

**SERUM LIPOPROTEINS AND INSULIN SENSITIVITY IN METABOLIC SYNDROME:  
INFLUENCE OF ABDOMINAL OBESITY**

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Previous studies have shown that insulin resistance and abdominal obesity, as part of metabolic syndrome, are associated with high incidence of coronary heart disease.

**THE AIM:** To analyze the correlation between different lipoproteins, insulin sensitivity and Tumor Necrosis Factor- $\alpha$  (TNF- $\alpha$ ) with abdominal obesity (group I: WHR  $>0.9$ ;  $n=48$ ) and without abdominal obesity (group II: WHR  $<0.9$ ;  $n=41$ ) in patients with the metabolic syndrome.

**METHODS:** Lipid profile was estimated by measuring Total Cholesterol (T.Chol), high-density lipoproteins (HDL), low-density lipoproteins (LDL), very low-density lipoproteins (VLDL), as well as TG by enzymatic methods. Apo-A1 and Apo-B100 were measured by nephelometry. Insulin sensitivity was determined by QUICK index. TNF- $\alpha$  was measured by immunoenzymatic methods.

**RESULTS:** In our study, we found significant differences between these two groups in the levels of TG ( $145 \pm 68.7$  vs  $120.7 \pm 16$  mg/dL;  $p<0.05$ ), ApoA1/ApoB100 ( $1.09 \pm 0.3$  vs  $0.95 \pm 0.12$ ;  $p<0.05$ ), and TNF- $\alpha$  ( $26.2 \pm 21.4$  vs  $11.2 \pm 7.2$ ;  $p<0.05$ ). The QUICK index was lower in group I than in group II ( $0.31 \pm 0.03$  vs  $0.34 \pm 0.02$ ,  $p<0.001$ ). Also, in both groups there was a significant correlation between levels of TNF- $\alpha$  and VLDL ( $r=0.565$ ,  $p<0.01$ ) as well as levels of TNF- $\alpha$  and TG ( $r=0.506$ ;  $p<0.01$ ). Also, we found a significant negative correlation between levels of TNF- $\alpha$  and ApoA1/ApoB100 ( $r=-0.411$ ,  $p<0.05$ ).

**CONCLUSION:** Our results signify that abdominal obesity amplifies multiple changes in lipids and lipoproteins. Also, our results show that in patients with abdominal obesity, there is a statistically reliable increase in concentration of TNF- $\alpha$ , which is accompanied by decreased insulin sensitivity.

**Keyword:** metabolic syndrome, abdominal obesity, TNF