

of metabolic flows towards catabolism, activation of glycolysis, dyslipidemia indicate a decrease in the body's adaptive reserves. Further intensification of enrichment of uranium ores will increase the impact of ionizing radiation on the population, which will require the continuation of biomedical and environmental research to prevent environmentally caused diseases.

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HIV-INFECTION AS A CAUSE OF DISABILITY OF THE POPULATION

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The article presents an analysis of the data of the state statistical reporting on the disability of the population of the Irkutsk region due to HIV infection and dispensary observation of patients. Changes in the stages of HIV infection, including the stage of secondary manifestations, are shown. The median of the average age of patients by disability groups among men and women was calculated, the structure of the causes of disability was presented. A forecast is given regarding the change in disability groups for 2022. Measures to increase the adherence of citizens with HIV infection to antiretroviral therapy, the prevention of secondary and opportunistic diseases will prevent early disability of the population.

Keywords: HIV infection, stages of HIV infection, disability, causes of disability.

Introduction. The HIV pandemic continues, influencing the main indicators characterizing the state of public health. The Health Development Strategy until 2025 defines HIV infection as a "threat to national security in the field of public health". As of December 31, 2021, 0.8% of the population in the Russian Federation was living with HIV, including 1.5% of those aged 15–49 years. In 2021, the Irkutsk region was the leader in terms of incidence (99.6 versus 47.8 per 100 thousand in the Russian Federation); in terms

of damage, it ranked second after the Kemerovo region with an indicator of 2042.5 per 100 thousand (<http://www.hivrussia.info>). Currently, HIV infection is classified as a chronic, treatable infection [7]. Thanks to antiretroviral therapy (ART), the life expectancy of patients with HIV infection increases. As a result, the social significance of HIV infection increases, including the disability of the population [6, 8]. General indicators of disability due to HIV infection in the Irkutsk region were studied until 2019 [4, 5]. However, given

the social and economic significance of HIV infection in modern conditions, there is a need for further study of the problem.

The purpose of the study: to study various aspects of the primary disability of the adult population due to HIV infection in 2010-2021.

Materials and research methods.

The work used forms No. 7-Sobes, No. 61 for 2010-2021. The analysis of disability groups depending on the stage of HIV infection, the list of secondary diseases, gender distribution was carried out on the basis of an electronic database of examined citizens for 2021 (n=247). Descriptive epidemiology and statistical methods were used. Spearman's correlation coefficient, χ^2 were calculated using the Epi-Info program.

Results and discussion. In 2021, 30,095 HIV-infected patients were registered in the Irkutsk region, of which 29,781 people (98.9%) were under dispensary observation. For the period 2010-2021 there were changes in the number of patients according to the stages of the disease. Thus, the number of persons with stages 2 and 3 of the disease decreased ($\chi^2=42.6$ and 7175.2, respectively, $p<0.001$); with stage 4, on

the contrary, increased significantly and amounted to 669.9 per 1000 under observation ($\chi^2=7274.3$; $p<0.001$) (Table 1).

The number of patients with progressive secondary diseases is increasing. The spectrum and frequency of this pathology is presented in [2]. The fourth clinical stage of HIV infection - the stage of secondary manifestations - is classified depending on the clinical symptoms and nosologies into stages 4A, 4B, 4C [1]. The results of the analysis demonstrate an increase in the share of stage 4A to 55.6% and a decrease in the share of stage 4B to 27.2% by 2021. The share of stage 4C at the beginning of the study period was dynamically decreasing, since 2017 it was at the level of 17.0% (Fig. 1). Thus, the proportion of people with progressive HIV infection is increasing.

The spread of HIV infection inevitably affects the disability of the population - the Spearman correlation coefficient was 0.83 ($p<0.05$).

The dynamics and structure of disability in the population of the Irkutsk region due to HIV infection have been studied previously [4,5]. In 2021, according to the Federal State Institution ITU State Se-

curity for the Irkutsk Region, 247 people were recognized as disabled due to HIV infection for the first time, including 166 men (67.2%), 81 women (32.8%). Residents of urban settlements prevailed, the share was 86.2%. The median mean age of men and women was 40 years.

In the structure of primary disability due to HIV infection, the proportion of disabled people of group II significantly prevailed - 58.3% versus 14.6% (group I) and 27.1% (group III), both among men and women. In general, the proportion of disabled people of groups I and II remains at a high level [4], which confirms the severe course of the disease. An analysis of the stages of HIV infection by groups showed that in disabled people of group I, stage 4B prevailed, the share of which was 86.1%, stage 4B in disabled people of groups II and III - 51.7 and 56.1%, respectively. It draws attention to the fact that in women of II disability group 4B stage prevails (56.3%) (Fig. 2).

Thus, there are significant changes in the structure of disability by groups: the proportion of disability group I increased by 1.5 times over the observation period (9.8% in 2010 versus 14.6% in 2021). If this trend continues, the proportion of dis-

Table 1

Stages of HIV infection in persons under dispensary observation for 2010-2021 in comparison according to f. №61 (per 1000 patients)

Stages of HIV infection	2010		2021		χ^2 ; p
	was under supervision	per 1000 registered patients	was under supervision	per 1000 registered patients	
Stage 2 (primary manifestations A, B, C)	64	3.8	29	0.9	42.6; $p<0.001$
Stage 3 (subclinical)	12212	739.5	9801	329.1	7175.2; $p<0.001$
Stage 4 (secondary manifestations A, B, C)	4237	256.6	19951	669.9	7274.3; $p<0.001$
Total	16513	-	29781	-	

Table 2

Structure of primary disability depending on sex and age in the Irkutsk region in 2021 (absolute number / %)

age groups	men						women						total					
	groups (abs.number)			groups (%)			groups (abs.number)			groups (%)			groups (abs.number)			groups (%)		
	I	II	III	I	II	III	I	II	III	I	II	III	I	II	III	I	II	III
up to 29	1	5	1	4.3	5.3	2.1	1	3		7.7	6.3		2	8	1	5.6	5.6	1.5
30-34	1	14	5	4.3	14.6	10.6	4	8	5	30.8	16.7	25.0	5	22	10	13.9	15.3	14.9
35-39	9	23	18	39.1	24.0	38.3	4	8	5	30.8	16.7	25.0	13	31	23	36.1	21.5	34.3
40-44	4	33	16	17.4	34.4	34.0	4	16	6	30.8	33.2	30.0	8	49	22	22.2	34.0	32.8
45-49	4	18	4	17.4	18.8	8.5		8	3		16.7	15.0	4	26	7	11.1	18.1	10.4
50-54	1	3	1	4.3	3.1	2.1		2	1		4.2	5.0	1	5	2	2.8	3.5	3.0
55-59	2		2	8.7		4.3		2			4.2		2	2	2	5.6	1.4	3.0
60+	1			4.3				1			2.1		1	1	0	2.8	0.7	
total	23	96	47	13.9	57.6	28.5	13	48	20	16.0	59.3	24.7	36	144	67	14.6	58.3	27.1

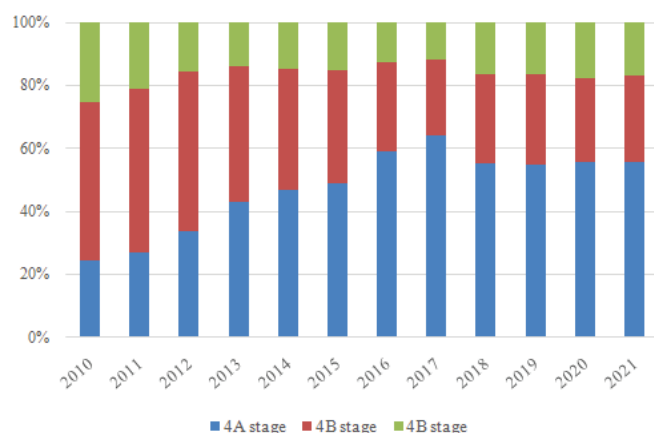


Fig. 1. Structure of the 4th stage of HIV infection depending on secondary manifestations in 2010-2021 (%)

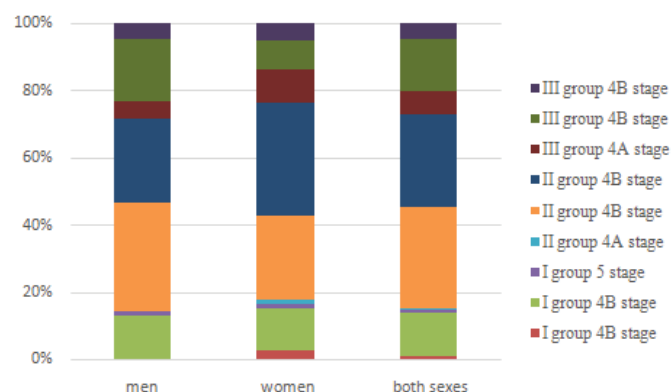


Fig. 2. Share of HIV infection stages by disability groups (%)

ability group I is expected to increase in 2022 to $15.5 \pm 2.2\%$.

Persons of working age predominate in the age structure among men and women (Table 2). The median average age for disability groups (I, II, III) for men was: 40; 41 and 39 years old; in women - 37; 40.5 and 39.5 years respectively.

The progression of HIV infection, the development of secondary and concomitant diseases is determined by a number of factors, including the presence or absence of ART. UNAIDS, one of the main directions in the fight against HIV infection, has set goals according to which by 2030 95% of people living with HIV/AIDS (PLWHA) should have information about their HIV status, 95% of them should have access to ART and 95% should achieve viral load suppression. Today it is considered a proven fact that ART improves the quality of life and increases the life expectancy of patients, which, according to various authors, can be the same as in the general population (without HIV infection) [6]. An important aspect of achieving these goals is adherence to ART [3].

According to the study, during the observation period in the Irkutsk region, the number of people receiving ARVT increased by 4.6 times, in 2021 the therapy coverage rate was 82.2%. However, among persons recognized as disabled, the proportion of patients in the remission phase slightly exceeded the proportion of persons in the progression phase: 56.5% versus 43.5%, and 72.1% of patients were in the progression phase while taking antiretroviral drugs.

In the structure of conditions associated with HIV infection, in accordance with ICD-10, in persons recognized as disabled for the first time, the proportion of infectious and parasitic diseases

prevailed (B20, including B20.0-B20.9) - 83.4%. Among which, the share of mycobacterial infection (B20.0) accounted for 52.0%; HIV with manifestations of multiple infections (B20.7) - 32.8%. The proportion of people with disabilities due to HIV with manifestations of encephalopathy (B22) was 8.1%; HIV, manifested as malignant neoplasms (B21) - 4.0%.

Conclusion. In the context of the continuing growth of the primary incidence and prevalence of HIV infection, there is an increase in the number of patients in the stage of secondary diseases with irreversible health problems. Among the secondary diseases that have served as the causes of disability, infectious and parasitic diseases, mainly tuberculosis, are in the lead. These changes occur against the backdrop of an increase in ART coverage.

Thus, in order to increase the effectiveness of existing national and regional programs for the prevention of HIV infection, it is necessary to strengthen the work on: 1) the formation of patients' adherence to dispensary observation and ART, the achievement of the designated indicators for this criterion; 2) timely prevention and treatment of secondary, opportunistic and concomitant diseases, which will prevent early disability, including patients of working age.

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