.05(1.6) ng/ml in the control group ($p<0.05$). The hs-CRP levels were also significantly higher in the GDM group compared with the control group (0.85(0.7) vs. 0.4(0.3) $p<0.05$).

	GDM Group (n=33)	Control Group (n=26)	p
Age (years)	32.5 ± 5.3	28.6 ± 4.5	NS
BMI (kg/m^2)	28.6 ± 4.5	25.8 ± 4.2	NS
Gestational week	23.6 ± 3.5	24.8 ± 2.4	NS
Fasting glucose (mg/dl)	94.6 ± 19.1	78.8 ± 5.8	p<0.05
Fasting insulin (µU/ml)	11.4 ± 3.8	7.2 ± 3.3	NS
HOMA-IR	2.7 ± 1.2	1.5 ± 0.7	NS
Prandial glucose (1st hour) (mg/dl)	193.9 ± 60.6	137.8 ± 28.6	p<0.05
Prandial glucose (2nd hour) (mg/dl)	147.1 ± 46.3	110.1 ± 20.3	p<0.05
HbA1c (%)	5.4 ± 0.6	4.9 ± 0.2	p<0.05
Total-Cholesterol (mg/dl)	236.1 ± 40.4	229.2 ± 33.5	NS
Triglyceride (mg/dl)	188.6 ± 74.7	157.7 ± 53.9	NS
LDL-Cholesterol (mg/dl)	140.2 ± 32.5	132.1 ± 40.2	NS
HDL-Cholesterol (mg/dl)	62.1 ± 17.9	64.3 ± 16.7	NS
Osteopontin (ng/ml)	3.4 (2.0)	3.05 (1.6)	p<0.05
hs-CRP (mg/dl)	0.85 (0.7)	0.4 (0.3)	p<0.05

GDM: Gestational Diabetes Mellitus, SD: standard deviation (Mean ± (SD)),

IR: Interquartile Range (Median (IR)), NS: non-significant

CONCLUSION: Such as gestational diabetes or obesity surgery cases experiencing rapid metabolic changes, changes in levels of OPN may not be fully displayed. However, long-term illness such as type 2 diabetes mellitus or CAD, blood OPN levels in the process, there may be correlated with the disease. hs-CRP is accepted as a risk factor for atherosclerosis. In conclusion, OPN and hs-CRP levels were significantly increased in GDM patients. There are some controversial results regarding OPN levels and the factors that affect it, the broader and longer-term studies are needed in more varied population about it.