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EXPERIENCE EXCHANGE

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HOSPITAL MORBIDITY RATES AS A FACTOR IN THE SELECTION OF PATHOLOGY TO DEVELOP PERSONALIZED PREVENTION AND TREATMENT METHODS

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ABSTRACT

Indicators of the hospitalized incidence of adult population according to YSC CMP Hospital during 2015-2017 are presented in article. The characteristic of dynamics and structure of the cases demanding performing treatment in stationary conditions is given. Growth of cases of hospitalization of patients with metabolic disorders, including diabetes 2 types and diseases of cardiovascular system is established. The obtained data served as the basis for conducting research and developing molecular genetic methods of diagnosis in relation to this pathology.

Keywords: hospital morbidity, structure and dynamics of incidence, methods of personalized medicine, molecular diagnostics.

Introduction. Diseases with the inheritance of predispositions today are widespread and are determined by a factor called the genetic load. It is the high prevalence of polymorphic variants of genes predisposing to the development of multifactorial diseases that determines the spectrum of somatic pathology with a characteristic for a specific population structure. In addition, the polymorphism of variants of predisposing genes affects not only the structure, but also the characteristics of the formation and course of diseases, the development of complications, as well as the susceptibility, resistance and tolerance of drug therapy [4].

Today, molecular technologies allow the formation of risk groups taking into account the genetic characteristics of patients and carrying out preventive measures in them at the stage of preclinical manifestations of the disease in order to prevent the development of the disease itself and its complications. Personalized medicine methods are highly effective and contribute to improving the quality and increasing the life expectancy of the population. In turn, the use of such expensive and highly specific technologies requires an informed approach to the choice of both the spectrum of diseases and genetic markers that predispose to the development of pathology.

To determine the significance of a particular pathology helps a comprehensive assessment of public health, which is carried out using indicators of general and primary morbidity recorded by attendance, as well as using data on morbidity with temporary and permanent disability, morbidity from the results of medical examinations and hospitalization activity of the population [3].

As a factor in the selection of pathology by degree of importance, such an indicator of medical statistics as hospitalized morbidity is often used, which gives an idea of the most severe pathology requiring attention and treatment in inpatient conditions, as a rule, in specialized departments. This indicator is very informative, since it characterizes neglect and severity of pathology, which in turn contributes to the formation of a chronic process and disability, which ultimately leads to a decrease in the patient's quality of life [1].

The unit of accounting for hospitalized morbidity is the case of hospitalization of the patient in the hospital, and the accounting document is the "Statistical map of the out-of-hospital" (f. 066 / u). The "statistical card of the discharged from the hospital" is compiled on the basis of the "Medical card of the inpatient patient" (f. 003 / u) and is a statistical document containing information about the disused, discharged from the hospital (discharged, dead). The card is compiled simultaneously with the recording of the epicrisis in the "Medical card of the inpatient" by the attending physician on all those who left the hospital (written out or died). The card reflects the basic information: about the duration of treatment of the patient in the hospital, the diagnosis of the main and concomitant diseases, the duration, nature and effectiveness of surgical care, the outcome of the disease, etc. from which the patient has left. In cases where two or more diagnoses of diseases are indicated in the map, the patient refers to each of these diseases in the report, which was the main cause of hospitalization. This document provides the most rational development of information for the preparation of the relevant sections of the report [3,5].Thus, the **purpose** of this study is to study the dynamics and structure of the hospitalized morbidity of the adult population of the RS (Ya) according to the data of the YSC CMP Hospital as a factor in selecting the most significant pathology for determining the priority directions of molecular genetics research in the development of diagnostic test systems for multifactorial diseases.

Materials and methods. The base of the study was the Yakut Science Centre CMP (Yakutsk), the object being the adult population from 18 to 80 years old, hospitalized in the hospital in 2015–2017. The material for analyzing the dynamics and structure of the hospitalized morbidity was the data from the statistical reports of the inpatient units of the Hospital of the Yakutsk Scientific Medical Center. The statistical data processing was carried out using descriptive statistics methods.

Results and discussion. In its structure, the Hospital of the YSC CMP has 110 beds of which 44 are therapeutic, 41 are cardiological and 25 are gynecological. To identify current trends in the dynamics of hospital morbidity, a preliminary analysis of the organization of inpatient care was carried out. Accord-

ing to the official statistics of the Hospital YSC CMP in 2015, the hospital incidence rate was 2.256; in 2016 - 3.025; in 2017 - 2,984. Thus, over the 3-year period, the hospitalization rate increased 1.3 times (Table 1).

According to the results of the analysis, it was established that over the past three years there has been an increase in cases requiring patients to be hospitalized with endocrine pathology, eating disorders and metabolic disorders by 4.2 times, including type 2 diabetes, there is a tendency to a steady increase in the hospitalization of diseases of the circulatory system, for three years, this figure increased by 304 cases. At the same time, for some diseases, there is a tendency to reduce the level of hospitalization, so the number of cases requiring hospitalization of neoplasms decreased by 3.6 times, which may be due to timely diagnosis, treatment in the early stages of cancer (Table 2).

The table shows that in the general structure of the diseases, among all those admitted for the 3-year period, patients with circulatory system diseases prevailed (46.0%; 45.2%; 45.2%); second place (15.7%; 16.4%; 17.2%) and in third place were cases related to the pathology of the urogenital system (11.9%; 10.0%; 9.6%).

Conclusion. The paper describes the characteristics of the dynamics and structure of the hospitalized morbidity of the adult population of the RS (Ya) on the basis of a retrospective analysis of data from statistical reports of inpatient wards of the YSC CMP Hospital.

It is established that for the period from 2015 to 2017 there is a tendency of a steady increase in the incidence of cases requiring hospitalization for patients with endocrine pathology, eating disorders, metabolic disorders, as well as patients with circulatory disorders. The data obtained indicate the activation of metabolic disorders among the adult population of RS (Ya) receiving medical care at the YSC CMP Hospital and require a more detailed analysis of the pathogenetics mechanisms of the formation of this group of diseases using molecular diagnostic methods, the development and implementation of which will facilitate the implementation of personalized preventive and therapeutic measures that will reduce the risk of development and complications of these diseases. Taking into account the results obtained by the staff of the Laboratory of Hereditary and Population Genetics of the YSC CMP, together with the doctors of the therapeutic department of the YSC CMP Hospital, research is currently being conducted to study the molecular genetics aspects of the formation of metabolic disorders such as type 2 diabetes, obesity, and non-alcoholic fatty disease liver, hypertensive disease.

Table 1

The relative number of diseases that caused the hospitalization of the population in the inpatient hospital of the YSC CMP Hospital for 2015-2017 by disease class

Class of international classification of diseases X revision	2015	2016	2017
	Per 1000 population		
I. Some infectious and parasitic diseases	0.005	0.037	0.024
II. Neoplasms	0.047	0.027	0.011
III. Diseases of the blood. blood-forming organs and certain disorders involving the immune mechanism	0.024	0.053	0.048
IV. Endocrine. nutritional and metabolic diseases	0.046	0.181	0.258
V. Mental and behavioral disorders	0.003	0	0
VI. Diseases of the nervous system	0.079	0.109	0.103
IX. Diseases of the circulatory system	1.061	1.387	1.365
X. Respiratory diseases	0.117	0.123	0.109
XI. Diseases of the digestive organs	0.132	0.128	0.111
XII. Diseases of the skin and subcutaneous tissue	0.013	0.015	0.009
XIII. Diseases of the musculoskeletal system and connective tissue	0.114	0.160	0.140
XIV. Diseases of the genitourinary system	0.274	0.305	0.288
XV. Pregnancy. childbirth and the postpartum period	0.361	0.500	0.518

Table 2

The overall structure of the disease hospitalized cases in the YSC CMP Hospital for 2015-2017

Class of international classification of diseases X revision	2015	2016	2017
	%		
I. Some infectious and parasitic diseases	0.3	1.3	0.9
II. Neoplasms	2.2	1.0	0.6
III. Diseases of the blood. blood-forming organs and certain disorders involving the immune mechanism	1.2	1.9	1.8
IV. Endocrine. nutritional and metabolic diseases	2.1	6.1	8.9
V. Mental and behavioral disorders	0.4	0	0
VI. Diseases of the nervous system	3.5	3.7	3.1
IX. Diseases of the circulatory system	46.0	45.2	45.2
X. Respiratory diseases	5.3	4.2	3.7
XI. Diseases of the digestive organs	5.8	4.3	3.9
XII. Diseases of the skin and subcutaneous tissue	0.6	0.6	0.4
XIII. Diseases of the musculoskeletal system and connective tissue	5.0	5.3	4.7
XIV. Diseases of the genitourinary system	11.9	10.0	9.6
XV. Pregnancy. childbirth and the postpartum period	15.7	16.4	17.2

The research protocol was approved by the local committee on biomedical ethics at the YSC CMP. The work is carried out in the framework of the research "Study of the genetic structure and burden of hereditary pathology of populations of the Republic of Sakha (Yakutia)".

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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