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**Prognostic Value of Preoperative High-Sensitivity C-Reactive Protein/Albumin Ratio in Spinal Surgery**

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**Objective:** The relation high-sensitivity C-reactive protein/albumin ratio (CAR) with perioperative adverse events have not been studied in patients undergoing spinal surgery (SS). Therefore, we aimed to evaluate the prognostic value of preoperative CAR on outcome of patients undergoing elective SS.

**Methods:** A retrospective analysis of 811 patients who were older than 18 years and underwent elective SS between October 2014 and January 2019 was performed. Demographic and clinical data were obtained from medical records. Routine preoperative laboratory tests including high-sensitivity C-reactive protein and albumin levels were recorded. The outcomes of interest were perioperative medical complications during hospitalization which is defined as pneumonia, deep or organ space surgical site infection, bacteremia, prolonged mechanical ventilation >48 hours, unplanned reintubation, acute renal failure, sepsis or septic shock, venous thromboembolism (deep vein thrombosis or pulmonary embolism), cardiac arrest, stroke, myocardial infarction, return to operating room, and in-hospital mortality.

**Results:** The perioperative adverse event rate was 9.0% (73 patients). The CAR was higher in the individuals that experienced complicated in-hospital course than in those who did not ( $30.2 \pm 27.5$  vs.  $15.8 \pm 24.5$ ,  $p < 0.001$ ). Multivariate logistic analysis showed that the preoperative CAR was associated with perioperative complications after adjusting for other confounding factors (OR=2.01, 95% CI=1.02–4.23). The best cut-off value of the CAR was 5.25, with 86.5% sensitivity and 76.8% specificity.

**Conclusion:** This is the first study to show an association between preoperative CAR and perioperative adverse events in patients undergoing SS.