Procalcitonin: an allied in the management of the patient submitted to abdominal surgery

Key words: Procalcitonin. Surgery. Infection.

Dear Editor,

The infectious complications in the abdominal surgical patient suppose an important increase in their morbidity and mortality. The early diagnosis and treatment are fundamental although sometimes the characteristics of the patients make them difficult. The procalcitonin (PCT) is a biomarker that has proved not only its utility in the diagnosis of several infectious diseases but also to be able to predict the development of organ dysfunction and death. It use in the postoperative period could provide the detection of complications and control their treatment.

Case report

We present the case of a 70 years old male with history of hypertension and acute myocardial infarction who was investigated because of abdominal slight pain and anemia. He came planned to our hospital to perform a colonoscopy and previously he consumed a laxative solution of Bohn. During the procedure he suffered a perforation in the sigma for this reason he was operated urgently finding a perforation of 1 cm of length that was directly sutured with a simple suture and a penrose drainage was placed. He was transferred to the intensive care unit (ICU).

When he arrived to the ICU a microbiological cultures was removed and broad-spectrum antibiotics administered. Among the analytical measurements a procalcitonin and C reactive protein (CRP) assessment was performed showing a normal value of CRP (0.25 mg/dl) and sensibly elevated value of PCT (0.6 ng/ml). In the measurements performed 2 hours and 12 hours after the patient’s admission and important increase on PCT values (12.73 and 220 ng/ml) was observed whereas the CRP values only raised lightly (0.8 y 15.5 mg/dl). In the abdominal drainage culture an Enterobacter cloacae sensitive to the antibiotics administered was isolated. The patient evolved successfully and was discharged from the ICU 72 hours after.

Discussion

Serum procalcitonin (PCT) is a 116-amino-acid peptide precursor of calcitonin that is secreted to the bloodstream from several tissues when infection occurs whereas its levels in health persons are very low (<0.05 ng/ml) or undetectable (1). It is a good diagnosis biomarker of bacterial infection more reliable than others used in the clinical practice (CRP or leucocyte count) or other experimental biomarkers (IL-6, IL-8 or proadrenomedullin) (2,3). It contributes to the diagnosis of this type of infection detecting patients on risk on diseases like peritonitis or pancreatitis, behaving like a prognosis factor to the development of organ dysfunction or death (4,5). Although there is not experience enough on surgical patients it use has allowed to reduce on safe the antibiotic use in pneumonia and exacerbation of COPD with the advantages that it provides (6).

In conclusion, the application of this new biomarker on clinical practice would allow to improve the management of the patient with abdominal diseases by a simple and safety form.

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References


