ISOTRETINOIN EFFECT ON OSTEOPONTIN, hs-CRP, INSULIN SENSITIVITY AND CIMT IN ACNE PATIENTS

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INTRODUCTION: Isotretinoin (13-cis-retinoic acid) (Iso), an active derivative of retinoic acid, is the most referable drug for the treatment of acne. Iso treatment in acne disease may cause dyslipidemia and increased liver enzymes. Its effects on lipid and glucose metabolism may cause atherogenic complications. Besides these, Iso has some conflicting results about the effects on insulin resistance although the alterations in lipid profile reminiscent of the metabolic syndrome. Osteopontin (OPN) is a matrix-associated protein that is secreted out of the cell. In recent studies, the important role of OPN had been suggested on macrophage uptake, insulin resistance, the regulation of inflammation in vascular and fat tissue. In the literature there is no paper about the effect of Iso on OPN levels. The aim of this study was to evaluate carotis intima-media thickness (CIMT), HOMA-IR, OPN, hs-CRP levels in acne patients on Iso treatment.

MATERIAL AND METHOD: 21 patients (M/F = 6/15) with acne were given Iso (0.5–0.8 mg/kg) for 4 months. Blood tests for lipid profile, fasting glucose, liver enzymes, OPN, HOMA-IR, hs-CRP and CIMT measurements were done before and after Iso treatment. Serum levels of OPN, hs-CRP were measured by ELISA and by particule association turbidimetric assay respectively.

RESULTS: The mean age and BMI are 23±4.1 years, 23.7±3.2 kg/m^2 respectively. No significant differences were seen in fasting glucose, insulin, SGOT levels before and after Iso treatment. However the HOMA-IR levels were non-significantly increased. Iso increased total-cholesterol and LDL-cholesterol levels while the HDL-cholesterol levels were decreased significantly. During Iso treatment we found that levels of OPN and hs-CRP levels were increased non-significantly. CIMT measurements were increased significantly after the Iso treatment (Table).

	Pretreatment Mean ± SD or Median (IR)	Posttreatment Mean ± SD or Median (IR)	*p*
Fasting glucose (mg/dl)	87.6± 9.7	88.1± 7.0	*NS*
Fasting insulin (µU/ml)	10.8± 8.6	10.0± 3.9	*NS*
HOMA-IR	0.91±0.41	1.87±0.20	*NS*
SGOT (U/l)	14.1± 7.8	14.9± 5.7	*NS*
Total-Cholesterol (mg/dl)	163.6± 28.6	187.5± 33.5	*p<0.05*
Triglyceride (mg/dl)	71.0±27.4	99.6±37.6	*p<0.05*
LDL-Cholesterol (mg/dl)	90.1±26.9	121.8±37.3	*p<0.05*
HDL-Cholesterol (mg/dl)	60.8±13.1	55.2±11.6	*p<0.05*
Osteopontin (ng/ml)	4.32 (3.2)	5.44 (4.6)	*NS*
hs-CRP (mg/dl)	0.08 (0.120)	0.09 (0.115)	*NS*
CIMT (mm)	0.60 (0.15)	0.74 (0.24)	*p<0.05*

Table: Pre- and posttreatment values of acne patients
SD: standard deviation;
IR: Interquartile Range
CIMT: carotis intima media thickness,
NS: non-significant.

CONCLUSION: In this study Iso treatment significantly caused dyslipidemia, increased CIMT, while it non-significantly increased HOMA-IR, OPN and hs-CRP levels.