

## Evaluation of Immediate Inflammatory Response in Thoracoscopic Esophageal Resection versus Open Approach – A Prospective Study

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### Abstract

*Introduction:* There is an immune response after major surgery and inflammatory complications following complex surgery have a direct impact on morbidity and mortality. Currently, we do not have clinical tools to predict in which subset of patients a major complication will occur. The aim of this study was to evaluate the immediate dynamics of C-reactive protein (CRP), presepsin and procalcitonin in patients in which esophagectomy was performed either through video assisted thoracic surgery (VATS) or open approach.

*Methods:* We conducted a prospective study on 27 patients with a mean age of 61.48 ±6.80 years, 13 patients with VATS and 14 with open approach, most of the patients were on stage III esophageal cancer (81%) and in all cases neoadjuvant treatment was performed.

*Results:* There were increased levels of CRP, presepsin and procalcitonin after both arms of the study with significantly higher values for the open approach and with the same dynamic curves. In 3 cases there were extremely elevated levels of procalcitonin in the absence of a septic complication, in all cases a major complication occurred.

*Conclusion:* Video assisted thoracoscopic esophageal mobilization induces a less immune response, even with the association of laparotomy. An elevated postoperative procalcitonin level can be an early indicator of a major postoperative complication.

**Key words:** esophageal cancer, esophagectomy, immune response, thoracoscopy, VATS