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THE MOST FREQUENT SYMPTOMS OF JOINTS DAMAGE AMONG THE RESIDENTS OF YAKUTIA

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ABSTRACT

The frequency of clinical manifestations in patients with joint damage among the indigenous people of Yakutia (n = 687) was studied. It is revealed that the damage of the joints can begin both in the early childhood (2 years) and in old age (77 years); on average, joint lesion starts at 41-43 years.

The most common symptoms of joint damage are pain in the joint and crepitus in the knee joints. Among women, there are more often observed: swelling of the wrist and knee joints, restriction of mobility of the wrist joints and bilateral crepitus at the knee joints; among men, one-sided crepitus at the knee joints. With age increasing, the duration of pain and the frequency of changes in the configuration of the joints at the time of inspection increase.

Keywords: joint damage, clinical symptoms, radiological signs.

Introduction. Data on the prevalence of diseases of the joints abroad in many cases are based on the results of screening tests. The pathology of the joints in this method revealed in 10.3-35.8% of [5, 6]. Russian researchers have shown that there are geographic variations in the prevalence of pain in the joints. Thus, during a screening questionnaire in Krasnoyarsk region did not exceed 15% [1]. Yuzhno-Sakhalinsk complaints of pain imposed on 21% of the population in the joints [3], and they met in 36.5% of cases [2] among the rural population of the Sverdlovsk region. The high prevalence of arthralgia was established in the Republic of Sakha (Yakutia) - up 46.7%, that perhaps due to the influence of climatic factors [4]. It was extremely high frequency of pain in the joints among industrial workers Republic of Karelia, where the figure approached 65%. Moreover arthralgias appearance was not dependent on the severity of physical activity, and apparently was due to other factors.

Purpose of the study - to study the frequency of symptoms of joint damage among rural residents of Yakutia.

Material and methods of research. 687 patients were examined, revealed during a continuous epidemiological study rural residents of the seven villages in Yakutia. Of these, 68.1% were females, 31.9% - male. The median age of men and women was about the same - 50 and 49 years respectively. The minimum age for both sexes was 18 years old; the maximum age of the men was 88 years, women - 80. The age structure of the largest part consisted of persons in age group 40-49 years - 32.9% (including women - 23.4, men - 9.5); 27.2% were persons aged 50-59 years (including women - 19.5, men - 7.7). Persons of other age groups accounted for no more than 15%. Sex ratio was not significantly different in age groups ($p > 0.05$).

Results and discussion. The most common joint disease among both women and men began at the age of 40-49 years - 40.2 and 27.8%, respectively. Among the 23.7% of men and 23.5% women the damage of the joints began at the age of 30-39 years. In other age groups the beginning defeat joint damage met not more than 20% of cases.

The most significant differences in the frequency the beginning defeat joint damage among both sexes were observed in the age group 40-49 years ($\chi 2 = 17,46$; $p = 0,03$; $V = 0,16$).

We have also studied the frequency of clinical signs of joint damage. The study revealed that the most frequent clinical manifestations of joint disease are pain in the joints (100% of patients), and crepitus in knee joints (54%). With a frequency of 10 to 30% met: change in joint configurations (28.2%), one joint arthritis (25.1%) and swelling of knee (12.5%). In 3-10% of patients were observed: knee limited mobility (10%), swelling of the proximal interphalangeal joints (PIPhJ) brushes (6.4%), swelling of the wrist (4.6%), limiting the mobility of the hip joint (HJ) (3.9%), the wrist mobility restriction (3.6%), swelling of the hand metacarpophalangeal joints (MCPhJ) (3.5%), arthritis of three

or more joints (3.3%) and symmetrical arthritis (3.2%). Positive rheumatoid factor (1.5%) and rheumatoid nodules (0.6%) occur most often.

Because radiological signs osteophytes most frequently (24.5%) and a narrowing of the articular slits (19.8%) (Fig.1).

At the analysis of the frequency of symptoms of gender, statistically significant differences were found in the frequency of the following four symptoms:

1) swelling of the wrist;
2) swelling of knee joints;
3) limitation of motion of the wrist;
4) crepitus in knee joint during active movements.

Swelling radiocarpal joints is more common among women than among men ($\chi 2 = 7,09$; $p = 0.03$). Swelling of wrist was often among women bilateral than unilateral (3.8% versus 2.1). Among men frequency wrist swelling on the one or on both sides it was similar (0.9%).

Swelling of the knee is also often observed among women than among men ($\chi 2 = 7.45$; $p = 0.02$). A bit more often knee swelling P among women was on one side than on the two (8.1% vs 6.4). Among men, by contrast, the frequency of swelling on both sides of the knee was more than one (5% vs. 3.2).

Bilateral limited wrist mobility was more common among women than among men (3.6% versus 0.5); unilateral - among women occurred in 1.5% of cases in men - were noted ($\chi 2 = 13.3$; $p = 0.001$).

Crepitus in the knee, both among women and among men was more often on both sides than the one (47.2% vs. 9.8% and 35.1 vs. 12.3, respectively). Bilateral crepitus in knee joints with active movements was more common among women (47.2% against 35.1 for men), whereas the one - most men (12.3% vs. 9.8 for women) ($\chi 2 = 8,95$; $p = 0.01$) (fig.8).

When analyzing the frequency of symptoms depending on the age group, statistically significant differences were found in the frequency of two symptoms: duration of pain and change in configuration of the joints at the time of inspection (fig.9).

The duration of pain was significantly dependent on the age of the studied ($\chi 2 = 17.46$; $p = 0.03$). At the age of 18-39 years in most cases, the pain lasted for up to 1 weekin the 40-49 years - more than half a month and up to 1 week with the same frequency, after 50 years - more than half of the month. The frequency of pain lasting less than a week with the increase of age was significantly decreased by 71.4% between the ages of 18-19 years to 0 at the age of 80-89 years ($\rho = -0,98$; $p < 0.001$). Frequency of pain lasting longer than half a month, in contrast, increased with an increase in age from 28.6% at age 18-19 years and 100 aged 80-89 years ($\rho = 0.95$; $p < 0.01$). Frequency of pain duration of 2 weeks of age was not significantly dependent ($\rho = 0.05$; $p > 0.05$) (Fig.2).

Changing of the joints configuration at the time of examination of statistically highly significant depended on the age group ($\chi 2 = 68.58$; $p < 0.00001$).

With increasing age, the frequency of changes in the joints configuration at the time of inspection was increased from 0% at the age of 18-19 years to 50% at age 80-89 years ($\rho = 0.93$; $p < 0.01$).

The highest frequency of configuration changes observed in the age of 60-69 years (51.5%).

Conclusions. Joint disease begins to manifest itself clinically in an average of 41-43 years, but can begin in early childhood (2 years) and old age (77 years). The most common clinical manifestations are joint pain and crepitus in knee joints. Women are more frequently observed: swelling of the wrist and knee joints, limited mobility of the wrist and bilateral crepitus in knee joints; among men - sided crepitus in knee joints.

With age increasing, duration of pain and frequency of changes in the joints configuration increased at the time of inspection.

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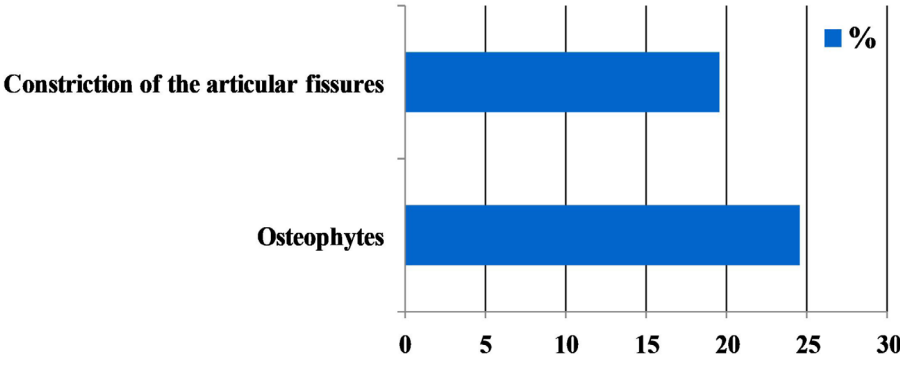

Fig.2. The frequency of radiological signs of joint damage

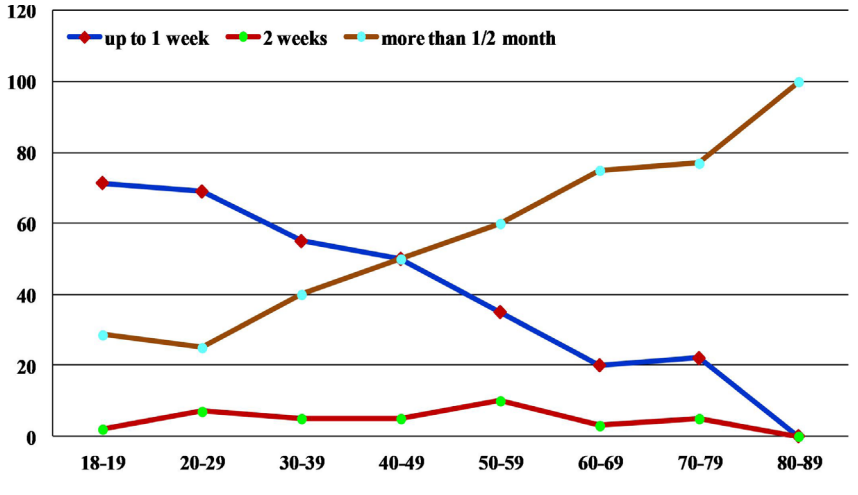

Fig.1. Duration of pain depending on age

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METHODS OF DIAGNOSIS AND TREATMENT

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COMPARATIVE ANALYSIS OF SPORADIC CASES AND FAMILY FORM OF PROGRESSIVE MUSCULAR ATROPHY OVER A 30-YEAR PERIOD (1986-2016) IN THE REPUBLIC SAKHA (YAKUTIA)

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ABSTRACT

Progressive muscle atrophy (PMA) is a rare disease of the motor neuron disease group (MND), which is characterized by selective lesions of the anterior horns of the spinal cord.

Objective: to study the features of the course of sporadic and family form of PMA over the period from 1986 to 2016.

Materials and methods: in 2006, a personalized register was introduced, which included patients with MND (amyotrophic lateral sclerosis, progressive muscular atrophy, progressive bulbar paralysis, primary lateral sclerosis). Since 1986 till 2006 patients were introduced after a retrospective study. The study included 15 patients with sporadic form and 5 patients from the same family. For the described study, patients with PMA were divided into 2 groups: 1 group included sporadic cases of progressive muscle atrophy (n=16), 2 group consisted of sick family members of a family case of 2 women and 2 men (n=4). Clinical examination of patients included assessment of somatic and neurological status in the onset of the disease and its further development, age of onset and duration of course.

Research methods: needle electromyography (EMG), Amyotrophic lateral Sclerosis Functional Rating Scale (ALSFRS) [9], spirography (LNG), forced vital capacity (FVC), magnetic resonance imaging (MRI), computed tomography (CT) of brain and spinal cord. In 9 cases, direct DNA diagnosis was carried out to exclude Kennedy's Bulbo-spinal amyotrophy.

Results: Our study revealed a moderate rate of progression in sporadic cases and a slow rate of progression in the family form of PMA. In our study, the duration of PMA was significantly higher in the family form and was 140±37.8 and 53.6±30.3 months in sporadic cases (p =0.003). In the family form of the disease, an earlier age of debut was observed than in sporadic PMA and in men the disease began earlier than in women.

Keywords: motor neuron disease, amyotrophic lateral sclerosis, progressive bulbar paralysis, progressive muscular atrophy, primary lateral sclerosis.

Introduction. Progressive muscle atrophy (PMA) is a rare disease from the group of motor neuron diseases (MND), which is characterized by selective damage to the cells of the anterior horns of the spinal cord and manifests itself by progressive muscle weakness, hypotrophy and fasciculations. On the recommendation of the World Federation of Neurologists, since 1994 severe neurodegenerative diseases with unknown etiology and unspecified pathogenesis, characterized by selective damage of central and/or peripheral motor neurons, were referred to motor neuron diseases. For diseases in MND group a typical progressive course with the same fatal outcome. This group includes amyotrophic lateral sclerosis (ALS), progressive muscular atrophy (PMA), primary lateral sclerosis (PLS) and progressive bulbar palsy (PBP) [12].

The most common in the world disease in this group is ALS, which accounts for 80% in this group. The share