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RESULTS OF BIOCHEMICAL EXAMINATION OF PATIENTS WITH INFLAMMATORY DISEASES OF THE NOSE

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Abstract

Infectious diseases, despite modern treatment and prevention capabilities, remain the main pathology of the population. Today it is believed that from 1 to 5% of all patients with acute respiratory diseases, including influenza, have signs of infectious myocarditis. The true frequency is very difficult to establish, since latent and mild forms, most characteristic of childhood, range from 24 to 33%, are rarely diagnosed and end independently in the absence of any special treatment or transform into a chronic process with nonspecific symptoms.

Keywords: Rhinitis, rhinosinusitis, sinusitis, polyp.

Introduction

The immediate cause of death is acute heart failure, progressing against the background of water and electrolyte disturbances, intoxication and the direct effect of the pathogen or its toxin on cardiomyocytes [2-6]. Any infectious disease may be accompanied by certain changes in the functioning of the cardiovascular system of varying degrees of severity and duration.

Impaired function of the cardiovascular system can occur in approximately 80% of patients with various acute infectious diseases [1,4,9,10-15]. Most of them represent a natural functional reaction of the body and are completed independently, without additional special treatment [7,16-19]. But some patients develop arrhythmias and heart failure, often with a long, protracted course, and sometimes with a risk of death.

It is now known that any of the known pathogens can cause myocardial damage, including myocarditis [5,20]. Often the etiological factor is viruses that can directly interact with cardiomyocytes , which leads to cell apoptosis [6].

The diagnosis of myocarditis or cardiomyopathy is beyond doubt, usually in severe forms of myocardial damage. With mild or moderate severity, the observed clinical symptoms of complications are nonspecific and varied, depending not only on the etiology and severity of the manifestations of the main process, but also on the individual characteristics of the organism.

Controversies remain in approaches to the treatment of infectious myocardial lesions. Scientific studies assessing the effectiveness of various drugs for infectious myocarditis that developed

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against the background of acute respiratory infections are few and contradictory. Metabolic agents for various myocardial pathologies, according to some authors, are undoubtedly necessary, but others consider their prescription unjustified [5,10].

Almost 80% of patients with various acute infectious diseases exhibit certain changes in cardiovascular activity [8]. Most of them represent a natural functional reaction of the body to the influence of a pathogen and completely disappear as a result of treatment of the underlying pathology. However, in some cases, an independent pathological process develops in the heart, which can have a direct impact not only on the course of the infection, its duration and outcome, but also determine the quality and duration of life [4,9].

The purpose of this study is to identify biochemical changes in the blood during Inflammatory diseases of the nose and paranasal sinuses in patients with myocarditis .

Materials and methods of research. The study included 186 patients with myocarditis who were hospitalized at the Republican Specialized Cardiology Center. The patients were divided into two groups. The first group consisted of 80 patients with chronic inflammatory diseases of the nose and paranasal sinuses. The second group consisted of 106 patients without pathology of the nose and paranasal sinuses. All patients were subjected to a comprehensive clinical and laboratory examination, which included a medical history, laboratory tests, nasal endoscopy, X-ray examination and biochemical studies. The control group consisted of 20 healthy volunteers from among the employees of the 2nd clinic of the Tashkent Medical Academy.

Research results. Patients of group I complained of difficulty in nasal breathing (92.5%), nasal discharge (78.4%), impaired sense of smell (22.2%), low-grade fever (36.4%), general weakness (42.5%). Headaches were also often noted (78.4%), more in the maxillary region. Patients of group II had practically no complaints from the nose and paranasal sinuses. Comparative blood test results in the study groups (Table 1) revealed:

Table 1 Indicators of general blood test in patients with myocarditis

Indicators	I , M±m (n =80)	II , M±m (n =106)	Control group, M±m (n =20)
Leukocytes (10 ^{9} /l)	7.54±0.60*	6.84 ± 0.52 _ _	6.15±0.39
ESR (mm/hour)	21.05±3.40*	18.73 ± 3.05 * _ _	6.36±0.80
Lymphocytes (%)	22.64±1.96	2 6.45 ± 1.87 _ _	30.87±1.90
Monocytes (%)	4.61±0.56	4.25 ± 0.42 _	3.58±0.37
Eosinophils (%)	1.24±0.26	1.46 ± 0.30 _	2.47±0.32
Band (%)	4.23±0.77	3.2 8 ± 0.62 _	2.66±0.36
Segmented (%)	67.22±1.50	6 4.55 ± 1.62 _ _	60.75±1.86

* - the difference is highly significant, $p < 0.001$.

Laboratory blood tests showed leukocytosis and increased ESR in all patients, especially these changes were more pronounced in patients with chronic inflammatory diseases of the nose and paranasal sinuses. Moreover, in this group the number of leukocytes was 7.54±0.60x10 9 /l, and ESR was increased to 21.05±3.40 mm/hour.

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Table 2 Indicators of biochemical blood tests in patients with myocarditis and the control group

Indicators	I , M±m (n =80)	II , M±m (n =106)	Control group, M±m (n =20)
Creatinine (µmol /l)	78.12±3.10	82.22±2.92	84.60±2.82
Urea (mmol/l)	5.04±0.23	5.85±0.30	6.65±0.45
ALT (mmol/ g.l)	0.70±0.09	0.64±0.07	0.42±0.06
AST (mmol/ g.l)	1.13±0.23*	0.94±0.18	0.48±0.06
LDH (mmol/ g.l)	7.97±1.24*	7.20±1.03*	4.90±0.28
CPK (mmol/ g.l)	10.68±3.10*	8.76±2.74*	2.86±0.49
Protein (g/l)	73.40±1.51	72.25±1.52	70.18±1.65

* - the difference is highly significant, $p < 0.001$.

As indicated in Table 2, biochemical blood tests also show more pronounced changes in patients of the first group than in patients of the second group.

An increase in AST (1.13±0.23 mmol/ g.l) in patients with myocarditis is associated with cell destruction or increased plasma membrane permeability. There was also an increase in creatine phosphate kinase (CPK) in patients of both groups (10.68±3.10 mmol/ gl and 8.76±2.74 mmol/ gl , respectively), which indicates increasing myocardial damage.

When studying troponin levels I quantitative method in patients of the first group with chronic diseases of the nose and paranasal sinuses, its average concentration was significantly higher ($p = 0.0001$) than in patients of the second group without pathology of the nose and paranasal sinuses (0.49 ± 0.09 Ng / ml and 0.39±0.06 Ng /ml, respectively). Troponin level data I quantitative method are presented in Table 3.

Table 3 Troponin level I quantitative method in patients with myocarditis

Groups	of patients n	Troponin level I , Ng /ml, M±m
Group I	80	0.49±0.09
Group II	106	0.39±0.06
Control group	20	0.05±0.02

In connection with the above, laboratory research showed specific changes in the blood during myocardium, as well as a comparative assessment of pronounced changes during the simultaneous course of inflammation in the myocardium and paranasal sinuses.

Thus, our studies of patients with myocarditis revealed the fact that the clinical course of myocarditis is more pronounced in patients with chronic inflammatory diseases of the nose and paranasal sinuses due to the presence of a focus of infection in the ENT organs.

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