

Reactive C Protein and White Blood Cells Levels as Early Predictors of Postoperative Inflammatory Complications After Pancreatic Surgery

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Context Pancreatic surgery is challenging and associated with high morbidity, even in high-volume surgical settings; this is probably the reason why, while in other surgical areas fast-track recovery programs are nowadays widely performed, pancreatic surgeons are still reluctant in applying them. The identification of clinical and diagnostic criteria to early predict postoperative inflammatory complications (PIC) development could be useful in tailoring postoperative management to patient personal risk. **Objective** Aim of the study is the assessment of diagnostic accuracy of reactive C protein (RCP) and white blood cells (WBC) levels as early predictors of PIC in pancreatic surgery. **Methods** Between January 2010 and June 2012 we performed 225 pancreatic resections for benign and malignant disease, of which: 136 pancreaticoduodenectomies (PD), 65 left pancreatectomies (LP), 11 total pancreatectomies (TP), 12 enucleations (EN). Postoperative levels of RCP (detected by our laboratory with a high-sensitivity method) and WBC from postoperative day 1 (POD 1) to POD 7, recorded in our perspective electronic database, were analyzed searching for association with PIC (anastomotic leakage, sepsis, airways, urinary tract and wound infection, abdominal collection); using the receiver operating characteristic method (ROC curve),

diagnostic accuracy was evaluated by an area under the curve (AUC) analysis. **Results** PIC occurred in 39.6% of patients (43.4% after PD; 30.3% after LP; 45.5% after TP, 41.7% after EN). Cancer diagnosis, preoperative chemotherapy, age and ASA score did not influence PIC rates. Mean RCP levels were significantly higher in patients who developed PIC each day from POD 1 to POD 7 ($P<0.001$), while mean WBC levels were significantly higher in this group only from POD 4 to POD 7 ($P<0.001$). The highest diagnostic accuracy was observed for RCP levels on POD 4 (AUC=0.835), with a cut-off value of 14,62 mg/L, whose sensibility and specificity were 83% and 81%, respectively. In a similar way, RCP postoperative levels resulted significantly associated, from POD 1 to POD 7, with high grade PIC (grade II-V according to Clavien-Dindo classification) ($P<0.001$). We could not identify any valuable cut-off for WBC. **Conclusion** RCP postoperative level on POD 4 appears to be an useful early predictor for PIC in pancreatic surgery and could guide patient's management (fast track recovery programs and/or further diagnostic research for septic processes); otherwise, WBC values, probably more influenced than RCP by physiological postoperative acute inflammatory response, fail in decisively distinguishing patients who are developing PIC.