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METABOLIC ABNORMALITIES AND INFLAMMATORY PARAMETERS IN OBSTRUCTIVE SLEEP APNEA PATIENTS

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OSAS is associated with an increased rate of metabolic syndrome consisting of central obesity, dyslipidemia and diabetes. These might be related to a proinflammatory state as inflammatory cytokines play a role in lipid's and carbohydrate's metabolism and energy expenditure. In this study, we have examined the presence of metabolic abnormalities in relation to IL-6, TNF and CRP serum level in 102 OSAS patients (71 men (M), 24 women (W) with OSAS (AHI $\geq$5) and 77 nonapneic controls (39 M and 38 W) BMI matched. In both groups, obese and non-obese as well as diabetic and non-diabetic persons were included. Plasma total cholesterol and triglyceride were determined enzymatically on a Hitachi 912 analyzer (Roche Diagnostics,). HDL-cholesterol (HDL-C) was measured using a homogenous method with polyethylene glycol-modified enzymes and alpha-cyclodextrin. LDL-cholesterol (LDL-C) was calculated by the Friedewald equation. Cytokine level was determined by ELISA method. The mean IL-6 concentration in non-obese OSAS patients was lower than in obese OSAS group but significant difference was found only in the group of W ($p=0.001$).The IL-6 concentration was higher in OSAS patients with type 2 diabetes when compared to obese non-diabetic patients. The difference was significant in the group of W ($p=0.01$). The level of TNF in obese OSAS patients was highly significantly higher than in non-obese group ($p<0.001$). TNF level was significantly higher in obese patients with type 2 diabetes than in the non-obese group. In all subgroups results were statistically significant (whole cohort: $p<0.0001$; M: $p=0.0002$; W: $p<0.0001$). Obese OSAS patients with high IL-6 and high TNF level had higher total cholesterol level, higher LDL and lower HDL level then non-obese OSAS patients and then non-apneic control ($p<0.05$). The correlation between BMI, IL6 and C-reactive protein was positive ($p<0,01$). OSAS has a significant role in the occurrence of metabolic syndrome. This association may be related to inflammatory state.