IL-6 AND TNFA AND LEPTIN RECEPTOR GENE POLYMORPHISM AND IL-6 AND TNFA SERUM LEVEL IN OBSTRUCTIVE SLEEP APNEA SYNDROME PATIENTS

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The obstructive sleep apnea syndrome (OSAS) is a complex disorder influenced by genetic factors, especially those that affect obesity and sleep. Inflammatory cytokines and leptin have a direct effect on metabolism and daytime sleepiness. The goal of the study was to investigate the frequency of distribution of IL-6: G174C, TNFa: G308A and the leptin receptor (LEPR; A223G) polymorphisms in OSAS in relation to IL-6 and THF serum level. A hundred and two patients (71 men (M), 24 women (W) with OSAS (AHI5) and 77 non-apneic controls (39 M and 38 F) BMI-matched were enrolled. Genotyping of DNA sequence variation was carried out by restriction enzyme (IL-6: Lwe I, TNF: Nco I, LEPR: Msp I) analysis of PCR amplified DNA. The frequency analysis of IL-6, TNF and LEPR gene haplotypes significantly differed between the patients and controls. Allele G of IL-6 gene was most frequently seen in homo and heterozygotic configuration in controls ($P<0.001$). Haplotype G/A was more frequently seen in OSAS then in controls (not significant). There was a significant difference in the examined polymorphisms between F and M.. Allele C in IL-6 gene was more frequent in OSAS M ($P<0.05$) but not in F. The level of IL6 in serum was higher in carriers of allele G ($p<0.05$). This effect was also seen in controls. Allele A in TNF gene was more frequently observed in OSAS F ($P<0.05$). Allele A of TNF gene was associated with a higher level of both TNF and IL-6. TNF level was higher in OSAS then in controls ($P<0.05$). Allele A of LEPR gene was more frequent ($P<0.001$) in OSAS then in controls. Allele A of LEPR gene was associated with a low level of IL-6 ($P<0.05$). We conclude that IL-6, TNF, and LEPR gene polymorphisms may contribute to OSAS pathogenesis influencing proinflammatory cytokines expression level.