DIAGNOSIS OF SEPSIS IN SEVERE BURNED PATIENTS (P092)

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Background: Mortality in severe burned patients has rapidly decreased in the last years. Unfortunately sepsis with multi-organ failure remains the major cause of death and an important cause for morbidity after burns injuries. The diagnosis of sepsis in burn patients can be difficult to distinguish from the usual hyperdynamic, hyperthermic, hypermetabolic post-burn state. Moreover, blood cultures are commonly negative and fever spikes are not proportional to the degree of infection. This is the reason for the American Burn Association to affirm that all patients with extensive burn wounds have a systemic inflammatory response syndrome. As a consequence, terms such as systemic inflammatory response syndrome and severe sepsis are not applicable in burns patients. The use of markers that can aid in the earlier diagnosis of sepsis and differentiate between an inflammatory response and sepsis is an excellent strategy for decreasing its associated morbidity and mortality and optimizing patient outcomes. Soluble CD14 subtype (sCD14-ST), also named presepsin, is a 13 kDa truncated form of soluble CD14 (sCD14), consisting of 64 amino acid residues. Presepsin forms in time of bacterial or fungal phagocytosis. Sepsis are characterized by an early, significant increase in presepsin blood concentration. The aim of the study was to identify the diagnostic significance of presepsin in severely burned patients with sepsis.

Method: Our analysis was based on a prospective study which was conducted from June 2014 to April 2015 at the Burns Centre of Minsk City Emergency Hospital, Belarus. Patients having skin burns covering more than 20 percent of the body surface and patients with burned area less 20 percent of the body surface with inhalation injury. All patients were divided into sepsis and non-sepsis in according to the sepsis diagnostic criteria Editorial Board of Burn Infection of Chinese Medical Association (CMA). Presepsin and procalcitonin levels were measured in burned patients at admission and daily thereafter.

Result: The data of 57 patients with severe burn were analyzed. In 34 patients was diagnosed sepsis in according of diagnostic criteria CMA and microbiological finding of blood tests confirmed the presence of sepsis. 23 severe burned patients had no signs of sepsis and their blood tests were negative. Men women ratio was 3.5/1. The median age was 48 years old. The area of full-thickness burns, penetration and severity of inhalation injury were significantly more in patients with sepsis than non-sepsis group (p25-Me75) of plasma level of presepsin in septic patients was 957 (781.5 - 1618) pg/ml on first day of sepsis. In non septic patients Me (Me25-Me75) of presepsin levels was 408.5 (322.5 - 559.4) pg/ml. The Me (Me25-Me75) of procalcitonin level was 0.68 (0.48 - 3.12) ng/ml in septic patients, and in control group - 0.32 (0.22-0.45) ng/ml. The presepsin, procalcitonin values were significantly higher in septic patient than control group (p

Conclusion: Patients with full-thickness burns and severe inhalation injury have a high risk of sepsis. Presepsin is a valuable and sensitive biomarker for diagnosis of sepsis in burn patient.