Characteristics of the spectrum of pathogenic microorganisms detected in patients with inflammatory arthropathies

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Introduction

Inflammatory arthropathies are a common and significant pathology of the joints, as a rule, significantly and long-term impairment of the ability to work and the quality of life of patients. The reason for their development (inductor or trigger) is most often the body's immune and immune-inflammatory responses to pathogenic microorganisms [1]. In this regard, the etiological diagnosis of inflammatory joint lesions is an urgent problem, on the adequate solution of which the probability of the success of therapy and the duration of improvement or remission of the disease largely depend. The complexity of the situation lies in the fact that usually in any patient who comes for the purpose of diagnosis and treatment, many different pathogens are tested in general, and only some specific pathogens in specific affected joints are rarely tested.

Materials and methods

In order to assess the spectrum of tested pathogens and determine their possible significance in terms of inflammatory arthropathies, we selected from the database of patients who received examination and treatment at the Center for Resonant Medicine "INFOMED" in 2015-2017, 32 patients with inflammatory diseases of the joints and the same number of patients age and sex appropriate without joint pathology, which served as a control group. The criterion for the presence of inflammatory arthropathy was considered to be the swelling and / or soreness of at least one joint detected by the doctor, lasting at least a month. All patients underwent a comprehensive examination by the ART method in order to identify both the infectious burden of the body as a whole, and specific joints, as well as other organs and systems [2, 3].

Results and discussion

Among the 32 examined patients in each group there were 16 women and 16 men aged 4 to 77 years, the average age in the main group was 49.0 years (CI 95% 43.3–54.7 years), in the control group - 49.1 years (95% CI 43.5–54.7 years), that is, the groups were comparable in age and sex of the examined patients. Almost all patients with inflammatory arthropathies (except for one woman with arthritis of the joints of the hands) had a lesion of at least

one large joint: knee, hip, shoulder, elbow, or ankle joints. The duration of arthritis before the time of the visit was different in patients and ranged from 1 month to 6 years. Several patients had concomitant spinal lesions. The general spectrum of identified pathogens in both groups was represented by the following pathogens: Herpes simplex virus 1 (HSV-1), Herpes simplex virus 2 (HSV-2), Herpes zoster (Human herpes virus 3 - HHV-3), Epstein-Barr virus (EBV), Cytomegalovirus (CMV), Coxaki B virus (Cox BV), Alpha streptococcus (Streptococcus viridans), Beta streptococcus (Streptococcus haemolyticus), Streptococcus pneumoniae (Pneumococcus), Streptococcus pyogenes, epidermalcus Stogenes epidermlocus, Staphylococella , Mycoplasma pneumonia, Mycoplasma genitalis, Ureaplasma urealytica, Proteus vulgaris, Proteus mirabilis, Pseudomonas aeruginosa, Chlamydia trachomatis, Gardnerella vaginalis, Escherichia coli, Enterococcus faecalis, Enterococcus faemoni, parapsilosis and Lamblia intestinalis. When we analyzed the frequency of occurrence of these pathogens in both groups, it turned out that most of the identified microorganisms were tested in patients with the same frequency regardless of the presence or absence of arthritis, i.e. they were not associated with inflammatory arthropathy. Table 1, the identified pathogens are presented in the order of decreasing frequency of their testing in the general sample of patients. Proteus mirabilis, Pseudomonas aeruginosa, Chlamydia trachomatis, Gardnerella vaginalis, Escherichia coli, Enterococcus faecalis, enterococcus faecium, Enterococcus casseliflavus, Salmonella paratyphi, Brucella melitensis, Campylobacter pyloriida, paracella melitensis, Campylobacter pyloriida, albinosis albuminosis When we analyzed the frequency of occurrence of these pathogens in both groups, it turned out that most of the identified microorganisms were tested in patients with the same frequency regardless of the presence or absence of arthritis, i.e. they were not associated with inflammatory arthropathy. Table 1, the identified pathogens are presented in the order of decreasing frequency of their testing in the general sample of patients. Proteus mirabilis, Pseudomonas aeruginosa, Chlamydia trachomatis, Gardnerella vaginalis, Escherichia coli, Enterococcus faecalis, enterococcus faecium, Enterococcus casseliflavus, Salmonella paratyphi, Brucella melitensis, Campylobacter pyloriida, paracella melitensis, Campylobacter pyloriida, albinosis albuminosis When we analyzed the frequency of occurrence of these pathogens in both groups, it turned out that most of the identified microorganisms were tested in patients with the same frequency regardless of the presence or absence of arthritis, i.e. they were not associated with inflammatory arthropathy. Table 1, the identified pathogens are presented in the order of decreasing frequency of their testing in the general sample of patients. Enterococcus faecalis, Enterococcus faecium, Enterococcus casseliflavus, Salmonella paratyphi, Brucella melitensis, Campylobacter pylori (Helicobacter pylori), Candida albicans, Candida parapsilosis and Lamblia intestinalis. When we analyzed the frequency of occurrence of these pathogens in both groups, it turned out that most of the identified microorganisms were tested in patients with the same frequency regardless of the presence or absence of arthritis, i.e. they were not associated with inflammatory arthropathy. Table 1, the identified pathogens are presented in the order of decreasing frequency of their testing in the general sample of patients. Enterococcus faecalis, Enterococcus faecium, Enterococcus casseliflavus, Salmonella paratyphi, Brucella melitensis, Campylobacter pylori (Helicobacter pylori), Candida albicans, Candida parapsilosis and Lamblia intestinalis. When we analyzed the frequency of occurrence of these pathogens in both groups, it turned out that most of the identified microorganisms were tested in patients with the same frequency regardless of the presence or absence of arthritis, i.e. they were not associated with inflammatory arthropathy. Table 1, the identified pathogens are presented in the order of decreasing frequency of their testing in the general sample of patients. When we analyzed the frequency of occurrence of these patho

Table 1

Spectrum and frequency of identified pathogenic microorganisms in the main, control and general groups of patients

Pathogen	n, cases out of 64	Frequency in general group	Frequency in basic group	Frequency in group control	p
Streptococcus viridans	53	83%	81%	84%	NS
Streptococcus haemolyticus	50	78%	81%	75%	NS
Staphylococcus aureus	50	78%	75%	81%	NS
Escherichia coli	48	75%	75%	75%	NS
Pneumococcus	44	69%	72%	66%	NS
Chlamydia trachomatis	31	48%	78%	19 %	<0.001
HSV-1	thirty	47%	47%	47%	NS
EBV	23	36%	38%	34%	NS
Proteus vulgaris	twenty	31%	38%	25%	NS
Klebsiella pneumoniae	twenty	31%	28%	34%	NS

Mycoplasma	eighteen	28%	25%	31%	NS
Candida parapsilosis	17	27%	31%	22%	NS
Candida albicans	15	23%	25%	22%	NS
CMV	13	twenty %	28%	13 %	0.106
Ureaplasma urealytica	ten	16 %	19 %	13 %	NS
Proteus mirabilis	ten	16 %	16 %	16 %	NS
Pseudomonas aeruginosa	ten	16 %	22%	nine %	0.151
Staphylococcus coagulans	nine	fourteen %	19 %	nine %	NS
HHV-3	nine	fourteen %	16 %	13 %	NS
Enterococcus faecalis	nine	fourteen %	25%	3%	0.027
Enterococcus faecium	5	eight %	nine %	6%	NS
Helicobacter pylori	4	6%	0%	13 %	0.056
HSV-2	3	5 %	0%	nine %	0.119
Brucella melitensis	3	5 %	nine %	0%	0.119
Staphylococcus epidermidis	2	3%	6%	0%	NS
Lamblia intestinalis	2	3%	0%	6%	NS
Streptococcus pyogenes	1	2%	0%	3%	NS
Gardnerella vaginalis	1	2%	3%	0%	NS
Cox BV	1	2%	0%	3%	NS
Enterococcus casseliflavus	1	2%	3%	0%	NS
Salmonella paratyphi	1	2%	3%	0%	NS

NS - statistically insignificant differences (-2, Fisher's exact test)

From the presented table it follows that some microorganisms were found in the general sample of patients only in isolated cases. Nevertheless, it should be noted that Helicobacter pylori, lamblia, pyogenic streptococcus and group B Coxsackie virus were detected only in the control group, and brucella - only in the group of patients with arthritis, and in two out of three cases Brucella melitensis was tested as in the whole organism and in the affected joint. Chlamydiae in the group of patients with arthritis were detected in 25 out of 32 cases, including in 20 patients they were tested in the affected joint. In a group

In patients with arthritis, Chlamydia trachomatis (p <0.001) and Enterococcus faecalis (p = 0.027) were found statistically significantly more often, and Helicobacter pylori was less frequently (at the border of statistical significance, p = 0.056). Interestingly, the presence of Helicobacter pylori had a protective role against inflammatory lesions of the joints, which is consistent with the data that the carriage of this bacterium is associated with a lower incidence of such immune pathologies as bronchial asthma, allergic rhinitis, and atopic dermatitis [3]. Some differences were also noted in the frequency of detection of Brucella melitensis, HSV-2, CMV and Pseudomonas aeruginosa, but given the rarity of their detection in the examined individuals and the small number of patients in groups, these differences did not reach the level of statistical significance.

conclusions

Thus, in the patients with inflammatory arthropathy studied by us, an important relationship of this pathology with the presence of infection with pathogens such as Chlamydia trachomatis and Enterococcus faecalis was established, as well as the possible protective role of the presence of Helicobacter pylori, which emphasizes the importance of mandatory testing of chlamydia and the state of intestinal microflora in patients with inflammatory diseases of the joints.

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