

Significance of Biomarkers in Early Diagnosis of Abdominal Sepsis

Dragana D. Arbutina¹, Ljiljana Milic^{1,2}, Vladica V. Cuk^{1,2}, Jovan T. Juloski^{1,2}, Radosav Radulovic¹, Ana Starcevic³, Aleksandar R. Karamarkovic^{1,2}

¹Surgical Clinic "Nikola Spasic", "Zvezdara" University Clinical Center, Belgrade, Serbia

²Department of Surgery, Faculty of Medicine, University of Belgrade, Belgrade, Serbia

³Institute for Anatomy, Faculty of Medicine, University of Belgrade, Belgrade, Serbia

Abstract

Introduction/Objective: Peritonitis is one of the most important sources of abdominal sepsis. Since intra-abdominal infection leads to the activation of the inflammatory response, this suggested that some of these mediators could be used as markers of the severity of newly formed sepsis, but primarily to identify or rule out new-onset sepsis. The aim of this study was to evaluate the sensitivity and specificity of serum markers of inflammation: C-reactive protein, procalcitonin and serum amyloid A in the serum of patients with diffuse secondary peritonitis.

Methods: The prospective cohort study was conducted at the Clinic for Emergency Surgery of the Clinical Center of Serbia in Belgrade. The study group consisted of 100 patients aged 18 to 70 years, with signs of acute abdomen due to diffuse secondary peritonitis.

Results: CRP and PCT are so far among the most valuable preoperative markers for distinguishing sepsis from SIRS. On the first postoperative day the analysis of the relationship between sensitivity and specificity at the different breakpoints used indicates a greater diagnostic accuracy and greater sensitivity of SAA compared to CRP and PCT. In the remaining postoperative period in our study, the ROC curve mostly coincided with the diagonal line, so CRP, PCT, and SAA had little diagnostic accuracy.

Conclusion: The results of our study suggest that finding a specific marker for the diagnosis of abdominal sepsis, a marker that would differentiate between SIRS and sepsis, pre- and post-operatively, would be very useful.

Key words: SIRS, sepsis, C-reactive protein, procalcitonin, serum amyloid A