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# Method for prevention of generalization of Infection in patients with Acute Purulous Destructive Pulmonary Diseases with COVID-19

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**Relevance:**

The pandemia of the coronavirus infection has far-reaching consequences beyond the spread of the disease itself and attempts by various countries to organize quarantines. In the media, the phenomenon of the influence of the disease on the life of society and its consequences are increasingly called the term "coronacrisis". Suppurative lung diseases are one of the most severe pathologies in surgery. Many researchers note that the number of patients with purulent lung lesions still remains at a fairly high level and accounts for 69.7% of the total number of inflammatory diseases of the chest cavity.

Acute purulent-destructive lung diseases, in patients who have undergone COVID, proceeds in a peculiar way, with a different clinical picture-they have the peculiarity of the clinical manifestation of the disease, often accompanied by septic complications against the background of widespread destruction of the lungs. It has also been proven that in patients who have undergone COVID-19, purulent-destructive lung diseases occur against the background of a high activity of the toxic enzyme phospholipase A2 in the biolayer of alveolar membranes. This, in turn, contributes to the progression of destruction in the lung tissue. Another feature of the manifestation of this type of inflammatory process is the predominance of a destructive nature over an inflammatory one.

**Purpose:**

Given the importance of pathogenetic changes in the endothelial system, we deliberately began to assess the parameters of nitric oxide in the arterial and venous blood systems. Based on this, pathogenetic treatment approaches have been developed.

**Materials and Methods:**

In our study, we analyzed the results of treatment of 65 patients who received inpatient treatment in purulent surgery and surgical complications of diabetes mellitus at the multidisciplinary clinic of tma from September 2020 to July 2021. All these patients had a history of covid-19 with varying degrees of severity of treatment, the distribution of patients by sex and age confirmed the well-known tendencies characteristic of purulent lung diseases: men aged 21 to 60 years old are most susceptible to the disease (63%), among whom workers predominate physical labor (57%), employed in industry and agriculture. Knowledge workers were 23%, students and retirees 30%. The overwhelming majority of patients (58%) smoked, more than half abused alcohol, did not comply with household and hygienic standards. The majority of patients (71%) were admitted to the clinic from various hospitals of a therapeutic profile, where they, as a rule, received purely conservative therapy. The duration of the disease upon admission of patients to the clinic mainly varied from 9 days to 3 months. Of the 65 patients, only 26 were admitted within 2 weeks from the onset of the disease.

Based on the assessment of the endothelial system of the lungs, we have developed a method for predicting the generalization of the process both in the lung tissue and in the body as a whole.

The first stage of antibacterial-detoxification treatment is carried out in the acute period against the background of the most adequate drainage and sanitation of a purulent-necrotic focus in the lung and assumed the use of all the means available in the arsenal of a medical institution, appropriately

shown in a particular case. Against the background of the first stage of therapy, it is necessary to connect the next stage of treatment, aimed at correcting nndl. In this case, it is important to determine its degree, since the further tactics of the therapy carried out depends on it.

With a compensated degree of insufficiency of the non-respiratory function of the lungs, general drug therapy is supplemented by the connection of means of protein-synthetic enhancement.

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With the development of severe metabolic changes both in the lung and in the body as a whole , the situation is aggravated by the imperfection of the methods of conservative treatment of acute purulent-destructive diseases of the lungs, among which the leading is the intravenous route of administration of drugs.

A critical analysis of the results of the use of long-term intra-arterial catheter therapy in the treatment of patients with acute purulent-destructive diseases of the lungs revealed a number of advantages of the proposed method in comparison with conventional methods of treatment. The main advantage of long-term intra-arterial catheter therapy in this contingent of patients is the ability to provide a high concentration of drugs in the pathological focus. This is achieved through pathogenetically grounded methods for correcting microvasculature disorders with the elimination of arterio-venular bypass grafting. Under these conditions, the methods of drug administration (intravenous, intramuscular, endolymphatic), as well as intra-arterial administration of antibiotic solutions alone cannot provide a therapeutic antimicrobial effect, because The drug will be discharged into the venous bed bypassing the capillary networks of the pathological focus.

The regime of intravenous administration of drugs with the inclusion of rheological drugs primarily provides for the correction of the above microcirculatory disorders, which are, in principle, protective reactions of the body, aimed at preventing the entry of toxins and infection into the central bloodstream and thereby reducing intoxication and sepsis. Naturally, an obligatory attribute in the complex treatment of patients with widespread acute purulent-destructive lung diseases in patients who have undergone sarscov-2 should be, as early as possible, evacuation of pus with adequate sanitation of the destruction focus. Under these conditions, the opening of the microvasculature of the focus cannot be accompanied by the progression of intoxication and septicemia. Thanks to such a comprehensive solution to the problems of local surgical intervention and intra-arterial administration of medicinal substances, prerequisites are created to ensure high concentrations of medicinal products in the affected area.

The main basic solutions for long-term intra-arterial catheter therapy were at the first stage rheological (rheopolyglucin, reogluman) and detoxification (hemodez), at the second stage - protein preparations (albumin, alvezin) and glucose-vitamin mixtures (5% glucose solution + 10 ml 5 % ascorbic acid solution).

Drug treatment for decompensated endothelial dysfunction should be complex and combine long-term intra-arterial and intravenous catheter therapy, and venous catheterization is performed through the central vein of the superior vena cava system.

The scheme of long-term intra-arterial catheter therapy does not differ from the one described above. An important rule for this treatment is:

-simultaneous intra-arterial administration of amino acid mixtures and intravenous administration of energy sources (carbohydrates) and plastic material (fat emulsions);

- The ratio of intra-arterially administered amnic acids and intravenous non-protein energy in the form of carbohydrates and fats should be as follows: 150-180 non-protein calories per 1 g of injected

Treatment includes at the first stage, intravenous administration of fat emulsion preparations in warm form at a rate of 12-15 drops per minute in a volume of up to 500 ml per day against the background of intra-arterial administration of a 10% albumin solution (Table 1).

Subsequently, the infusion of Ethyl alcohol in the form of a 33-35% solution together with coal and water at a rate of 0.1 g / kg / h and in a total daily dose of no more than 1 g/kg of body weight is connected to the same system

It should be remembered that the introduction of ethyl alcohol together with glucose increases the rate of its oxidation in the body, thus avoiding undesirable side effects-feelings of intoxication, tachycardia.

**Conclusions:**

The development and implementation of original methods of combined intra-arterial and intravenous correction of disorders of endothelial dysfunction of the lungs in patients with acute purulent-destructive diseases of the lungs who have undergone SARS-CoV-2, the fight against infection and the inflammatory process makes it possible to reduce the time of catheter therapy and accelerate the process of limiting purulent destructive process, increase the frequency of complete and clinical recovery, reduce the frequency of chronicity and mortality.

**Biography**

Bobokulova Shokhista Abdualimovna is currently working as assistant and Surgeon at Tashkent Medical Academy, Uzbekistan. She received her Post-Doctoral Degree from the Tashkent Medical Academy, Uzbekistan. Her research interest mainly focusses on surgical infections.

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