AB148. 180. Preoperative inflammatory markers as predictors of postoperative complications in patients undergoing surgery for colorectal neoplasia

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Background: The prognostic value of inflammatory markers following surgery for colorectal neoplasia is known. However, the association between the same markers preoperatively and postoperative complications has not yet been usefully studied.

Methods: Retrospective study to determine the predictive value of preoperative biomarkers for postoperative complications (Clavian Dindo) in 218 patients undergoing potentially curative elective surgery for colorectal neoplasia. Haemoglobin (Hb), carcinoembryonic antigen (CEA), C-reactive protein (CRP), white blood cells (WBC), including platelets, neutrophils, lymphocytes, platelets-to-lymphocyte ratio (PLR) & neutrophil-to-lymphocyte ratio (NLR) measured preoperatively after diagnosis were examined against 30-day complications after surgery adjusting for age, sex, body mass index (BMI), smoking status, medical history, operation and tumour type.

Results: Multivariate analysis correlated preoperative CRP to postoperative wound dehiscence (P=0.001), sepsis (P=0.019) and cardiorespiratory complications (P=0.007). Platelet count correlated to urinary and neurological complications (P=0.011 and P=0.010, respectively). WBC correlated to respiratory complications (P=0.042), lymphocytes to wound infection (P=0.003), and CEA to anastomotic leak (P=0.032), all with OR >1. Univariate analyses associated Clavien-Dindo grades with age, CRP, WBC, platelets, lymphocytes, neutrophils, PLR, NLR, CEA, Hb, operation, tumour differentiation, smoking status and medical history. Multinomial analysis strongly associated (P<0.001) only Clavien-Dindo grade and CRP levels (OR: 1.28–1.51). CRP receiver operating characteristic (ROC) curve areas were 0.871 and 0.934 with Youden index cut-off values of 5.5 and 17.5 mg/L for any and severe complications respectively.

Conclusions: This association between preoperative inflammatory markers (especially CRP) and postoperative complications is new. While retrospective, these findings aid risk stratification and encourage prehabilitation for address of pro-inflammatory tendencies.

Keywords: Inflammation; markers; prediction; outcomes

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