Minimally Invasive Surgery in Patients Undergoing Total Intravenous Anesthesia and Inhalation Anestgesia Comparison of the Effects of Inflammatory Cytokines

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Objective: In our study, we compared the effect of total intravenous anesthesia and inhalation anesthesia to inflammatory cytokine in the patients going through minimal invasive surgery. Our goal was to find out whether inhalation anesthesia or total intravenous anesthesia that we use in anesthesia application made more positive effect on inflammation.

Materials and Methods: In our research 60 patients aged between 18-65 and signed the informative volunteer form, who were ASA 1-2 according to classification of American Society of Anesthesiologists (ASA), were planned to apply of septoplasty and tympanoplasty in Ear Nose Throat Clinic in our hospital were analysed. Patients were divided to two groups. In group 1 (30 patients), 1 MAK desfluran and 10 Âµg/kg/min remifentanil infusion were used to conduct anesthesia after standard premedication and intubation. On the other hand, in group 2 (30 patients) , 0,1 mg/kg/min propofol ve 10 Âµg/kg/min remifentanil infusion were used. Electrocardiography (ECG), non-invasive arterial blood pressure, heart rate, peripheric oxygen saturation (SpO2), and oesophagusial body temperature measurement were applied to all patients. Symptoms were saved in every 15 minutes during the operation. Blood sample were taken from the patients 3 times (before the surgery, after the surgery, one day after the surgery). TNF α, IL-1 beta, IL-6, IL-10 ve IL-12 were studied and analysed in the blood samples.

Results: There were no meaningful difference between two groups in terms of surgery time, heart rate, systolic and diastolic blood pressure, average artery pressure, peripheric oxygen saturation, and oesophagusial body temperature. When the data was compared between the two groups, there was a meaningful difference in 24th hour of post operative TNF-Î± ve IL-10 values. When compared within the group, in the first group patients, blood samples in 24th hour of post operative had lower basal values in comparison with preoperative blood samples. In both group, an increase IL-6 values was detected at blood samples in 24th hour of post operative in comparison with preoperative and after surgery blood samples. Additionally, in group 2 patients, a meaningful increase was detected in after surgery basal values when compared with preoperative basal values. In group 1, IL-10 values were detected higher after the 24th hour of operation when compared to preoperation, whereas in group 2, it was lower. However, it is not statistically meaningful. In group 1, IL-12 values showed gradual increase, in group 2, they lowered gradually, however; it was not statistically meaningful.

Conclusion: In the patients exposed to minor surgery stress, different anesthesia methods lead to different results. Conclusion; in the patients applied TIVA with Propofol and remifentanil, the
meaningful differences in proinflammatory cytokines and decrease in antiinflammatory markers will be more effective in healing scars and limiting the inflammation.