

## 20-YEAR CHANGES IN THE FORMATION, DISTRIBUTION AND FREQUENCY OF DETECTION OF COMMON RISK FACTORS OF STEATOHEPATITIS IN THE POPULATION OF MEN AND WOMEN OF THE VALLEY OF DIFFERENT AGES

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### Abstract

In modern sources, non-alcoholic steatohepatitis is presented as fatty hepatosis, correctly reflecting its pathogenetic essence, and it is emphasised as an increasingly widespread disease. The disease is mainly caused by poor diet and lack of physical activity. Also, diabetes, hormonal disorders and genetic diseases, as well as all risk factors of cardiovascular diseases (arterial hypertension, alcohol consumption, smoking, mental stress, less than normal consumption of fruit and vegetable products, age and gender factors, metabolic syndrome, excess body weight, obesity, etc.) are considered to be the initial and/or aggravating causes of the problem of this period - if predictive, preventive or preventive measures are not carried out in time, scientifically based and individualized, this situation will lead to liver inflammation (steatohepatitis) and dysfunction the risk of import remains.

**Keywords:** non-alcoholic steatohepatitis, predictive, preventive, prophylactic, chronic liver diseases, alcohol consumption, cardiovascular diseases.

### Introduction

Current issues of the dissertation. The relevance and necessity of the topic are also interpreted in scientific sources as follows: as a disease of civilization or a syndrome of the times, it is observed in 25 per cent of the world's population (as part of fatty liver disease) and in every second (50 per cent) of the population with fatty liver disease with an epidemic distribution, only the trend of the disease continues to grow continuously, the disease is associated with the main cardiovascular diseases up to 80%, and CKD increases the mortality by 2 times, the high prevalence is determined in the population of working age,

and 77% of cases, the disease is characterised by a clinically uncertain course, in most cases, the disease is CKD "give birth" to the main risk factors or, conversely, continue to be born against their background, and 20 per cent are detected only in the form of clear remission (showing external symptoms of liver disease).

The disease is a risk factor for "hitting the liver" (increasing the storage of lipids in the liver and causing cellular infiltration, and fibrosis) and complex changes in the cardiovascular system through endothelial dysfunction, aortic valve calcification/stenosis, hardening of the vessel walls, left ventricular diastolic dysfunction, increased arrhythmias. intensifies by bringing in the style. This disease increases the mortality of the population due to hepatic causes (causing fibrosis, cirrhosis, hepatocellular cancer) and extrahepatic complications (metabolic syndrome, type 2 diabetes, cardiovascular diseases, etc.). It can be concluded that early detection of the premorbid stage of non-alcoholic steatohepatitis and the study of the morbid stage (comorbid diseases, epidemiological description) at the population level are of medical, economic and social importance.

The level of study of the problem. In modern sources, NStG is presented correctly reflecting its pathogenetic essence as fatty hepatitis, and it is emphasised as an increasingly widespread disease. The disease is mainly caused by poor diet and lack of physical activity. Also, diabetes, hormonal disorders and genetic diseases, as well as all risk factors of STD diseases (DLP, AG, alcohol consumption, smoking, mental stress, less than normal consumption of fruit and vegetable products, age and gender factor, metabolic syndrome, excess body weight, obesity, etc.) are the starting and/or aggravating causes of the problem of this period - if predictive, preventive or preventive measures are not carried out in time if they are not carried out in a scientifically based and individualized manner, this situation will lead to inflammation of the liver (steatohepatitis) and dysfunction risk remains. This conclusion has been confirmed in studies conducted in South America, the Middle East, Africa, and Asia (88). Unfortunately, researchers have demonstrated that modern science does not have adequate testing tools/methods for the scientific study of fatty liver disease. Because this disease develops and passes completely differently in experimental animals, or based on them, it is not possible to directly present conclusions and clinical recommendations to practice.

Emusmiological studies on JNYoK/StG have been conducted in Russia, England, Greece, Brazil, Chile, Iran, Turkey, Sudan, Nigeria, Australia, China, South Korea, Japan, India, and Sri Lanka (4).

As a result, it is clear from them that screening, epidemiology and prevention are the only effective methods for early detection of steatohepatitis or steatohepatitis. It is the predictive, preventive and screening-based preventive scientific direction that has become an actual and necessary topic in solving the actual problems of fatty hepatitis/steatohepatitis. According to these studies, NStG is not detected at the same prevalence frequency: the degree of variation is 27.3%.

In addition, it is important to set treatment goals or organize pharmacoepidemiological control based on the epidemiological nature of the disease. The direction of treatment of fatty hepatitis/steatohepatitis should be coordinated based on the epidemiologic-pathogenetic conclusion and should reflect the principles (prevention of exacerbation of liver disease; targeting regression of steatosis, steatohepatitis and fibrosis, as well as cardiometabolic risk factors).

At the same time, it is known from existing studies that the epidemiology of non-alcoholic steatohepatitis, especially in prospective epidmonitoring, has not been sufficiently studied in near and far foreign countries, and in the population of Uzbekistan and its territories - it has not been specially studied. The mentioned scientific and practical issues have not found their solution or remain so. This dissertation work was carried out to study and research these tasks. It aims to enrich the known clinical data and clarify and prove new, modern epidemiological data regarding steatohepatitis in the Uzbek population and the Fergana Valley region of Uzbekistan.

The purpose of the study is to determine the specific aspects of the prevalence, risk factors and course of non-alcoholic steatohepatitis in the conditions of the Fergana Valley, prediction and prevention.

As indicated above, in this study, using a prospective epidemiological approach, the purpose of the investigation, not only biochemical but also the leading general risk factors of steatohepatitis in a population of different ages were studied and evaluated.

Received results 1 – in the table digital statement done

Analytical materials showed that in 2000-2020, common risk factors of NStG are observed in the following distribution frequencies with change: smoking - 75.0% and 33.3% (with a decrease of 41.7%), hypodynamia - 45.0% and 61.1 % (with an increase of 16.1%), alcohol consumption - from 0.00% and 0.00%, nutritional factors - from 100.0% and 72.2% (with a decrease of 27.8%), plus body weight - from 35.0% and 55.6% (with an increase of 20.6%), arterial hypertension - from 35.0% and 55.6%, and the average value index - 60.0% and 55.6% from (with a decrease of 4.4%), the 20-year epidemiological conditions are described. [X<sup>2</sup> =0.047; S=0.243; RR=0.667; 95% CI=0.231-1.210 P>0.05].

Table 1 Prevalence of common epidemiological risk factors of steatohepatitis in Fergana Valley and their 20-year changes

Epidemiological risk factors, years	Male population			R	Female population			General population		
	N	NSGst			N	NSGst		N	NSGst	
		n	%			n	%		n	%
Year 2000:	16	14	87.5	<0.05	4	1	25.0	20	15	75.0
Smoking										
Hypodynamia										
Alcohol consumption	-	-	-	-	-	-	-	-	-	

Nutritional factors		16	100.0	>0.05		4	100.0		20	100.0
Excess body weight		5	31.3	>0.05		2	50.0		7	35.0
AG		5	31.3	>0.05		2	50.0		7	35.0
Average value		9	56.25	>0.05		2	50.0		12	60.0
<b>2020:</b>										
Smoking		4	40.0	>0.05		2	25.0		6	33.3
Hypodynamia		4	40.0	>0.05		7	87.5		11	61.1
Alcohol consumption		-	-	-		-	-		-	-
Nutritional factors	10	6	60.0	>0.05	8	7	87.5	18	13	72.2
Excess body weight		4	40.0	>0.05		6	75.0		10	55.6
AG		4	40.0	>0.05		6	75.0		10	55.6
Average value		4	40.0	>0.05		6	75.0		10	55.6
2000-2020		$\chi^2 = 0.163$ S = 0.156 RR = 1,406 95% CI = 0.587 - 3.368 P>0.05				$\chi^2 = 0.047$ S = 0.243 RR = 0.667 95% CI = 0.231 - 1.210 P>0.05				

In 2000-2020, the smoking factor in the female population with NSGst - from 25.0% and 25.0%, hypodynamia - from 50.0% and 87.5% (with an increase of 37.5%), alcohol consumption - 0.00 % and 0.00%, nutritional factors - from 100.0% and 87.5% (with a decrease of 12.5%), OTV - at 50.0% and 75.0% (with an increase of 25.0%) with), AG – from 50.0% and 75.0% (with an increase of 25.0%) and the average value – from 50.0% and 75.0% (with an increase of 25.0%) is determined at the frequency of change. The frequency of detection of nutritional factors decreased in NSGst, while the other 5 risk factors were confirmed to show a significant 21-year increase.

According to the analysis of the obtained data, the epidemiological risk factors in the population of men with NSGst at an older age are 80.0%, except hyperdynamic and AG, a significant decreasing trend is confirmed [ $\chi^2 = 0.163$ ; S=0.156; RR=1.406; 95% CI=0.587-3.368; P>0.05].

In 20-year monitoring, the prevalence and frequency of changes in risk factors in men are expressed in the following description: smoking - with a decrease of 47.5% (from 87.5% to 40.0%), hypodynamia - with a decrease of 3.8% (from 43.8% to 40.0%), alcohol consumption - from 0.00% and 0.00%, nutritional factors - with a decrease of 40.0% (from 100.0% to 60.0%), OTV - 8.7 % with an increase (from 31.3% to 40.0%), AG – with an

increase of 8.7% (from 31.3% to 40.0%), and the average value – with a slight decrease of 16.3% (from 56.25% to 40.0%) is recorded.

During the monitoring years, smoking (62.5% and 15.0% difference) is recorded with a greater detection frequency in men than in women. All other risk factors are expressed at higher rates in the female population with significantly different frequencies and are confirmed by reflecting a 20-year change.

During the survey years, all risk factors of NSGst were detected at higher frequencies in the rural population compared to the urban population. In 2000-2020, in rural population, the frequency of smoking - from 64.3% and 35.7% ( $P < 0.05$ ), hypodynamia - from 50.0% and 57.1% ( $P > 0.05$ ), alcohol consumption - from 57.1% and 50.0% ( $P > 0.05$ ), nutritional factors - from 100.0% and 64.3% ( $P < 0.05$ ), OTV - from 21.4% and 50, From 0% ( $P < 0.01$ ), AG - 21.4% and from 57.1% ( $P < 0.01$ ) confirmed by the dynamics of change.

In the urban population, the frequency of detection and change of risk factors in the years of investigation is confirmed as follows: smoking - 100.0% (in 2000) and 25.0% (in 2020;  $P < 0.001$ ), hypodynamia - 33.3% and 75.0% ( $P < 0.001$ ), alcohol consumption - from 66.7% and 50.0% ( $P < 0.05$ ), nutritional factor - from 100% and 100%, OTV - from 66.7% and 75.0% ( $P > 0.05$ ), AG – 21.4% and 50.0% ( $P < 0.001$ ), the high prevalence of risk factors in urban residents is noticeable.

Only the frequency of smoking and AG in the dynamics is determined by the decrease in this population.

Risk factors were separated separately, and the 20-year dynamics of prevalence in men and women with NSG of young, mature and elderly age was studied and evaluated.

The same trend is also confirmed in women. Hypodynamia identification frequency inspection years - in youth - from 25.0% and 25.0% (expressed by an unchanged trend), mature in the age group - from 25.0% and 25.0% (with unchanged frequency) and in the elderly - from 0.00% and 37.5% (with a sharp increase expressing with change) note will be done.

Table 4.4 and digital Figure 4.5 information again confirm that men are hyperdynamic in the population as a whole when a decreasing trend is shown. But age depends on analysis when done as follows special descriptions represent: 1) young population group in 2000-2020 - spread from 25.0% and 20.0% in frequencies approved (5.0% reduction confirm); 2) at 45-59 – from 6.25% and 0.00% (decrease trend express); 3) elderly In the population with NSGst - from 12.5% and 20.0%, i.e. to increase by 7.5% showing confirmed [ $X^2 = 0.048$ ;  $S = 0.037$ ;  $RR = 1.094$ ; 95%  $CI = 0.427-2.802$ ;  $P > 0.05$ ].

18-74 years old valley in the population nutritious factors (less than 400 g per day amount fruit - vegetable consumption do) risk NSGst factor as analysis when done It was epidemiological monitoring first (2000) and in the final (2020) stages the following identification in frequencies is confirmed and in dynamics changed is observed by going (table 2 and 1 - in the picture statement): 18-44 years old – 50.0% and 22.2%, or an increase of 27.8% trend showing that 45-59 years old - from 15.0% and 22.2% or with an increase of

7.0%, at 60-74 years old - from 30.0% and 27.8% or with a decrease of 2.2% pulls 18-74 years old this factor Risk of NSGst factor as identification frequency - decrease by 12.7% in the indicator is confirmed [ $X^2 = 0.136$ ;  $S = 0.209$ ;  $RR = 1.143$ ;  $95\% CI = 0.879-1.485$ ;  $P > 0.05$ ]. Male and women During monitoring years special spread and dynamics changed to go trend this to the factor relatively according to in case as follows in appearance established: 1) in young people - from 49.9% and 20.0 % (with a decrease of 29.9% ) and - from 50.0% and 25.0% ( with a decrease of 25.0% ); 2) mature at ages - from 12.5% and 20.0% ( with an increase of 7.5% ) and from 25.0% and 25.0% (showing no change); 3) in the elderly - from 31.2% and 20.0% (with a decrease of 11.2%) and - from 25.0% and 37.5% (with an increase of 12.5%); 4) 21-year change frequency in men aged 18-74 is 60.0% from 93.7% (representing a 33.7% decrease trend) and in women - from 100.0% to 87.5% (12.5% showing a decreasing trend) is confirmed.

2 – table Prevalence and 20-year dynamics of age-related nutritional factors as a risk factor of non-alcoholic steatohepatitis in Ferghana Valley

Age groups, years	Male population			R	Female population			General population		
	N	Nutritional factors			N	Nutritional factors		N	Nutritional factors	
		n	%			n	%		n	%
<b>Year 2000:</b>										
18-29	16	5	31.2	>0.05	4	0	0,0	20	5	25.0
30-44		3	18.7	>0.05		2	50.0		5	25.0
45-59		2	12.5	>0.05		1	25.0		3	15.0
60-74		5	31.2	>0.05		1	25.0		6	30.0
18-74		15	93.7	>0.05		4	100.0		19	95.0
<b>2020:</b>										
18-29	10	1	10.0	>0.05	8	1	12.5	18	2	11.1
30-44		1	10.0	>0.05		1	12.5		2	11.1
45-59		2	20.0	>0.05		2	25.0		4	22.2
60-74		2	20.0	>0.05		3	37.5		5	27,8
18-74		6	60.0	>0.05		7	87.5		13	72.2
2000-2020	$\chi^2 = 2.602$ $S = 0.385$ $RR = 1.562$ $95\% CI = 0.927 - 2.632$ $P > 0.05$				$\chi^2 = 0.136$ $S = 0.209$ $RR = 1.143$ $95\% CI = 0.879 - 1.485$ $P > 0.05$					



It is worth noting that the risk of an inappropriate epidural for NSGst at the age of 45-59 and 60-74, depending on this risk factor, is high [ $X^2 = 2.602$ ;  $S = 0.385$ ;  $RR = 1.162$ ; 95%  $CI = 0.927-2.632$ ;  $P > 0.05$ ].

OTV as a risk factor in the first year of the study - 10.0% (in 18-44-year-olds), 10.0% (45-59-year-olds) and 15.0% (in 60-74-year-olds). The 21-year dynamics of change increase these indicators to frequencies of 16.6% (increased to 6.6%), 22.22% (increased to 7.2%) and 16.66% (increased to 1.7%) is expressed.

In general, it is noted that the frequency of detection of OTV increased by 20.0% at the age of 18-74 depending on NSGst [ $X^2 = 0.047$ ;  $S = 0.243$ ;  $RR = 0.666$ ; 95%  $CI = 0.231-1.921$ ;  $P > 0.05$ ]. Such analyses are presented in Table 3 and Figure 1.

3 – table Prevalence and 20-year dynamics of age-related excess body weight as a risk factor of nonalcoholic steatohepatitis in the conditions of the Fergana Valley

Age groups, years	Male population			R	Female population			General population		
	N	Excess body weight			N	Excess body weight		N	Excess body weight	
		n	%			n	%		n	%
<b>Year 2000:</b>										
18-29	16	0	0.00	-	4	0	0.00	20	0	0.00
30-44		1	6.25	>0.05		1	25.0		2	10.0
45-59		1	6.25	>0.05		1	25.0		2	10.0
60-74		3	18.75	-		0	0.00		3	15.0
18-74		5	31.25	>0.05		2	50.0		7	35.0
<b>2020:</b>										
18-29	10	1	10.0	-	8	0	0.00	18	1	5.55
30-44		0	0.00	-		2	25.0		2	11.11
45-59		2	20.0	>0.05		2	25.0		4	22.22
60-74		1	10.0	>0.05		2	25.0		3	16.66
18-74		4	40.0	>0.05		6	75.0		10	55.55
2000-2020	$\chi^2 = 0.001$ $S = 0.089$ $RR = 0.781$ 95% $CI = 0.2731 - 2.2346$ $P > 0.05$				$\chi^2 = 0.047$ $S = 0.243$ $RR = 0.666$ 95% $CI = 0.231 - 1.921$ $P > 0.05$					

OTV as a risk factor of NSGst is confirmed in the survey years with the following prevalence frequency in the male population: 18-44 years old - 6.25% (in 2000) and 10.0% (in 2020) or 20-year dynamics - 3.75% increase in frequency with, at the age of 45-59 – from 6.25% and 20.0% or with a frequency of increase by 13.75% and at the age of 60-74 – from 18.75% and 10.0% or with a frequency of decrease by 8.75% is recorded with [ $X^2 = 0.001$ ;  $S = 0.089$ ;  $RR = 0.781$ ; 95%  $CI = 0.2731-2.2346$ ;  $P > 0.05$ ].

The analysis of the numerical data of the table and the figure again proves that the increasing trend of OTV as a risk factor in the female population over 21 years of monitoring is determined in the following distribution and frequency of change: in the female population aged 18-44 - from 25.0% and 25.0% (unchanged trend with), in 45-59-year-olds – from 25.0% and 25.0% (with an unchanged trend), in 60-74-year-olds – from 0.00% and 25.0% (with an increasing trend).

The general trend shows that the prevalence of OTV has increased by 10.25% in the examined male population and by 25.0% in the female population in the last 20 years ( $P < 0.01$ ).

Table 4 and Figure 2 show the characteristics of age-related characteristics of the distribution frequency and 20-year dynamics of AG as a risk factor of NSGst in valley conditions.

AG as a risk factor is determined in the general population (18-74 years old), in men and women, with the following characteristics and changes according to 20 years of epidmonitoring data: 1) in 18-44 years old - from 5.0% and 22.2% (with an increase in frequency of 18.2% in 2000-2020); 2) in 45-59-year-olds - from 10.0% and 11.1% (with a frequency increase of 1.1%); 3) 60-74-year-olds - from 20.0% and 22.2% (with an increase of 2.2%);

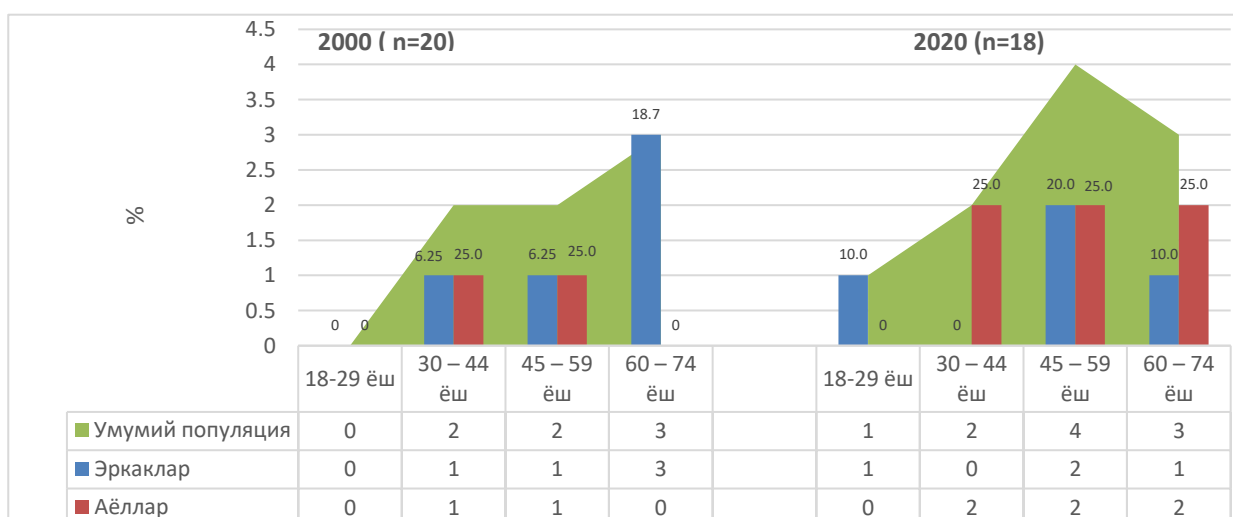


Figure 1. Age-related prevalence of excess body weight as a risk factor for steatohepatitis and the results of its 20-year comparative analysis



Table 4 Prevalence and 20-year dynamics of age-related arterial hypertension as a risk factor of non-alcoholic steatohepatitis in Fergana Valley

Age groups, years	Male population			R	Women population			General population		
	N	Arterial hypertension			N	Arterial hypertension		N	Arterial hypertension	
		n	%			n	%		n	%
<b>Year 2000:</b>										
18-29	16	0	0,0 0	-	4	0	0,0 0	20	0	0,0 0
30-44		1	6.2	-		0	0,0 0		1	5.0
45-59		1	6.2	>0.05		1	25.0		2	10.0
60-74		3	18.7	>0.05		1	25.0		4	20.0
18-74		5	31.2	>0.05		2	50.0		7	35.0
<b>2020:</b>										
18-29	10	1	10.0	>0.05	8	1	12.5	18	2	11.1
30-44		1	10.0	>0.05		1	12.5		2	11.1
45-59		1	10.0	>0.05		1	12.5		2	11.1
60-74		1	10.0	>0.05		3	37.5		4	22.2
18-74		4	40.0	>0.05		6	75,0		10	55.5
2000-2020	$\chi^2 = 0.001$ S = 0.089 RR = 0.781 95% CI = 0.273 - 2.235 P > 0.05				$\chi^2 = 0.047$ S = 0.243 RR = 0.667 95% CI = 0.231 - 1.921 P > 0.05					

4) 18-74-year-olds - from 35.0% and 55.5% (with an increase of 20.5%); 5) among men aged 18-44 - 6.2% (in 2000) and 20.0% (in 2020) or with an increase of 13.8%; 6) 45-59-year-old men - from 6.2% and 10.0% (with an increase of 3.8%); 7) in 60-74-year-old men - 18.7% and 10.0% (with a decrease of 8.7%), significantly different [ $\chi^2 = 0.001$ ; S=0.089; RR=0.781; 95% CI=0.273-2.235; P>0.05].

In the male population aged 18-74 years, it is confirmed that this risk factor has increased from 31.2% (in 2000) to 40.0% (that is, an increase of 8.8%).

In the population of young women, AG as a risk factor of NSGst in 2000-2020 - from 0.00% and 25.0% (increased to 25.0%), in mature women - from 25.0% and 12.5% (12.5 decreased by %), in elderly women - from 25.0% and 37.5% (increased by 12%) and in women aged 18-

74 - from 50.0% to 75.0% or with a frequency increase of 25% is noted [ $X^2 = 0.047$ ;  $S = 0.243$ ;  $RR = 0.667$ ; 95%  $CI = 0.231-1.921$ ;  $P > 0.05$ ].

Important conclusions can be drawn from the results of this work, the design of which is a retrospective epidemiological study: 1) risk factors of non-alcoholic steatohepatitis are determined by regional characteristics, they serve as "basic control and practice" in the treatment of the disease and the new development or improvement of primary and secondary prevention programs. The absence of such a reaction, on the contrary, reduces the effectiveness of any measures and/or completely loses them;

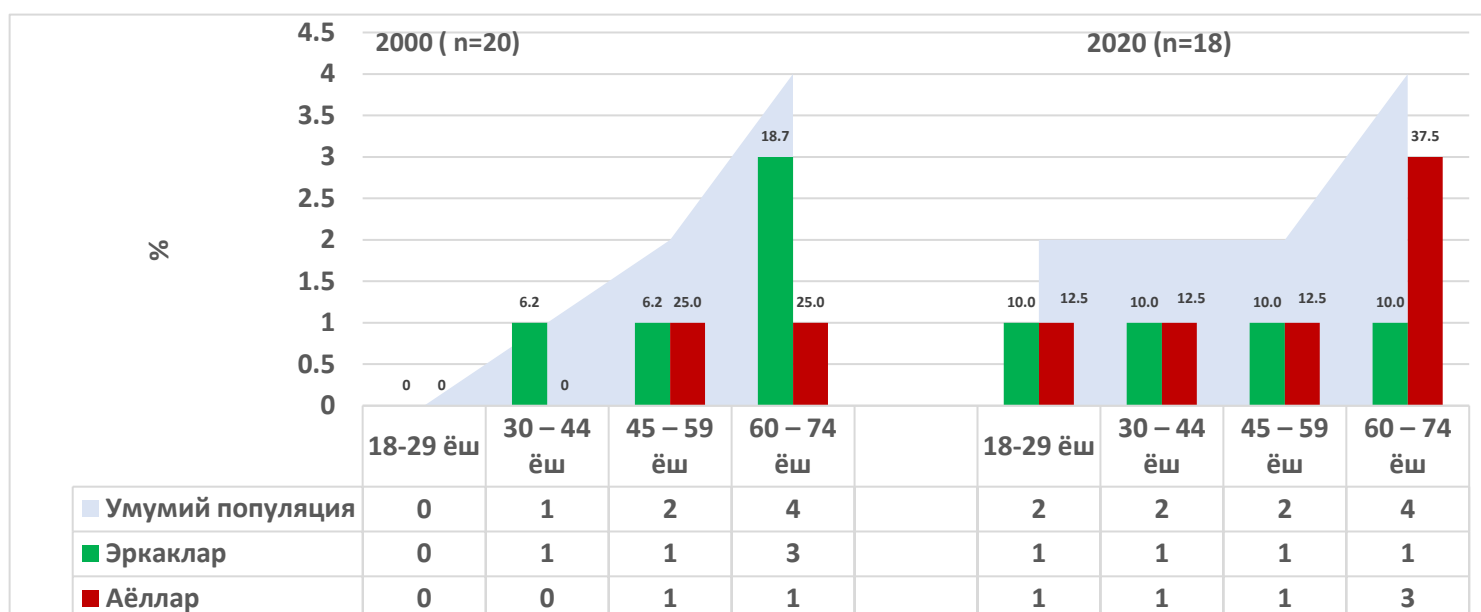


Figure 2. Prevalence of arterial hypertension as a risk factor for steatohepatitis according to age and the results of its 20-year comparative analysis

2) Young, mature and elderly age groups gain importance by creating leadership conditions in the development of specific risk factors of non-alcoholic steatohepatitis. Based on them, it will undoubtedly be appropriate to create and implement the strategies of prevention and "pharmacotherapy" in NSGst.

## CONCLUSIONS

1. According to the 20-year epidemiological monitoring, the prevalence of non-alcoholic steatohepatitis in the elderly population of the valley is 10.4%, with a significant difference, and it is confirmed that men (11.2%) prevail over women (9.4%). In the last 4 years, it has reached 4 times, representing a decreasing trend of 8.0% per year.

2. Risk factors of non-alcoholic steatohepatitis are determined by the specific prevalence frequencies and 20-year changes in the population of the valley: hypercholesterolemia - 33.3% (with an increase of 30.0%), hyperglycemia - 16.7% (with an increase of 11.7%), hypertriglyceridemia - 33.3% (with an increase of 6.6 times), smoking -

33.3% (with a decrease of 41.7%), hypodynamia - 61.1% (with an increase of 16.1%), nutritional factors - 72, 2% (with a decrease of 27.8%), excess body weight - 55.6% (with an increase of 20.6%) and arterial hypertension - from 55.6% (with an increase of 20.6%) confirmed non-alcoholic steatohepatitis show a relatively inconsistent epidemiological situation.

3. All risk factors of non-alcoholic steatohepatitis are confirmed in relatively high frequencies in the rural population compared to the urban population and are recorded with different frequency in different age groups: • smoking - 16.6% in young people, 11.1% in adults and 5.5% in old people; • hypodynamia - from 22.2%, 11.1% and 27.8%; • nutritional factors - from 22.2%, 22.2% and 27.8%; • excess body weight - from 16.6%, 21.2% and 16.6%; • arterial hypertension - from 22.2%, 11.1% and 10.0%; dyslipidemia - from 15.0%, 22.4% and 35.3%.

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