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Interest of SIRS score in acute pancreatitis severity prediction

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Abstract

Acute pancreatitis (AP) is an acute inflammatory process of the pancreas. The purpose of our work is to test the reliability of the SIRS score in assessing the severity of the AP in our context. Based on the analysis of our results, this score is strongly correlated with the occurrence of complications during the AP especially the infection of the necrosis flows especially if the SIRS persists beyond 48h. This is consistent with the new international recommendations for the use of this score in assessing the severity of the AP and predicting its evolution.

Keywords: acute pancreatitis, SIRS, severity

Introduction

Acute pancreatitis (AP) is an acute inflammatory process of the pancreas. The initial severity assessment was based on specific or non-specific clinical-biological scores including Ranson, Imrie, APACHE II, SOFA. In our context, obtaining and applying these scores is not always an easy thing to do or the use of SIRS scores that presents a simple score to be calculated from 4 criteria from admission. Is this SIRS score reliable to assess the initial severity and predict the severity of the AP?

Methods

Our work is a retrospective study of all patients with acute biliary pancreatitis hospitalized in visceral surgery department of university hospital Mohammed VI in Marrakech (Morocco) during the period from June 2018 to December 2018, or a duration of 6 months. The purpose of our work is to analyze the epidemiological aspects of AP and primarily to verify the reliability of the SIRS score in assessing the severity of AP in our context.

Results

The Age ranges from 18 to 80 years with an average age of 51 years and a female predominance (Sex ratio of 0.4%). The diagnosis of AP was presented with a suggestive clinical picture associated with lipasemia greater than 3 times normal in 95.5% of cases. Abdominal CT showed a predominance of Stage C Balthazar AP with 38.5%, followed by Stage E with 18.5%, SIRS at admission was positive at admission in 50% of cases, and persistent >48 hours in 17.5% of cases. Complications were dominated mainly by over-infection of necrosis flows found in 13.8% of cases. According to the Atlanta classification, we found: mild PA in 50% of cases, moderately severe PA in 35% of cases and severe PA in 15% of cases.

Discussion

The SIRS is defined by the combination of two or more of the following conditions: temperature < 36 °C or > 38 °C; heart rate > 90/min; respiratory rate > 20/min or Paco₂ < 32 mmHg; leukocytosis > 12000/mm³, < 4 000/mm³ or the presence of circulating immature forms (> 10% of cells).

A SIRS that persists for more than 48 hours is associated with 25% mortality versus 8% mortality for a transient SIRS [1]. The sensitivity and specificity of a persistent SIRS for mortality prediction are 77-89% and 79-86% respectively. SIRS present at admission has a sensitivity of 100% but a specificity of 31% [2].

In the study Vinish et Coll (India) [3] a comparison was made between the SIRS score, PAH and

BISAP and the conclusion was that all 3 scores were effective in predicting the occurrence of severe pancreatitis with necrotic flow infection, and that none was significantly superior to the other.

In the study Kwong et Coll (USA), [4] it was recognized that SIRS persistent beyond 48h was the most reliable prognostic marker for distinguishing between severe and less severe pancreatitis.

The international conference of the American Pancreatic Association came out with conclusions published in 2013 [6]. Among these findings was the adoption of the SIRS as the only score to predict severity at intake and 48h. Due to the simplicity of this score, its easy memorization, the ability to repeat it, none of the other scores (APACHE II, Ranson, Glasgow) or markers (Including the CRP) were retained.

In our study, 100% of patients with a complication during AP had a positive SIRS at admission. Over-infection of necrosis flows was present in 80.9% of patients with SIRS persistent beyond 48h. This is consistent with the new international recommendations for the use of the SIRS score in assessing the severity of the AP and predicting its evolution.

Conclusion

In the light of our study and the literature, we concluded that the SIRS score is a simple, accurate and specific means for predicting and evaluating the severity of AP by taking into account the inconveniences of other multifactorial scores.

Abbreviations

AP: Acute Pancreatitis; SIRS: Systemic Inflammatory Response Syndrome; APACHE: Acute Physiology and Chronic Health Evaluation; SOFA: Sequential Organ Failure Assessment
CT: computed tomography;
PAH: Pulmonary Arterial Hypertension; BISAP: Bedside Index of Severity in Acute Pancreatitis

Competing interests

The authors declare that they have no competing interests.

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