



Translocation of Microbes into the Systemic Bloodstream in Patients with Chest Trauma Accompanied by Shock

Raxmonov N. X.

Bukhara State Medical Institute, Bukhara Branch of the Rncemp, Bukhara Uzbekistan

It is known that a chest injury (THC) accompanied by the development of shock creates conditions for the translocation of bacteria (TB) from the mucous membranes, in particular the intestine, into mesenteric lymph nodes, and in exceptional cases – into the systemic bloodstream. An important role in this process is played by the development of acute tissue hypoxia, systemic inflammatory response syndrome (CVD).

The aim of the study was to study the risk of translocation of bacteria into the systemic circulation in THC accompanied by the development of shock.

Materials and methods. 41 victims with THC, accompanied by shock of II and III severity, who were admitted to the intensive care unit of the Bukhara branch of the RNCEMP were examined. Bacteriological examination of blood and DNA diagnostics of blood samples, immunological examination of blood were carried out upon admission of patients to the hospital, 12 hours, 24 hours, 3, 5, 10 days after the injury. The comparison group consisted of 20 healthy people (cf. age 35 ± 2.9 years). The severity of the damage was assessed by the magnitude of the BST (prognostic scale of G.I. Nazarenko).

The victims were divided into 2 groups: group 1 – patients who did not have TB in the bloodstream (10 people) and group 2 – with TB in the blood (4 people). 5 patients of group 1 developed localized purulent complications (BST 11.4 ± 3.9 , age 37 ± 10.7 years), and 5 – severe sepsis (BST 18.2 ± 3.0 ; age 37 ± 11.3 years). 4 patients with severe sepsis died. In patients of group 2 (BST 17.6 ± 4.1 ; age 42.8 ± 13.3 years), *Str. pyogenes*, *Str. β -haemolyticus* were detected in the blood 12, 24 and 48 hours after injury.

The course of the early period after the injury was also complicated by the development of purulent complications (2 people) and severe sepsis (2 people). All patients in this group survived. In all the victims of group 1, within 12 hours after the incident, signs of a systemic inflammatory response progressively increased with the development of GO and systemic inflammation – with the development of severe sepsis, namely: an increase in the production of reactive oxygen species, an increase in the blood content of IL-6, procalcitonin. This period was also characterized by an increase in the number of activated monocytes in the blood (CD18+, CD14+, HLA-DR+) and an increased content of sIgA. A distinctive feature of group 2 patients (with bacteremia) in the period of early reaction to trauma was the absence of an increase in the blood content of IL-10, cortisol, the number of activated monocytes, and the number of CD14+ monocytes was reduced throughout the observation period. Nevertheless, the development of the inflammatory process was indicated by a moderate increase in the level of IL-6, C-reactive protein, procalcitonin in the blood, as well as a multiple (5 times compared to the norm) increase in the level of sIgA in the blood serum.

Conclusions.

1. In THC, accompanied by shock of II and III severity, bacterial translocation into the systemic circulation was detected in 28.6% of patients in the first 12-24 hours after injury.



2. The main feature of the immune reactivity of patients in this group was functional insufficiency of neutrophilic granulocytes of the blood, high reactivity of epithelial cells of the mucous membranes and B-lymphocytes of the mucous membranes, cytokinemia.

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