

EFFECTS OF ANESTHESIA AND SURGERY ON INFLAMMATORY AND OXIDATIVE STRESS PARAMETERS IN PATIENTS WITH OBSTRUCTIVE SLEEP APNEA SYNDROME

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Abstract

Introduction: Obstructive sleep apnea syndrome (OSAS) is a clinical presentation characterized with continuous obstruction of the upper respiratory tract during sleep. The aim of our study was to investigate the levels of inflammation and oxidative stress parameters in patients grouped according to the apnea hypopnea index (AHI) as those with mild, moderate and severe OSAS and those without OSAS, and to investigate the effect of surgery on these parameters. **Materials and Method:** The groups included 18 patients with an AHI below 5 (Group 1), 28 patients with an AHI between 5 and 15 (Group 2), 25 patients with an AHI between 15 and 30 (Group 3), and 30 patients with an AHI of over 30 (Group 4). Blood samples were collected from patients following the induction of anesthesia (1st measurement), after the operation (2nd measurement), on the postoperative 3rd day (3rd measurement) and at the postoperative 2nd month (4th measurement). Arylesterase (ARE), paraoxonase (PON), nitrotyrosine (NT), leukocyte, CRP, HDL and LDL were measured. The ARE/HDL and PON1/HDL ratios were calculated. **Results:** The inter-group comparisons revealed differences in the 3rd measurement of leukocyte count and CRP value, in the 3rd and 4th measurements of HDL, and in the 4th measurement of LDL ($p < 0.05$). Although the CRP level was higher in all measurements in groups with OSAS compared to the non-OSAS group, statistical significance was not reached ($p > 0.05$). No significant difference was observed in the inter-group or intra-group comparisons for ARE, PON and NT values ($p > 0.05$). No difference was observed in the ARE/HDL and PON1/HDL ratios between the groups, whereas they were found to be different between the measurements in patients with OSAS. **Conclusion:** We observed that CRP, PON, ARE and NT levels, and the leukocyte count were not related to the severity of OSAS in patients with OSAS. The difference observed in CRP and leukocyte count may be due to the continuous effect of the inflammatory effect of surgery in the early post-operative period. We believe that HDL, LDL and the ARE/HDL and PON1/HDL ratios may be used as indicators in the follow-up and treatment of patients with OSAS

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