PROGNOSTIC VALUE OF PROCALCITONININ IN COVID-19.

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Purpose of the study. Study of serum procalcitonin levels to decide whether to start or discontinue antibiotic therapy, as well as to determine the progression of disease severity in COVID-19 patients. The study of procalcitonin levels is performed to diagnose bacterial infection, sepsis, septic complications, purulent-inflammatory pathologies and clarify the cause of inflammation.

Materials and methods. From June 10 to September 12, 2021, 120 patients were admitted to the Bukhara Regional Infectious Diseases Hospital120. Patients were divided into severe cases (n=60) and moderate cases (n=60). Of these, 12 (20.0%) patients were admitted to the intensive care unit. The concentration PCT was determined using the ELISA method using THE PCT-ELISA-BEST reagent kits. In patients with moderate and severe forms, the study was performed on the 2nd day of admission, the 3rd and 5th days of treatment. The upper limit of the norm was assumed to be the concentration of 0.05 ng / ml.

Results. Based on the results of laboratory data, it was found that in 64 (53.3%) of the 120 observed patients, the PCT content was 0.05-0.1 ng / ml in 46 (38.33%) patients, 0.1-0.25 ng/ml in 10 (8.33%), 0.25 - 0.5 ng/ml in 35 (29.18%), 0.5-2.0 ng / ml - in 19 (15.83%), and more than 2.0 ng/ml- in 10 (8.33%). These tests were obtained within the first 48-72 hours after the onset of the disease. And based on the content of PCT in the blood serum, they were conditionally divided into 3 groups. Further tests were repeated on the 3rd and 5th days, and in severe patients, the level ofKsubcutaneous fat was also studied on the 7th day of treatment. Patients with a PCT level of more than 0.1 ng/ml were considered co-infected and were recommended for treatment with antibiotics (a combined drug of amoxicillin and clavulanic acid, cephalosporins of 2-3 generations), severe patients with meropenem and respiratory fluoroquinolones (levofloxacin). The effectiveness of treatment was assessed as insufficient if after 3 days of treatment there was no decrease in the level of PCT in the blood serum by 50%. Therefore, it is necessary to change the tactics of antibacterial therapy. If the level of PCT decreases, it will mean that the treatment gave the expected result. As soon as there is a decrease in the number of PCT by about 80-90% from the peak level, it is recommended to stop antibacterial therapy. The results of the study showed that in 46 (71.9%) patients of the first group under observation, there was a significant decrease in the level of PCT, which did not differ from the norm, in 8 (12.5%) patients, the content of PCT remained unchanged. While 10 (15.6%) patients had an increase in the level of PCT in the blood serum and were prescribed antibacterial therapy.

In 38 (82.6%) patients of group 2 who received antibacterial drugs, as in cases of co-infection, the content of PCT decreased by 50%, and in 8 (17.4%) patients, the level of PCT remained significantly high. Only 3 (30%) patients out of 10 seriously ill patients showed a positive result. When there was no decrease in the level of PCT on the 3rd day of treatment against the background of antibacterial therapyue, another combination of antibacterial drugs was prescribed for the treatment of these patients.

Conclusion:

1. Procalcitonin is a biomarker for assessing the risk of bacterial infection and disease progression.
2. Procalcitonin levels can serve as biomarkers of bacterial infection joining COVID-19 and determine the timely administration of antibacterial drugs and the duration of the course of antibacterial therapy.
3. A decrease in the level of PCT by 80-90% from the peak level is one of the markers of discontinuation of antibacterial therapy.

References:

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