Evaluation of plethysmographic variability index and hemoglobin monitoring in patients who underwent laparoscopic cholecystectomy

Koca E. *Eur Rev Med Pharmacol Sci*. 2022 Jul;26(13):4762-4769. doi: 10.26355/eurrev_202207_29201.

Objective: The aim of the study was to determine the interaction of Pleth Variability Index, Perfusion Index (PI) and Peripheral Blood Hemoglobin (SpHb) values during the surgical phases of laparoscopic cholecystectomy.

Patients and methods: After the approval of the Ethics Committee, the patients who experienced laparoscopic cholecystectomy between October 2020 and January 2021 in our hospital were included in the study. We analyzed peripheral blood hemoglobin, pleth variability index, and the perfusion index values of 87 patients who underwent cholecystectomy. We performed the study with Masimo Radical 7 pulse oximeter probe (Masimo Radical 7; Masimo Corp., Irvine, CA, USA) in this present study.

Results: According to the analysis of our results it has been found that hemoglobin, T5, T6, T7 values were found to be significantly higher than T3, T4, T8 values ($p<0.05$). The PVI T4 value was the highest within the periods, and it was found to be statistically significantly higher between T5, T6, and T7 values ($p<0.05$). Close values were detected in PI, T1 and T8 periods. T2 value measured during the period of mechanical ventilator was found to be significantly higher than the in T1, T3, T6 values ($p<0.05$).

Conclusions: In this study, we followed the SpHb, SPOC, and ORI values in these steps (T1-T8) and investigated the interaction between them. Knowing the response of monitoring to these conditions is important for the treatments to be performed.