

## Proinflammatory cytokines in patients with sepsis on the background of diabetes mellitus

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Quantitative characterization of the dynamics of changes in septic manifestations in patients with purulent-inflammatory diseases of soft tissues against diabetes showed that upon admission of patients to the clinic, systemic inflammatory response syndromes (SIRS) - SIRS2 and SIRS3 (23.3% and 21.9% respectively). 18 patients (24.7%) showed no signs of SIRS (SIRS0).

In order to assess the presence and degree of generalization of the inflammatory process, we have evaluated the changes in the content of cytokines in the serum (IL-1b, IL-6 and TNF- $\alpha$ ) in patients in the course of purulent-inflammatory diseases of soft tissues on the background of diabetes mellitus.

Changes in the concentration of cytokines in the serum of patients with purulent-inflammatory diseases of soft tissues on the background of diabetes mellitus in the dynamics of their treatment were not unambiguous. The highest values were allocated IL-6, which, on admission of patients with purulent-inflammatory diseases of soft tissues against diabetes mellitus, exceeded the values of IL-1b and TNF- $\alpha$  by an average of 1.7 times.

In the dynamics on the 3rd and 5th days of treatment, IL-6 increased relative to the first term to  $38.3 \pm 7.4$  pg/ml. At the same time, the 7th day of the study was characterized by a decrease in this marker by 1.5 times compared with the initial values.

A similar trend of change, albeit in the short-term range, was also detected in relation to IL-1b. The decrease in this indicator on the 7th day of treatment was significant (2.3 times) compared with baseline values.

At the same time, the dynamics of changes in the concentration of TNF- $\alpha$  was characterized by stable values on the 3rd and 5th days of treatment compared with the period at which patients entered the clinic. The decrease in this indicator on the 7th day of the treatment was as significant as in the case of the previous cytokines (almost 2 times).

In general, it should be noted that the changes in the content of cytokines in the blood of patients with sepsis against diabetes mellitus confirmed the well-known data on their role in the generalization of infection. However, the preservation of high values under the condition of treatment for 5 days testified to the divergence of conclusions between the presence of a septic complication and its appearance. In this regard, it seems to us necessary to analyze the level of change in diagnostic markers of sepsis in the blood, depending on the type of its manifestation.

The cytokines IL-1b, IL-6 and TNF- $\alpha$  also tended to increase significantly. In particular, IL-1b in patients with sepsis syndrome increased by 2.4 times compared with normal values. In severe sepsis, this indicator was 2.6 times higher, and in patients with septic shock, 4.5 times ( $p < 0.05$ ).

In the study of IL-6 in patients with sepsis syndrome, the excess of its normal values in the blood plasma of patients with purulent-inflammatory diseases of the soft tissues was 2.3 times as a result of diabetes mellitus, and 3.1 times in severe sepsis. The maximum value of this indicator was observed in patients with septic shock (the excess of this indicator above the normal values was 3.8 times).

TNF- $\alpha$  responded to changes in the septic-type complications more significantly than previous indicators. In all cases of the development of septic complications in patients with purulent-inflammatory diseases of soft tissues on the background of diabetes mellitus, the order of manifestation of the severity of the pathological process was noted. In sepsis syndrome, this indicator exceeded normal values by 3.9 times, in severe sepsis - by 8.9 times, and in septic shock - by 14.5 times.

Thus, our study showed that diagnostic markers of the generalization of the inflammatory process, along with the signs of SIRS, have informational value, which can undoubtedly be used in assessing the effectiveness of therapy and prevention of sepsis. In this case, the

peculiarity of the course of purulent-inflammatory soft tissue disease in patients with diabetes mellitus is the worn out clinical signs of infection generalization with reliable laboratory data on indicators such as IL-1b, IL-6, TNF- $\alpha$ . In this regard, it seems to us that in order to objectify the diagnostic value of these laboratory methods for assessing the patient's condition, it is necessary to develop integrated methods, which in turn will allow to unify the system of the treatment and diagnostic algorithm.