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CLINICAL AND TREATMENT OF ACUTE MYOCARDIAL INFARCTION

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The monograph presents modern approaches to a comprehensive approach to the treatment and prevention of children with dental and dental anomalies that occur together with chronic tonsillitis and bronchitis. In this case, there are dental anomalies and risk factors for their development: socio-medical justification of children with chronic tonsillitis and bronchitis at the same time, as well as modern clinical and functional assessment among children with dental anomalies, development of structural criteria for defects.

The monograph is approved for publication by the Council of the Bukhara State Medical Institute (Protocol No11, 29 may 2024).

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LIST OF CONVENTIONS AND TERMS

AH – arterial hypertension

AP - arterial pressure

RICU – Reanimation and intensive care unit

SCD – sudden cardiac death

RSSC – All-Russian Scientific Society of Cardiologists

SRCPM – State Research Center for Preventive Medicine

ACE inhibitors – angiotensin converting enzyme inhibitors

CI - cardiac ischemia

MI – myocardial infarction

MIPE of ST – myocardial infarction with persistent elevation of the ST segment of the ECG

BMI - body mass index

CAG – coronary angiography

CT - CT scan

CPhK – creatine phosphokinase

CBS – coronary bypass surgery

HDL – high density lipoproteins

LDL – low density lipoproteins

MRI – Magnetic resonance tomography

MS – metabolic syndrome

MT - body mass

No MI – MI without Q wave on ECG

LMH – low molecular weight heparin

AMI – acute MI

ACS – acute coronary syndrome

SBP – systolic blood pressure

DM - diabetes

E - emergency

HF - heart failure

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CVD   - cardiovascular diseases

TG   – triglycerides

Ultrasound   - ultrasonography

EF   – left ventricular ejection fraction

RF   - risk factors

ChNCD   – chronic non-communicable diseases

HS   – cholesterol

PCI   – percutaneous coronary interventions

ECG   – electrocardiography

Echo KG   – echocardiography

INTRODUCTION

Relevance of the problem. The incidence of myocardial infarction (MI) in the adult population, despite significant progress in diagnosis and treatment, remains high. Acute myocardial infarction is one of the most dangerous and common diseases, occupying a leading position in the structure of mortality of the population of our planet. According to the World Health Organization, cardiovascular diseases (CVDs) have been the leading cause of death worldwide for the past 20 years. Thus, in 2019, almost 9 million people died from these diseases. This category of pathology has not only important medical, but social and economic significance, since a significant proportion of so-called premature mortality is associated with them. "CVDs, including coronary heart disease, stroke, heart failure, peripheral arterial disease and a number of other nosologies, are the leading cause of global mortality and make a major contribution to the decline in quality of life"[1]. Screening measures for their prevention can not only reduce the incidence, but also help prolong life, primarily among the elderly and senile population. This determines the high relevance and need to continue the development of preventive programs to prevent the complicated course of cardiovascular pathology.

In world practice, the most relevant research at present is to improve the diagnosis, treatment, rehabilitation and prevention of CVD, identifying new individual epigenetic sensitive trajectories at the level of individual cells, which may provide additional opportunities for establishing diagnostic and prognostic biomarkers, as well as targets for therapeutic intervention. . The search for the main pathogenetic mechanisms involved in the development of ischemic stroke and other diseases continues; specific aspects of the influence of activation and regulation of circular RNAs, such as MICRA, as well as epitranscriptomics at the RNA level, on the formation of cardiomyopathy and heart failure are being studied. New frontiers for precision medicine and personalized therapies are being

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[1]Mensah GA, Roth GA, Fuster V. The Global Burden of Cardiovascular Diseases and Risk Factors: 2020 and Beyond. J Am Coll Cardiol. 2019 Nov 19;74(20):2529-2532. doi: 10.1016/j.jacc.2019.10.009. PMID: 31727292.

explored using innovative bioinformatics tools designed to identify putative genes and molecular networks underlying CVD.

Development of domestic healthcare, broadly covering targeted measures aimed at improving outcomesearly diagnosis of CVD, introduction of modern technologies for their prevention and treatment. Measures are being taken to bring the medical system to the requirements of world health standards, total regular medical examinations to identify risk factors for the development of CCP in the population, in particular, acute myocardial infarction. The action strategy of the Republic of Uzbekistan for five priority areas for 2017-2021 identifies priority tasks such as "... ensuring a reduction in the incidence of the population and an increase in life expectancy." In this regard, optimization of the population-based preventive approach in patients with cardiovascular diseases is one of the urgent tasks of preventive specialists.

This dissertation research to a certain extent serves to fulfill the tasks approved by the Decree of the President of the Republic of Uzbekistan "On measures to introduce fundamentally new mechanisms in the activities of primary health care institutions and further improve the efficiency of reforms carried out in the health care system" No. UP-6110 dated November 12, 2020 year, Resolutions of the President of the Republic of Uzbekistan "On measures to prevent non-communicable diseases, support a healthy lifestyle and increase the level of physical activity of the population" No. PP-4063 dated December 18, 2018 and "On additional measures to ensure public health by further increasing the efficiency of work on medical prevention" No. PP-4891 dated November 12, 2020, as well as other regulatory documents adopted in this area.

CHAPTER I. LITERATURE REVIEW

§1.1. Epidemiology, scientific and practical significance of acute myocardial infarction among the elderly and senile population

Cardiovascular diseases are the leading cause of death in Uzbekistan and account for more than 60% of the overall mortality rate. Moreover, CVDs have not only important medical, but also enormous social and economic significance, since they are associated with a significant proportion of so-called premature mortality, that is, mortality among people of different ages [36, 60; p.1040-1049]. Due to the special medical and social significance of CVDs, their prevention should be one of the priorities that science, especially the preventive and healthcare system, should face.

The main and most dangerous CVDs are IHD and its significantly dangerous manifestation – AMI [WHO, 2017]. There is undoubted scientific evidence showing that epidemiological studies and screening measures for the prevention of CVD can not only reduce the incidence, but also help prolong life, primarily among the elderly and senile population. The system for preventing CVD, in particular AMI, should traditionally be based on identifying so-called modifiable risk factors in older age groups of the population, that is, such acute forms of IHD and conditions, the presence of each of which increases the likelihood of developing cardiovascular accidents and death [17 ; pp.27-33, 20; pp.45-48, 21; p.218-219]. Existing and operating systems of total regular testing (dispensary examination) to identify risk factors for the development of CVD / AMI in the population can give positive results, but in most cases they do not justify themselves, since they require quite large financial, structural and organizational costs, with little effectiveness. In this regard, optimization of the population-based preventive approach to strengthening drug safety and the effectiveness of screening among the population in patients with AMI is one of the urgent tasks of preventive specialists.

In recent decades, cardiovascular prevention (CVP) has been actively progressing in a subgroup of the population - older patients, and prevention algorithms and rehabilitation programs are being developed. Almost ¾ of deaths from IHD occur in persons over 65 years of age, and almost 80% of those who died from AMI belong to this age group [38; p.23, 45; pp.123-127]. Prevention of AMI in older age groups and therapy have their own characteristics associated with the frequent presence of concomitant pathology. Which leads to limitations in the use of some methods of primary, secondary and tertiary prevention. Based on this, epidemiological studies play a leading role in uncovering problems associated with the prevention of AMI among the elderly and senile population.[2]

In Uzbekistan, large-scale work is being implemented in this direction and the following legal documents have been adopted [33, 34, 35, 36, 47]:

- Resolution of the President of the Republic of Uzbekistan No. PP – 3071 "On measures for the further development of specialized medical care to the population of the Republic of Uzbekistan for 2017-2021";

- Resolution of the President of the Republic of Uzbekistan "On additional measures to ensure healthy nutrition of the population" (2020);

- Decree of the President of the Republic of Uzbekistan No. PP – 3052 "On measures to further improve the activities of health authorities" (2017);

- Resolution of the President of the Republic of Uzbekistan "On measures to prevent a healthy lifestyle and increase the level of physical activity of the population" (2018).

They identify priority tasks, ways of gradual development of preventive emergency cardiology - prevention of CVD, early identification of risk factors and increasing the effectiveness of treatment, including early emergency diagnosis of CHD/AMI using high-tech methods, development of therapeutic measures and, as a result, a reduction in morbidity and "end points", improving the quality of life, prognosis of patients and increasing life expectancy of the population. Scientific

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[2]Quote From the working meeting of the President of the Republic of Uzbekistan on November 6, 2020, dedicated to improving the primary health care system

and practical results of studying the effectiveness of population-based and preventive programs were obtained, and the advantage of screening prevention was shown based on the results of an epidemiological study [8, 88; p.4945720, 91; p.1211-1215].

To optimize known methods of prevention and treatment of AMI, modern scientific and practical medicine needs accurate and evidence-based epidemiological information [77; pp.1598-1660, 119; p.760-765].

In Uzbekistan, as in most countries, AMI remains a problem for men over 45 years of age and women over 55 years of age (Nikishin A.G., 2012); the number of elderly and senile patients with AMI is increasing. Actively organized epidemiological and preventive programs for improving the health of the elderly and senile population in various regions of the country, including arid zones, can significantly reduce the morbidity and mortality from AMI. In this regard, the study of the epidemiology of AMI and the availability of results on the true prevalence of AMI and its relationship with various (regional) risk factors influencing its development are of priority importance in modern science.

Analysis of literature data shows that the most important aspect of modern infarction is that 75% of out-of-hospital sudden circulatory arrests are caused by coronary pathology and acute myocardial infarction. Despite advances in the treatment and diagnosis of AMI in recent years, it still leads in mortality rates. [49; p.333-334]. According to statistics in the world, in 54% of cases the cause of death is diseases of the cardiovascular system [71; pp.119-177]. In Uzbekistan, despite the fact that large-scale comprehensive measures are being taken to radically improve the quality of medical care to the population, there is a high mortality rate from CVDs: in 60% of cases, the cause of death is cardiac pathologies, every year 7,000 people die from AMI, 23,000 from premature death is hypertension, 5000 people have diabetes and 3.6 thousand of the population die from stroke [34]. Problems of effective cardiac prophylaxis, including the development of emergency medical care methods, are of priority importance in modern science and practice. In this regard, it should be especially emphasized that the strategy of

action of the Republic of Uzbekistan in five priority areas for 2017-2021 defines specific tasks such as "first of all, reforming the ambulance and emergency medical care system as the first link in increasing the accessibility and quality of medical care to the population services, ensuring a reduction in population morbidity and increasing life expectancy" [33, 48]. All over the world, an urgent problem in scientific and practical medicine is the optimization of treatment (primary, secondary and tertiary drug prevention) of AMI using myocardial revascularization methods, taking into account the characteristics of the high-risk population strategy and regional unfavorable prognostic risk factors [98; pp.155, 107; pp.1564-1570, 117; p.20].

According to modern population studies in gerontology, life expectancy is increasing throughout the world. Thus, in low- and middle-income countries, almost half of middle-aged and elderly people have multimorbidity, about 25% of them have at least 3 chronic diseases at the same time, and about 10% have 4 or more. Physical multimorbidity (if a person has 2 or more chronic diseases is called physical multimorbidity) is associated with decreased quality of life, increased health care costs, and ultimately an increased risk of early death. [4; pp.73-78, 15; pp.95-96]. Researchers claim that, regardless of the socio-economic development of the country, the main causes of death and disability in elderly and senile people (60 years and older) are chronic diseases, many of which often occur together [19; p.13]. According to WHO, more than 20% of adults aged 60 years and older suffer from neuropsychiatric disorders (NP AMI). Older people with CAD/AMI have a higher incidence of depression compared to those in good health.

Kotova O.V. et al. (2018) in their studies showed that in patients with cardiovascular diseases, the problem of comorbidity and its epidemiological study is relevant in most patients, including the elderly. The number of age-related diseases, including AMI, is significantly increasing. Comorbidity increases from 10% to 80% in 19-year-olds and to 80% in older adults. An analysis of 980 case histories obtained from the daily practice of a family doctor showed that the prevalence of joint diseases in young patients was 69%, in middle-aged patients -

93%, in elderly patients - 98%. Moreover, the average number of chronic diseases in young patients is 2.8, in old people - 6.4, that is, 3 times more [15; pp.95-96].

Modern emergency cardiology is an area of dynamic development, both in scientific and practical medicine. In recent years, there have been significant changes in ideas about what a modern cardiologist or general practitioner/family physician should meet (for example, preventive cardiology and its population strategies) should know (erudite), what should be able to (practice) doctor.

The experience of foreign countries and the results of large controlled preventive programs, such as CINDI, TACIS, RECORD, including those carried out in Uzbekistan [21; pp.218-219, 22; pp. 33-35], showed several reasons that were motivating for turning to the epidemiology of AMI. The leading one is new population-preventive knowledge that has emerged in various areas of preventive cardiology. Firstly, epidemiological and preventive studies have had a significant impact on the diagnostic process in emergency cardiology and contributed to the introduction of fundamentally new methods of prevention. It is enough to give examples of modern prevention of CVD, chronic disease and, in general, a number of other internal pathologies [3; p.488, 13; p.288, 18; p.39-44]. Secondly, such an area as screening and registry, which is associated with a new quality in early diagnosis, prevention and medical examination of the most common diseases. Cardiological and preventive science and practice are faced with fundamentally new tasks in determining the "preventive window" for primary, secondary, tertiary and quaternary prevention of not only chronic diseases, but also emergency cardiac conditions, in particular ACS / AMI [53; With. 105-119, 56; pp.56-58]. Third, the evolution of CVD. As modern researchers recommend, in this regard, two processes should be noted: on the one hand, new rare (orphan) cardiac diseases are described, on the other hand, there is growing concern due to the formation of resistance of CVD, in particular AMI, to existing cardiac drugs and / or ABCDE program drugs [17; pp.27-33, 23; pp.30-34, 58; pp.6-11, 62; p.1-119].

Among modern people and patients, the proportion of people with risk factors for AMI is increasing. This means that in modern humans, AMI occurs

against the background of risk factors [7; p.39, 68; p.21-28] and multimorbidity [80; p.5, 81; p.53], some of them may be the reason for the development of "endpoints" from them. Knowledge of RF is necessary for practical healthcare and preventive science to predict, prevent and optimize the treatment of AMI. Therefore, today the requirements for risk factors and preventive knowledge, that is, epidemiological studies, are sharply increasing in the diagnosis and management of AMI. The purpose of such research is to help reduce the mortality rate of residents of various regions of the world and increase life expectancy through the implementation of comprehensive measures to promote early access to medical care, the formation of a responsible lifestyle and healthy attitudes of the population. At the same time, it should be noted that despite the relevance of the problem of AMI and numerous studies conducted (mainly clinical) and currently ongoing, specific algorithms of actions aimed at preventing the development of AMI, especially in the elderly and senile population, have not been determined.

In the work of Oshchepkova E.V. and co-author (2013) analyzed the morbidity and mortality from MI in the Russian Federation in 2000-2011. It turned out, according to official Russian statistics, that the leading cause of death from cardiovascular diseases is coronary heart disease, which accounts for 52.8% of deaths from cardiovascular diseases [29; p.4-10]. These data are 3 times higher than in the USA [106; p.3-220] and is 9 times higher than in Japan [30; p.5-12]. These authors analyzed the "endpoints" of AMI (the number of deaths from AMI or higher in absolute terms and per 100,000 population), and also showed that mortality from AMI was significantly higher in men. The authors also note an increase in mortality from AMI among older women in recent years, with an increase in mortality from recurrent MI (from 2000 to 2011 by 33.7%). Hospital mortality remains high and ranges from 15-16% with a high incidence (40.4%) on the 1st day after hospitalization.

Erlikh A.D., Gratsiansky N.A. (2009) reported that according to the results of the RECORD Register, hospital mortality from MI was 13.2% [53; With.]. In the well-known Lyubertsy study of mortality in patients who suffered AMI

(Russia), conducted at the Lyubertsy hospital in the Moscow region, Martsevich S.Yu and co-author (2012), the mortality rate from AMI was 15.2% [20; p.45-48].

In other epidemiological clinical studies, mortality from AMI was: according to the Moscow Department of Health - 15.4%; in the Hasdai D. et al (2002) EHS register – 7.5% [78; p.1190-1201]; in Fox RAA et al (2003) GRASE – 8% [73; p.1414-1424]; in the CRUSADE registry of researchers Patel MR, Chen AY, Peterson ED– 6% (2006) [101; p.641-647]. All of these studies noted the problem of hospital mortality on the 1st day after admission to the hospital (40.4%).

This epidemiological situation regarding AMI, according to researchers, necessitates a special analysis of its risk factors/causes (late admission of patients to the hospital, severity of the patients' condition, lack of thrombolytic therapy, resuscitation measures, etc.) in dispensary and epidemiological studies. It should be noted that the "Chaz system" of medical care (created in the 60–70s of the last century) significantly reduced hospital mortality from MI, which is less than 10% [56; pp.56-58, 57; p.5-10], comparable to the same indicator in non-CIS countries [75; pp.178-185, 89; pp.764-773, 100; pp.684-692, 104; p.21-181].

Researchers from near and far abroad - Oshchepkova E.V. and co-author (2012) by assessing the organization of medical care for patients with ACS in the dynamics of ST in 2009 and 2010. in the constituent entities of the Russian Federation [30; p.5-12], Yong F. et al (2010) in the USA [121; pp.229-232], Björck L. et al (2009) in Sweden [64; p.1047-1052] and Unal B. et al (2004) in patients with acute coronary pathology [113; p.1046-1056] it is noted that it is advisable to conduct epidemiological studies for a more complete and objective assessment of the quality of treatment, mortality and treatment of patients with AMI and patients with this disease. In the available literature, such studies in the elderly and senile population turned out to be extremely insufficient.

Gerasimenko NF, Oganov RG, Mychka VB (2011) in their studies argue that the epidemiology, clinical course and dynamics of the development of CVD / MI differ in women and men. In this matter, there is still an opinion that cardiac

pathologies are associated mainly with men. This is actually not the case, as epidemiological studies show that women in Europe are more likely to die from cardiovascular disease than men. Indeed, this is not the case, since the results of epidemiological studies show that in Europe women are much more likely to die from CVDs compared to men (55% of women and 43% of men):

- IHD is the leading cause of death in 24% of women, stroke in 18%, other CVD in 15% of cases, while IHD/AMI in men is 21%, stroke in 11%, other CVD in 11% of cases;

- In Europe, mortality from coronary heart disease among men has decreased by 50% over the past 40 years, but in women there has been no positive trend in mortality from cardiovascular diseases;

- IHD/MI continues to be the leading cause of death in women (24%), which is much more dangerous than breast cancer, which has always been considered the "killer of women" [76; p.5-8].

All of the above indicates the need for more evidence-based medical monitoring of the condition of not only men, but also older and elderly women, with an emphasis on early detection and correction of key risk factors for CVD/AMI. However, as evidenced by modern research, today women undergo in-depth epidemiological examination before the onset of symptoms of AMI/CVD, which are less recommended for measures for the primary and secondary prevention of CND. Such measures can help preserve health, prolong and improve the quality of life not only for older women, but also for men [61; pp.671-719, 62; pp.1-119, 63; p.157].

§1.2. Risk factors for acute myocardial infarction in elderly and senile age, regional and population characteristics.

One of the necessary aspects of improving the cardiovascular health of the population is its scientific and practical education, justified widespread informing of society about risk factors for CVD/AMI, regional screening methods for their prevention and treatment.

Kalinina AM in her review work (2011) presented the main results of initial epidemiological studies of CVD conducted in various regions of the USSR. She convincingly substantiated that 45 years have passed since the beginning of a large-scale epidemiological study in Moscow, Kaunas, Kyiv, Kharkov and Tashkent (Kayumov U.K. et al.), Andijan (Tursunov S.Yu., Mamasoliev N.S.), Frunze (now Bishkek) in which the largest scientific centers of the former republics of the USSR were simultaneously involved [86; pp.14-22]. He believes that the lessons and/or scientific "outputs" arising from these studies of the former Soviet republics will undoubtedly be in demand in modern global health policy, implemented in the direction of promoting health and preventing chronic diseases and CVD/AMI among the population:

1) High mortality from CVD is largely associated with lifestyle and associated risk factors, primarily behavioral habits;

2) For the first time, the prognostic significance of such dynamics of RF levels was studied against the background of their targeted active correction and without it;

3) AMI developed 4 times less with targeted preventive medical intervention on risk factors;

4) Scientific confirmation and development of the concept of CVD risk factors was obtained;

5) It has been confirmed that population stratification is important for differentiating preventive measures and should be carried out directly in the process of mass preventive and screening examinations of the adult population to select the most rational intervention tactics.

Semenova Yu.V. et al (2011) in order to assess the relationship between the radiation component and the possibility of developing AMI between workers of a nuclear enterprise, identifying risk factors for the development of AMI and determining ways of prevention in an organized population, a prospective, population-based study was conducted in 1665 individuals exposed to the radiation factor. It was found that in the group of personnel of a nuclear industry enterprise

(PAP), in the presence of traditional risk factors for AMI, an important factor in the pathogenesis of the disease is not the magnitude of the total doses of external radiation, but the individual conditions of dose accumulation. The researchers argued that for a system of preventive measures aimed at reducing the level of morbidity and mortality from AMI in an organized population, it is necessary to form risk groups taking into account the most significant risk factors of the disease. In addition to the traditional ones (hypertension, smoking, hypercholesterol, diabetes) for PAP personnel, there are conditions for adjusting the radiation dose (age of exposure, duration of exposure) [108; pp.23-29]. Once again, it will be possible to draw conclusions and emphasize that each population and/or region has its own risk factors. Therefore, to improve preventive measures aimed at reducing morbidity and mortality from AMI, it is recommended to implement preventive programs taking into account the most important regional risk factors for this disease. This opinion is shared by many domestic and foreign researchers [46; pp.29-32, 66; pp.1219-1223, 103; p.146-151].

In different countries of the world, the analysis of these data naturally raises the question, how are successes achieved in the fight against AMI? It should be recognized that the use of anticoagulants and thrombolytics have demonstrated effectiveness [59; p.62-67]. Thus, a meta-analysis of 7 studies showed that UFH is able to reduce the risk of death and MI by 45% in patients with non-ST segment elevation ACS compared with placebo [77; pp.1598-1660]. However, it is already known that such a very effective tactic was not sufficient to minimize the leading position of CVD/AMI in the list of causes leading to disability and mortality of the population [90; pp.53-58]. In Russia, for example, more than 1 million people die annually from cardiovascular diseases (700 cases per 100,000 population), which exceeds similar figures in Western Europe and North America. The largest number of deaths is associated with ischemic heart disease – 51% [31]. However, according to a recent study, there are well-founded concerns that official statistics underestimate the incidence of MI as a leading cause of death, especially outside the hospital [57; p.5-10]. Thus, in the studies of O.V. Zairatyants (2004) and R.M.

Linchak et al (2011), it was confirmed that of all those who died outside the hospital, MI was not diagnosed in every second person in 32% of cases [54, 90; pp.53-58].

Savelova V.V., Dolgikh V.T., Kondratyev A.I. et al. (2008) conducted a retrospective epidemiological study of 201 medical records of elderly patients and pathological examination data who were admitted to the hospital with AMI and died at different times. In this study, in primary AMI, extensive damage to the left ventricle predominated; in recurrent AMI, anterior MI predominated. The leading cause of death during AMI in the elderly is acute left ventricular failure, which was confirmed by severe atherosclerotic lesions of the coronary arteries according to pathological examination. In addition, among risk factors, tobacco smoking and hypertension predominated in men, obesity, diabetes and hypertension in women; predictors of adverse outcomes were age over 60 years in men and 70 years in women [40; p.45-48].

Sinaiskaya M.A., Kurochkina O.N. (2017) in order to identify risk factors for death in patients with AMI, taking into account gender characteristics, during a retrospective epidemiological study, they studied 1744 medical records with an established diagnosis of AMI of men (56.8%) and women (43.2%); the average age of men was 61.12 ± 12.3 years, women – 70.82 ± 10.03 years. AMI (age over 61 years, Killip severity class > II, ventricular arrhythmias, diabetes, left ventricular ejection fraction <44%, GFR <60 ml/min/1.73 m2) and individual risk factors for mortality in women, noted as (over 70 years of age, Killip severity level > II, ventricular arrhythmias, history of arterial hypertension, mean admission blood pressure <93 mm Hg; GFR level <46 ml/min/1.73 m2). These factors were combined by researchers into a scale to assess the risk of death from myocardial infarction, and the sample based on the scale gave results comparable to the results obtained using the GRASE and RECORD scales [42; p.19-27].

There is limited evidence in the literature that in some cases patients develop AMI even without any risk factors. We found such a reasonable conclusion in the research of Korean scientists. Ah-Ra Choi et al (2019) analyzed 11,390 AMI

patients enrolled in Korea in the National Institutes of Health AMI Registry from November 2011 to December 2015. The patients were divided into two groups depending on the presence of any risk factors for CVD: group I, without risk factors, and group II, with risk factors. It was noted that group I was older and had a higher proportion of women (36.2% vs. 24.8%) than group II. In group I, there was a history of angina pectoris (7.0% vs. 9.4%) and cerebrovascular injuries (3.45 vs. 20.0%) did not differ between groups. The researchers showed that older female patients were prone to developing AMI even without any modifiable CV risk factors. They suggested that more intensive therapy/assistance is needed in patients with AMI without any CVD risk factors and having a high creatinine level [60; p.1040-1049]. A study was conducted in Taiwan, the purpose of which, as reported by study leaders Shu - Yun Syuy, Fong - Lin Chen et al (2016), was to determine whether matched or mismatched influenza (IV) vaccine strains were beneficial in reducing risk of AMI in older people. Data were obtained from the Longital Health 2005 (LHI) 2005 database, which is maintained by the National Health Insurance Research Institute in Taiwan. Analytical data included individuals who were vaccinated with mismatched vaccines during the season from October 2007 to December 2007 and individuals vaccinated with selected strains during the season from October 2008 to December 2008. All participants were 65 years of age or older. The Cox hazard model was used for the hazard rate of AMI. This study included 93,051 exposed and 109,007 unexposed individuals. Men exposed to matched vaccines had a significant incidence of AMI hazard ratio (HR), while women's HRs were barely significant. The risk of AMI may be particularly reduced in men if the IV is well matched with circulating strains in older adults [114; p.2869]. Walid Jomaa et al (2016) conducted an epidemiological study in a retrospective registry of 1403 patients with AMI in a Tunis center. Patients ≥75 years of age were considered elderly. The study results show that, compared with younger patients, older patients are more likely to suffer from hypertension, but less likely to suffer from smoking and obesity. Thrombolysis was significantly less used in the older group (22.3% vs. 36.6% in the younger group), whereas use of

primary percutaneous coronary intervention was comparable between subgroups (24.2% vs. 28.8%). The incidence of in-hospital complications was higher in the elderly group, alsoas did in-hospital mortality (14.2% vs. 8.1%). Heart failure on admission, renal failure on admission, and inotrope use were independently associated with in-hospital death in the elderly group.

Overall, in this study, in the Tunisian context, older patients with AMI had a higher prevalence of RF and a worse in-hospital course compared with younger patients. In addition, it was revealed that the clinical picture of AMI upon admission has a strong influence on the in-hospital prognosis [119; p.760-765]. Many studies, including those conducted in our country (Mamasoliev N.S., Kayumov U.K.) have shown that hyperuricemia (SUA) can be a marker of poor prognosis, especially in patients with AMI. However, the role of SUA as a risk factor for MI is still controversial. A study by Li H. et al (2010) aimed to evaluate the association between hyperuricemia and short-term outcomes in 673 elderly patients with AMI. It has been proven that elevated SUA levels may be associated with short-term outcomes and appears to be, according to researchers, an independent predictor of 30-day cardiovascular events (CVE) in elderly patients with AMI [91; p.1211-1215].

In recent years, domestic researchers have actively conducted large-scale population studies in Uzbekistan [7; p.39, 28; pp.11-15, 43; p.39, 44; p.138]. Their main directions were the study of risk factors for CVD, issues of ACS, and sudden cardiac death. Our researchers noted and recommended: timely identification of groups with varying degrees of risk among the population of Uzbekistan, taking into account the totality of the main factors that determine the prognosis of the development of severe CVD for adequate primary prevention of "epidemiological endpoints";

• For the first time, data on the epidemiology of CHF according to primary health care data is provided;

• Gender characteristics of AMI have been identified and assessed, regional ways of their prevention are indicated among gender differences in the incidence

of AMI; attention is drawn to the twofold higher incidence of men (67.2%) than women (32.8%);

- The influence of regional, age, gender and educational and professional factors on the incidence of SCD in 1639 suddenly deceased persons aged 15–90 years has been widely studied.

The largest number (29.7%) of sudden deaths were people in the age group of 70-79 years.

Domestic results make it possible to identify those categories of the Uzbek population among which it is necessary to carry out preventive measures of a primary, secondary, tertiary and quaternary nature [1; p.61-63].

In the work of Tulaboeva G.M. and co-author (2020) present (in clinical material) modern ideas about the role of inflammation in ischemic heart disease. It has convincingly shown that research in recent years has led to the formation of a new understanding of atherosclerosis - most researchers consider atherosclerosis as a chronic low-intensity inflammatory process. The final stage of this process is atherosclerosis, atherothrombosis being the main cause of MI [46; pp.29-32].

Mamutov R.Sh., Nagaeva G.A. and co-author (2020) in the clinic of the Republican Specialized Center for Cardiology of the Ministry of Health of the Republic of Uzbekistan studied the occurrence of various forms of AMI and their main characteristics. In men, AMI was observed at a younger age, and in women - mainly after 60 years. The male to female ratio was $\approx$ 3/1. The presence of hypertension occurred in 89.9% of patients. Obesity was observed in 37.5% of respondents. Type 2 diabetes was registered in 24.8% of cases. AMI complicated by CHF was observed in 88.5% of respondents. AMI in women more often affected the anterior, and in men, the posterior wall of the left ventricle. [22; p.33-35].

In general, in all countries of the world, including Uzbekistan, despite the undoubted achievements in the field of preventive cardiology, there is a need and demand in the elderly and senile population to optimize known methods of drug

primary and secondary prevention, taking into account the epidemiological characteristics of regional risk factors for MI .

§1.3. Features of the clinical course, ways to optimize treatment and prevention of acute myocardial infarction in the elderly and senile population.

Turning to the problems of screening, pharmacoepidemiology, regional aspects of the course and prevention of AMI, it should be mentioned that in our century the extremely high prevalence and highest mortality from CVD among the population of not only European but also Central Asian countries continues, which allows us to speak of an epidemic of CVD , primarily in elderly and senile people. "Further ignoring this fact is not permissible" (R. Virchow), since epidemics are like serious warning signs by which one can understand that the evolution of a nation is disrupted to the extreme [16; pp.99-103].

In the world, the medical and social significance of MI is currently growing, and it is beginning to be considered not only as a disease of a specific patient, but also as a criterion for the leading problems of public health and the state of the healthcare system. According to the results of modern research, the social and medical-economic burden of MI in the population of our century is characterized by the following epidemiological indicators:

- The incidence in the CIS (using the example of the Russian Federation) is 2.6 times lower than in the USA (162 and 420 cases per 100 thousand population, respectively);

- • In Russia, repeated MI was recorded in every seventh case after the primary one, and in the USA - in every second case [55, 79].

- Mortality due to MI in Russia is higher than in the USA (28.1 and 17.1%, respectively) [24];

- The frequency of SCD related to the 3rd type of MI in Russia corresponds to the level of 450 – 600 thousand, in the world about 3 million with a survival rate of no more than 1% [37; pp.42-47, 94; p.845-884];

- The pre-hospital mortality rate from MI reaches 80% [5; p.102, 6; p.640-643].

Boytsov S.A. and co-author (2011), Nikulina N.N. and co-author (2010) presented in their publications that the Russian multicenter epidemiological cross-sectional study "Resonance", conducted in 2007–2008. in a number of regions of Russia, showed a high prevalence of sudden coronary death, which occurred in 156 cases per 100,000 men per year and 72 cases per 100,000 women, thus determining the largest proportion (78.3% in men and 64.75% women) women) die from coronary heart disease [4; pp.73-78, 26; p.235-236].

According to Gordeev A.V. (2017), a researcher from Russia, combining the efforts of all areas and departments involved in prevention to implement measures aimed at preserving health and longevity is a very important and necessary "sanogenic factor" in the fight against chronic diseases in older people. Thus, in the Voronezh region in 2014–2017, a regional interdepartmental project "live long" was implemented. The result of the project was an increase in visits to medical institutions for preventive purposes by 18% (compared to the previous year), an increase in the detection of diseases in the early stages (for example, the detection of early forms of cancer pathology increased from 61% to 63.3%), the number of people with newly diagnosed diabetes increased by 16% [10; p.2].

From the studies presented in the literature, it is generally clear that the problem of preserving active longevity is given priority attention both in scientific works and in practical healthcare. It also follows from the literature that if previously this problem worried, first of all, the person himself and / or the medical community, now this problem is increasingly acquiring a clearly defined social, economic, state and national character. Therefore, the gerontological aspects of AMI must be addressed in a comprehensive, interconnected and systematic manner. The highest priority and main thing should be the study of the influence of modifiable risk factors on the development and course of AMI in elderly and senile people. Epidemiological studies and prevention programs based on their results should be widely deployed in various regions of the world, including our country.

Since extensive literature data indicate that "epidemiological shortcomings", "preventive errors", "incorrect and harmful clinical decisions" will negatively affect population health and longevity of the population [12; 263 pp., 14; 816 pp., 27, 65; pp.146-151, 67; p.221].

The world is undergoing a demographic transformation: experts note that today every 10th person is aged 60 years or older. According to forecasts, by 2050, every 5th person will be aged 80 years or older; during the period from 1960 to 1990, the number of elderly people aged 80 years and older in economically prosperous countries of the European Union increased from 5 million to 12 million. Persons over 85 years of age today exceed 20% of the population [19; p.13].

Conducted studies in older people show that elderly and senile age have specific characteristics and are characterized by their "patterns of accumulation of chronic / urgent diseases and their risk factors"

1) Often the disease proceeds covertly and manifests itself in the form of complications [95; p.177-178];

2) The number of diagnosed diseases in the same patient increases with age, CVD/AMI is sluggish and prolonged, often atypical [74; pp.223-228, 96; p.262-270];

3) By the age of 80 years, an average of 8.8 diseases are detected [67; p.221, 80; p.5];

4) One or another drug treatment (data from a pharmacoepidemiological study) is received by 85% of outpatients and more than 95% of inpatients of elderly and senile age [81; pp.53, 85; p.3109];

5) Up to 40% of prescribed medications are prescribed without proper justification [118; p.1375-1382].

Akhunova D. and co-author studied the features of the clinical course of MI in old age. 41 patients with AMI aged 60–84 years were observed and it was confirmed that the features of the course of MI include a decrease in the intensity of the pain syndrome, frequent sudden manifestations, rhythm disturbances, the

development of shock, the frequent absence of hyperphenemia and manifestations of resorption-necrotic syndrome [2; pp.114-115]. Ryzhova T.A. (2013) in her dissertation work studied the features of the clinical course of MI in elderly and senile women. The clinical picture of MI revealed an atypical development of the disease in elderly (31.4% of cases) and senile (65.4% of cases) women. Asthmatic (21.7%) and asymptomatic (37.7%) variants were often observed [38; p.23].

Semitko S.P. and co-author (2009) in clinical material analyzed endovascular treatment in elderly patients (No. = 28; average age 69.4 ± 3.85 years) with transmural AMI in the first 6 hours from its onset. The data obtained allowed the author to believe that the method of X-ray endovascular surgery is the method of choice in the treatment of high-risk elderly patients. Since the effectiveness of primary transmural angioplasty was 96.5% and the result was unsatisfactory in only one case [41; pp.34-38]. Kokov A.N. and co-author (2018) in patients with coronary artery disease, body mass index (BMI) and waist to hip circumference ratio (WC/HR) were calculated. The prevalence of obesity in terms of the volume of visceral adipose tissue (VAT) in the group of patients with coronary artery disease was 70.4% in the comparison group (persons without coronary artery disease) - 43.8%. The prevalence of the phenomenon of obesity according to morphometry using MSCT results significantly exceeds the prevalence of obesity verified using BMI in both groups. The use of the volumetric indicator of VAT allows us to most reliably determine the group of people with visceral obesity [16; pp.99-103].

In the work Tukish O.V., Okrugin S.A. and co-author (2016) presented the results of a study of the epidemiology of AMI in the resident population over 60 years of age in Tomsk (Russia), conducted in 2008 – 2009. The study was conducted according to the methods of the WHO program "Register of Acute Myocardial Infarction". It has been shown that among the population of Tomsk of the specified age, morbidity and mortality from AMI are higher than among the younger population. Morbidity and mortality rates in the male population are higher than in women in all age groups, except for the population over 80 years of

age. High hospital mortality was detected. Researchers have found that the severity of the epidemiological situation in relation to AMI is determined by the frequency of development of this pathology among the population over 60 years of age, which indicates the need to change the strategy to improve care for patients with AMI. Noting that according to WHO, the number of people over 60 years of age is growing rapidly, while the size of the population 15-59 years old is also rapidly declining in all countries. Therefore, studies devoted to the study of population patterns of AMI development in dynamics and the development of aspects of its prevention among the population are promising and in demand [45; pp.123-127].

Yakovlev V.V. and co-author (2017) in 135 elderly patients who had suffered an MI, presented data on structural and functional changes in the heart. Elderly people initially have a lower ejection fraction (EF), systolic function is less pronounced than diastolic function, left ventricular dilatation is more common, and the thickness of the left ventricle is greater. In general, anterior location of Q-MI is more common in more affected patients. An important conclusion was that the volume of treatment for elderly patients, both during acute MI and during certain periods of observation, should not be less than for younger patients, despite the principles of emergency prevention, including gerontological "minor intervention" , because is an aggravating factor in the development of CHF [52; pp.76-80].

In our opinion, a very necessary, revealing and modern study was carried out by researchers Renilla A et al (2013) on 27841 elderly patients from Apulia (Italy) using telemedicine technology. The study examined whether telemedicine technology used in the public system improves emergency medical care. The quality of home diagnosis was assessed for AMI among older patients, often characterized by higher rates of atypical presentation. Patients telephoned emergency medical services and underwent a home cardiogram. The data was transmitted via mobile telephone to a telecardiology center operating continuously (24/7). 39% of patients had chest or epigastric pain; an atypical manifestation in elderly patients over 70 years of age was identified in 32%; the detection of atypical manifestations of AMI, thanks to telecardiology, increased from 9.2% at

the age of 60-69 years, to 25.6% in the group of 70-79 years, to 35.2% at the age of 80-89 years and to 46.1 % of those examined were over 89 years old [103; p.146-151]. This work convincingly shows that telecardiological ECG diagnostics at home can significantly help to avoid errors and delays in diagnosing AMI in elderly and senile patients.

Hua Cui et al (2010) conducted a large-scale study to examine the effects of in-hospital incidence of organ failure on the prognosis of AMI in 2535 elderly patients of different ages. It has been established that the number and degree of in-hospital complications in elderly patients with AMI increase with age. Cardiac arrhythmia is a major complication in elderly patients. For patients aged 60-79 years, these researchers said it is more important to prevent and treat cardiogenic shock to improve outcome in the 60-79 year group. In very old people ($\geq$ 80 years) with AMI, it is important to prevent sudden death [82; p.295-298].

This study logically confirms that in recent decades the demand for cardiovascular prevention has been increasing and it is progressing in the subgroup of patients with AMI belonging to this age group [38; p.23]. Judging by the results of this work, another important conclusion: elderly and senile age is the most involved and independent risk factor for the development of arrhythmias in patients with AMI. Dazhi Deng et al (2018) conducted a prospective, non-randomized observational study of patients with symptoms of acute chest pain who presented to the emergency department at the People's Hospital of Guangxi Zhuang Autonomous Region (China). Research has shown that elderly patients with AMI and chest pain syndrome presenting for ER are poorly informed about their physical condition and compliance with medications. They believe that they should improve public awareness of AMI, including early symptoms, risk factors (including pharmacoepidemiological), emergency measures and treatment of concomitant diseases [70; p.1017-1029].

As is known, IHD, including AMI, is a multifactorial disease in which inflammation plays a central role. This scientific issue was studied as a priority problem for AMI in elderly patients in the work of Tang - Meng GuO, Bei Cheng

and Li Ke et al (2018). It was found that elderly patients with ST-segment elevation MI had a significantly higher MLR than patients with unstable angina and stable angina. The MLR (neutrophil to lymphocyte ratio) or CRACE score was significantly higher in the death group than in the survivor group. The researchers concluded that increased MLR is a potential predictor of in-hospital mortality in elderly patients with AMI [109; pp.354-359]. Previous epidemiological and randomized clinical trials suggest that supplementation with marine very long chain n-3 polyunsaturated fatty acids (n-3 PUFAs) is cardioprotective, but these results are inconsistent. The fact is that the population, sample size, type of supplement, type of endpoint varied greatly between studies.

Kristian L., Ingebiorg S. et al (2016) presented the design of the OMEMI study (fatty acidsn-3 PUFAin elderly patients with MI). This study was designed as a randomized, placebo-controlled, double-blind, multicenter trial. This included patients aged ≥ 70–82 years with sustained AMI. Sample size: 1400 patients with follow-up for 2 years. Addition to modern therapy Pikasol Axellus AS, Norway, 3 capsules (1.8 g eicosapentaenoic acid + docosahexaenoic acid) per day reduced the occurrence of major cardiovascular events from AMI. It should be emphasized. That the OMEMI study is the first to evaluate n-3 PUFAs on CVD and mortality in high-risk older adults with a history of AMI [88; p.4945720].

According to various researchers, the modern clinical course of AMI was characterized by the following features:

• Often develops at rest (63%), without previous events; in other cases, MI was preceded by physical activity (65%), emotional stress (16%) and acute illness (12%) [66; p.1219-1223];

• Cardioembolism causes about 3% of all MI, and cardioembolic MI in 73% of cases was caused by atrial fibrillation with inadequate anticoagulation [69; p.241-250].

AMI remains a serious pathology that continues to claim the lives of people/patients. According to E.V. Shlyakhto (2000) in 2016, the mortality rate from CVD in the Russian Federation was 615.7 per 100 thousand inhabitants,

including from IHD - 326.7 per 100 thousand inhabitants and from AMI - 42.7 per 100 thousand. residents of Russia (including children). The hospital mortality rate was 14.9% [14; 816 p.]. This circumstance gives rise to concerns not only among demographers and sociologists, but also the medical community, as it raises questions of care for the elderly population in society and modern science, especially preventive medicine, should pay attention to this population group first of all. Muromtseva G.A. and co-author (2016) conducted a survey of a representative sample from the unorganized population (8334 people) of 13 regions of Russia and found that major ECG changes, such as previous MI and symptoms of arrhythmia, are more common in elderly men than in women, and in the latter more often myocardial ischemia (ST-T disturbances) occurs [25; p.711-717].

Other researchers also draw the attention of specialists to the need for careful attention to ECG - disorders that have an unfavorable prognosis in patients of retirement age [68; pp.21-28, 97; p.727401, 102].

Mortality from CVD varies in different countries and is: according to Shalnova S.A. and co-author (2012) in the USA – 32.3% [58; p.6-11], according to Rosstat in Germany - 41.3% [111], according to Roger VL et al (2011) in France - 27.4% [105; pp.18-209, 106; p.3-220], in the Republic of Kazakhstan – 58.2% and in the Republic of Uzbekistan – 58 – 60% [1; p.61-63].

Almost 85% of cardiac deaths, according to WHO, were the result of an anginal attack and stroke [8]. Not the least place in the development of these conditions and their consequences is occupied by HPC [17; p.27-33], the share of SCD in mortality from CVD is 25% [98; 155 pp.].

Summarizing the literature data, we note that issues of epidemiology and prevention of MI are presented in more than 29 large modern studies conducted in non-CIS countries. Such statistics allow us to conclude that modern researchers are increasingly presenting different, population-based and preventive views on the problem of AMI, especially in older people, supported by scientific observational and epidemiological studies and practical experience. There are two main

strategies to reduce the incidence of MI and mortality from it [9; pp.10-15, 11; pp.5-8, 39; p.23, 72; pp.119-177, 84; p.1255-1259].

The first of them is aimed at correcting risk factors through the implementation of educational preventive programs, teaching procedures in the event of the development of emergency conditions and the formation of a healthy lifestyle.

The second strategy is aimed at improving clinical examination of the entire population.

It is obvious that in our century the life expectancy of the planet's population has increased and, accordingly, the proportion of elderly and senile people has increased. According to the scientific data presented by modern researchers, this has led to an increase in the prevalence of CVD/AMI and mortality from them [92; pp.948-954, 93; pp.119-124, 94; p.845-884].

One of the "main" reasons for the increase in mortality is the weakened attention to the prevention of CVD/AMI and their risk factors among the population [108; pp.23-29, 110; p.118-125], detection of diseases at later stages [112, 113; pp.1046-1056, 116; p.504-518]. It is predicted that if this trend continues, that is, a passive attitude towards screening and prevention of CVD/AMI, then by 2030, even in the most developed countries of the world, the prevalence of CVD is expected to increase by 9.9%, and this will lead to an increase in direct costs for these diseases by 200%, and indirect – 60% [83; pp.933-944]. On the contrary, in countries where there is high "medical" awareness and motivation for prevention, there is a decrease in mortality from all causes, including from AMI/CVD [120; pp.1837-1847]. In Finland, thanks to the implementation of the Finnish Prevention Model, mortality from IHD decreased by 75% [89; pp.764-773]. Therefore, the need for epidemiological and preventive research on AMI/CVD in this century is enormous. This is a proven scientific truth, not a catchphrase.

CHAPTER II. MATERIAL AND METHODS OF RESEARCH

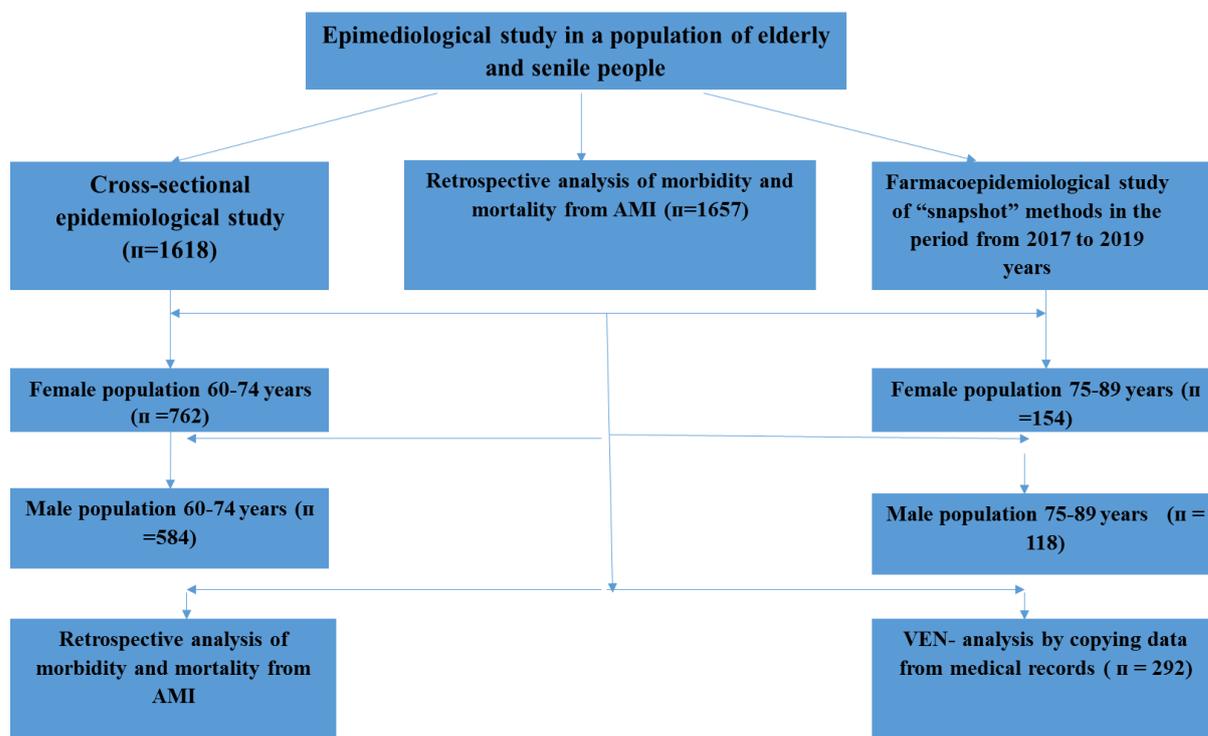## §2.1. Characteristics of the epidemiological study and the surveyed population

The epidemiological study of AMI is of a scientific and practical nature and was carried out among the unorganized population (men and women aged 60-89 years at the time of the survey), living in the territory served by ten city clinics of Bukhara, examined according to a single standardized program to identify AMI and its risk factors development, using WHO recommended methods. All participants who gave informed consent were randomized by gender, territorial (city clinics) and age. Exclusion criteria: the presence at the time of the study of acute or exacerbation of chronic mental illnesses, as well as infectious diseases. A one-time epidemiological study of a representative sample of the elderly and senile population was carried out. The selected objects, as well as the scope of the study, met the requirements of epidemiological work [WHO, 2014; VNOK, 2011]: population migration is minimal, the number of elderly and senile population subject to epidemiological survey is sufficient to ensure the statistical reliability of the study results; The survey area is well connected by transport with the screening center, the objects are not involved in other population studies, the elderly population selected for the screening survey is representative of the given locality of Bukhara, and verification of the subjects through the central address bureau did not present any difficulties. A total of 1132 people were examined (men – 513 (55.2%), women – 619 (44.8%)).

Using data from official health statistics of the Bukhara region for 2015-2019, a retrospective analysis of morbidity and mortality from myocardial infarction among the male and female population of elderly and senile age was carried out. Mortality from MI was assessed by gender and age. The number of cases of MI and subsequent deaths was analyzed in absolute and percentage terms. All medical death certificates issued during the years mentioned were reviewed. From 2015 to 2019 causes of death from AMI on death certificates were coded using International Classification of Diseases and Related Health Problems, 10th

Revision (ICD-10) codes. Directions of changes in mortality rates from AMI in 2015-2019. were analyzed by logarithmic regression using the MS Office Excel statistical analysis program. Regression coefficients multiplied by 100 are presented as average annual changes in indicators. A retrospective analysis of the medical records of 292 elderly and senile patients treated for AMI in the period from 2017 to 2019 was carried out. A retrospective pharmacoepidemiological study using the "snapshot" method was carried out by copying data from the medical records of the departments of cardiology and cardiac intensive care of the Bukhara branch of the Republican Research Center for Emergency Medicine of the Ministry of Health of the Republic of Uzbekistan into a specially developed "Pharmacoepidemiological map". The criterion for inclusion of the card in the analysis was the diagnosis: acute myocardial infarction with and without ST segment elevation, complicated and uncomplicated. According to the data obtained from the cards, a quantitative and qualitative analysis of the pharmacological history and pharmacotherapy of patients by doctors from emergency cardiology departments was performed - frequency analysis, VEN analysis (for a qualitative assessment of the validity of the use of pharmacotherapy). When conducting VEN analysis, the methodology of I.R. Mavlyanov and F.E. Nurbaev (2018) was used using two approaches - expert (assessment of significance from the perspective of a specific disease and formal (checking for compliance with regulatory documents - the list of essential medicines, approved drugs Ministry of Health of the Republic of Uzbekistan). The expert method of dividing drugs into groups implements the principles of evidence-based medicine: a proven effect that allows a drug to be classified in group "V" is the results of reliable clinical trials; drugs with proven effectiveness are classified in group "E" if in case of AMI. indications for their use are relative, and to groups "IV", if it is contraindicated or there is no evidence of its effectiveness (Nurbaev F.E., 2018 (V-vital, necessary to save and maintain the life of elderly patients with AMI,). E-drugs necessary for treatment, but withdrawal of which does not lead to a threat to the life of the patient with AMI,N - secondary drugs or drugs with questionable clinical recommendations for the management of

patients with AMI [recommendations of general specialists in emergency cardiology of the Russian Federation, 2014; ESC/EACTS, 2018]. The sample was based on the total number of elderly people in the surveyed region of Bukhara (the population living in the territory served by all city clinics), from which a selection was made, the volume of which was 10% of the number of elderly (60-74 years old) and senile (75 years old) residents of both sexes -89 years) age. In order to ensure an equal probability of each name in the list of elderly and senile residents being included in the sample, the random number method was used, and A.B.'s table of random numbers was used. Hill (1958).

As can be seen from Figure 2.1, the study provided the necessary volume and population objects to assess epidemiological conditions, epidemiological situations in relation to AMI and ensure the quality of pharmacoepidemiological analysis in patients with this pathology. In creating the methodology and design of the epidemiological study, forming a sample and training personnel for work, the recommendations of the WHO (2014) and the State Research Center for Preventive Medicine of the Ministry of Health of the Russian Federation and the All-Russian Scientific and Cultural Organization (2011) were used.

Rice. 2.1 Characteristics of the epidemiological study.

The total population of the city of Bukhara aged 60-89 years was 16,180 people; random 10% samples were formed in both population groups, amounting to 702 men and 916 women, respectively. Specifically, there were 584 men aged 60-74 years and 762 women, 118 men aged 75-89 years and 154 women. Of these, 74 patients did not participate because they died or moved to another city, the remaining 1544 patients participated in our study. Of the 1544 patients, 47 were undiagnosed, 1132 patients were diagnosed with cardiovascular disease, and the remaining 362 patients were diagnosed with other chronic non-communicable diseases. Of the 1132 patients with cardiovascular diseases, 513 were men and 619 women.

§2.2. Research methods.

The study provided the state-of-the-art level of standardized, unified and evidence-based examination. Questionnaire, biochemical, clinical and instrumental methods were used.

The WHO questionnaire (WHO STEPS Instrument Question-by-Question Guide) was used, which included identifying passport data, personal and family history information about socio-demographic status. Information was recorded to identify angina pectoris, previous myocardial infarction, intermittent claudication, information about risk factors: smoking, alcohol consumption, past illnesses, eating habits, physical activity, drug abuse, hypertension, diabetes, stress and obesity (overweight).[3]

Methods for studying biochemical and modifiable risk factors for AMI. Total cholesterol (in mol/l) and glucose (in mol/l) were determined; to determine the level of cholesterol and glucose in the blood serum, blood was taken on an empty stomach 12-14 hours after the last meal. Determination of cholesterol

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[3]Yuldashev R.N. //Dissertation of Candidate of Medical Sciences, 2009

and glucose levels was carried out using a rapid test. Total cholesterol levels of more than 5.0 mmol/l were taken as hyperglycemia, and glucose levels of more than 6.1 mmol/l were taken as hyperglycemia.

Other risk factors were identified and assessed based on generally accepted international recommendations (WHOK, 2011; WHO, 2014): smoking - the presence of this risk factor was recognized if at least one cigarette was smoked during the day; alcohol consumption – in the case when the subject noted the use of alcoholic beverages at least once a month; low physical activity – recorded if the subject was engaged in physical labor or physical activity for less than 2 hours per week; · overweight (BMI) was recognized with a body mass index ≥25 kg/m2, obesity – with ≥30 kg/m2.

Dietary habits of the population of elderly people (calculation of consumption of fruits and vegetables were studied according to the method proposed by specialists from the State Research Center for Food and Drug Administration and VNOK (2011): for each surveyed, the average consumption (M) of fruits and the average consumption of vegetables (grams per day) were calculated separately: 1) for persons consuming product daily: M = grams per dose X frequency of intake per day; 2) for persons consuming the product several times a week M = grams per dose X frequency of intake per week /7; 3) for persons consuming the product several times a month: M = grams per dose X frequency of intake per month /30; 4) for persons consuming the product several times a year:

M = grams per dose X frequency of use per year/365. The criterion for NPOF was their consumption on average of less than 400 g per day.

During the study, physical (inspection, palpation, percussion, auscultation) and clinical, as well as special (coronary angiography, magnetic resonance imaging, echocardiography - selectively, according to indications) examinations were carried out.

Instrumental research methods. All subjects underwent an ECG in 12 standard leads at rest, blood pressure measurements and anthropometric studies. The diagnosis of IHD/MI was made on the basis of strict and non-strict ECG

criteria by coding according to the Minnesota code (MC) as follows: previous documented MI - I,1-I.2.7 according to MC; ·painless form of angina - 4.1-4.2. and 5.1. - 5.2 without 3.1. and 3.3. according to MK; ·possible previous MI – I.2.8-I.3 according to MK; possible ischemia – 4.3, 5-3 according to MK; arrhythmic form of IHD/MI -6-1, 7-1, 8-3 according to MK; ischemia with left ventricular hypertrophy -4-1, 4-2, 5-1, 5-2 with 3.1 and 3.3.

Blood pressure measurements were carried out twice with an interval of 2 minutes on the right arm of the subject in a sitting position, after a 5-10 minute rest; the average of two measurements was taken into account. A SBP value of at least 140 mmHg was taken as an elevated blood pressure (AH) level. or DBP of at least 90 mmHg, regardless of the use of antihypertensive drugs.

Excess body weight was determined using the weight/height m2 index (Quetelet index). As noted above, BMI was determined when a BMI value was at least 25 kg/m2, while obesity was indicated by a BMI ≥30 kg/m2. We carried out anthropometry as follows: height was determined in the "standing" position with an accuracy of 0.5 cm (without shoes), and the heels, buttocks and shoulders of the subject should touch the measuring pole, the head was positioned so that the line connecting Traqus and the eyes was horizontal. Body weight was measured without shoes on standard scales, with an accuracy of 0.1 kg.

The diagnosis of AMI was established on the basis of the clinical picture and electrocardiographic criteria, the characteristic clinical picture of MI and at least one of the following criteria: 1) characteristic changes on the ECG, 2) acute blockade.

Statistical methods. Statistical analysis of the data obtained in the dissertation work was carried out using the statistics 6.0 program. (stat soft inc). In the case of a normal distribution of variables, the Student t-test was used to determine the differences between two average values; in the case of an abnormal distribution, the Mann-Whitney test was used; the significance of the prevalence of MI risk factors was assessed using S2; correlation analysis was performed by calculating the Spearman correlation coefficient (r). This method of statistical

analysis is widely used by researchers in population studies (Dehar V.V. et al., 2016). Differences were considered statistically significant at p < 0.05, 95% confidence interval.

CHAPTER III. RESULTS OF OWN RESEARCH

§3.1. Peculiarities of the incidence of acute myocardial infarction among the unorganized elderly and senile population (using the example of Bukhara)

Observational epidemiological studies in each region reveal not only general population patterns, but also a number of specific features of the spread of acute myocardial infarction and its "end points," which is important both for the development of clinical infarction and for planning and implementing effective innovative prevention of AMI.

In this regard, this study is devoted to the development of a population strategy in the regions, on which the development of measures for the early prevention of AMI would be based [21; pp.218-219, 22; pp.33-35, 58; p.6-11]. Therefore, the features of the spread of AMI among the unorganized elderly population (ELP) and senile population (NSP) were studied using the example of the city of Bukhara.

Table 3.1 provides data on the epidemiological situation in relation to CVD of chronic diseases and their "end points" among NIPs and NSWs. It was shown that only 2.9% of the examined elderly people do not have chronic disease. 97.1% have chronic diseases and "end points" from these pathologies. Mortality is mainly observed at levels of 4.6% (aged 60 - 89 years) and 4.2% (aged 60 - 74 years old) and 6.6% (aged 75 - 89 years old). That is, during the year of work with the population, "irretrievable losses" - persons who died in the period after the first invitation was sent out, were characterized by an increase depending on age by 1.4% (p <0.05).

Table 3.1

Population characteristics of the epidemiological situation among the elderly and senile population.

Population contingent	Statistical indicators	Age groups of those examined		
		60-74 years	75-89 years	60-89 years
Population without pathology	п	39	8	47
	%	2,9	2,9	2,9
Population with endpoints	п	56	18	74
	%	4,2	6,6	4,6
Population with CVD (1)	п	933	199	1132
	%	693	73,2	70,0
Population with other disease (2)	п	318	47	365
	%	23,6	17,3	22,5
Total population	п	1346	272	1618
	%	100,0	100,0	100,0
Statistics, differences by t-test (p)	<0,05	-	-	-
	<0,01	1-2	-	-
	<0,001	-	1-2	1-2

Established data indicate a high prevalence of CVD (22.5%). The highest prevalence of CVD occurs among elderly people (73.2%), in the population of 60-74 years old their frequency is determined at 69.3%. With age, their frequency increases by 3.9%. Other diseases occur with a significantly lower prevalence compared to CVD (22.5%; $p < 0.001$). Chronic diseases (except for CVD) are most common among people 60-74 years old (23.6%), in the age group 75-85 years old their frequency significantly decreases (17.3%, $p < 0.05$). Table 3.2 presents data on the epidemiology of MI in the studied population.

Table 3.2

Comparative assessment of the prevalence of myocardial infarction among different classes of CVD in an elderly population

CVD classes	Statistical indicators	Age groups of those examined		
		60-89 years (n=1132)	60-74 years (n=933)	75-89 years (n=199)
AIM[1] (1)	n	94	33	61
	%	8,3	3,5	30,7[xxx]
CI angina pectoris(2)	n	346	311	35
	%	30,6	33,3[x]	17,6
ИМз[2](3)	n	109	91	18
	%	9,6	9,8[н.д.]	9,0
Hypertonic disease	n	576	491	85
	%	50,9	52,6[x]	42,7
ХРБС(-)	n	7	7	14
	%	0,6	0,8	1,4[x]
Statistics, differences by t-test (p)	<0,05	4-2	4-2,3-1	1-2,3-1,4-1
	<0,01	4-3	4-1	1-3,4-2
	<0,001	1-5,4-1,2-1	1-5,4-1,2-1	1-5,2-5

Note: here and in other tables, the significance of the differences is indicated relative to the age group 60-74 years; •AMI1 - acute, from 6 hours to 7 days from onset; • MIz2 - acute or repeated, healing and healed MI; •CRHD - chronic rheumatic heart disease.

According to the data obtained (Table 3.2 and Fig. 3.1), in the examined population 60-89 years old, the prevalence of MI and other CVDs was: AMI1 - 8.3% (in 60-74 years old - 3.5% and in 75-89 years old 30. 7%; p <0.001), coronary artery disease angina - 30.6% (including in 60-74 years old - 33.3% and in 75-89 years old - 17.6%; p <0.005), MIz2-9, 6% (including in 60-74 years old - 9.8% and in 75-89 years old - 9.0%; p <0.005), hypertension - 50.9% (in 60-74 years old - 52.6 % and in 75-89 years 42.9%; p>0.05) and CRBD - 0.6% (in 60-74 years 0.8% and in 75-89 years - 1.4%; p <0 .05. Thus, the data obtained confirm that all forms among the elderly population occur with a frequency of 17.9% (in the group of elderly people - 13.3% and in the elderly population - 39.7%; p <0.001). With age, the incidence of MI increases by 26.4%, i.e., 3.5 times (p <0.001). When comparing our results with old literature data, it should be emphasized that the prevalence of AMI was relatively low. Moscow (Russia) and Berlin (Germany), as the researchers indicate, the incidence of AMI cases was

noted at levels of 54% and 47%, respectively.[4]However, our data were identical to the results obtained in the modern population in the CIS [108; pp.23-29].
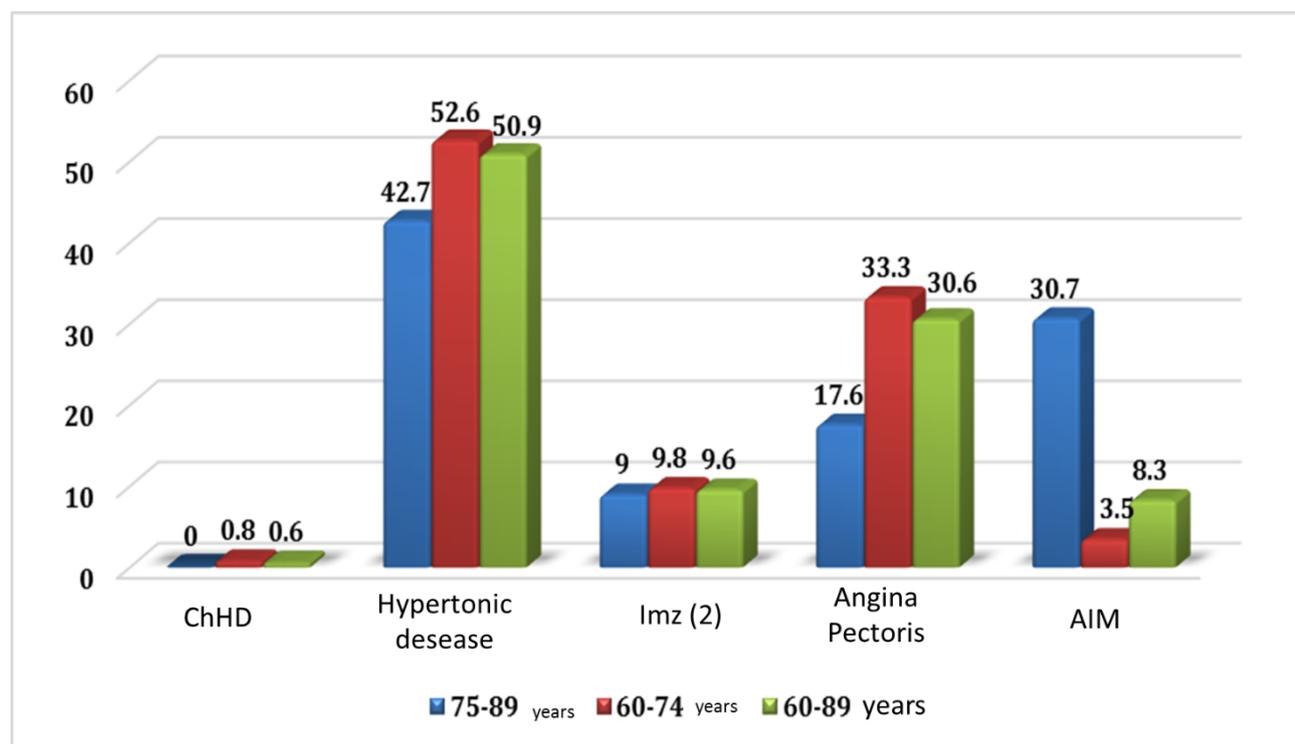

Rice. 3.1 Distribution of patients with myocardial infarction and its comparative frequency among the elderly and senile population with various CVDs (in%).

According to modern ideas, there is still conflicting information about the influence of gender characteristics on the incidence of AMI [78; pp.1190-1201, 79]. To date, gender differences in this indicator in patients with MI in the regions of Uzbekistan remain poorly studied. This led to a special analysis in the course of this work, which was the study of gender characteristics of the epidemiology of AMI in populations of elderly and senile ages.

When comparing the study groups, it was noted that men were superior to women in the prevalence of MI: the prevalence of MI was established at 65.5% and 42.3%, respectively, i.e. more by 22.8% or 1.5 times in men (p <0.05). Among women and men aged 60-89 years, the prevalence of AMI 1 was established with a frequency of 21.1% and 50.1%, i.e. with a difference of 29.0% (p <0.01), including in the age groups 60-74 years and 75-89 years, respectively – 1.8 and 5.7% (p

<0.01), 19 .3% and 44.4% (p <0.01), i.e. with a difference of 3.9% and 25.1% depending on age. The prevalence of healing and healed myocardial infarction was detected in the examined women and men of elderly and senile age with a frequency of 21.7% and 15.4% (p > 0.05), i.e. with a difference of – 6.3%; including in the age groups 60-74 years and 75-89 years of women - 11.6% and 10.1% each (p> 0.05); in the groups of men 60-74 years old and 75-89 years old - 7.6% and 7.8%, respectively (p > 0.05), i.e. with a difference of 4.0%, 2.3% and 6.3% in the indicated age ranges of the surveyed population (Fig. 3.2 and Table 3.3).
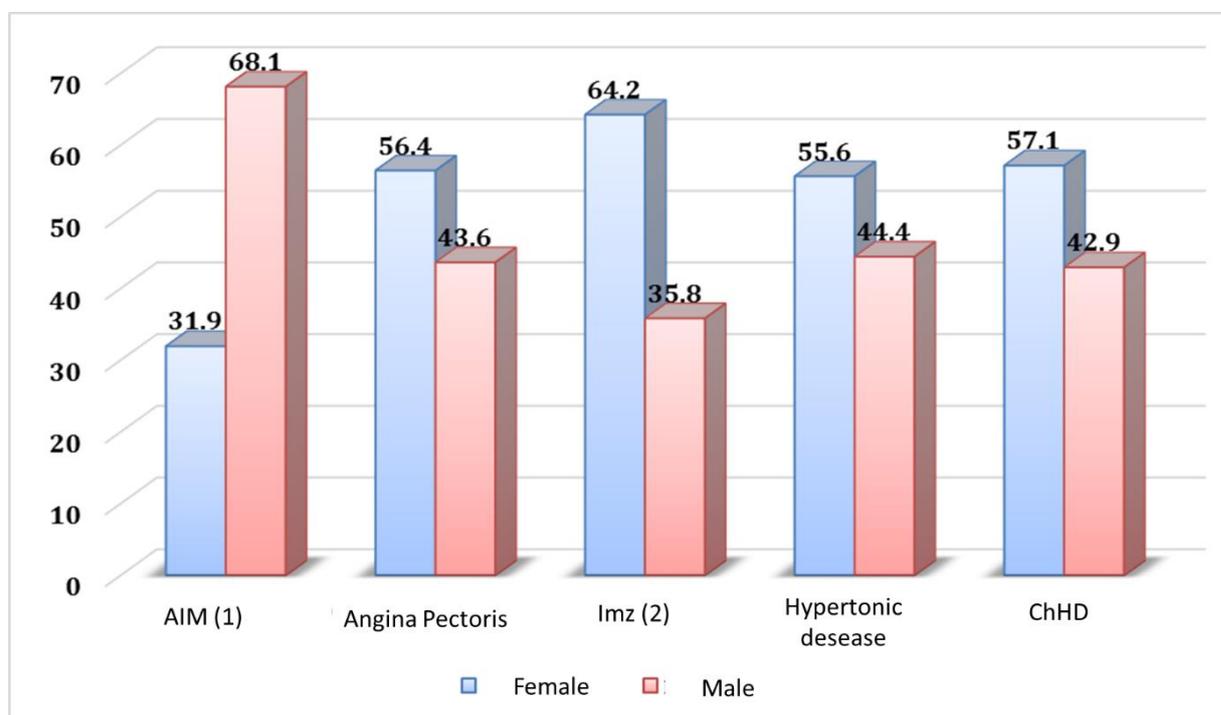
Rice. 3.2 Prevalence of various forms of myocardial infarction and major CVDs among women and men of elderly and senile age (in%).
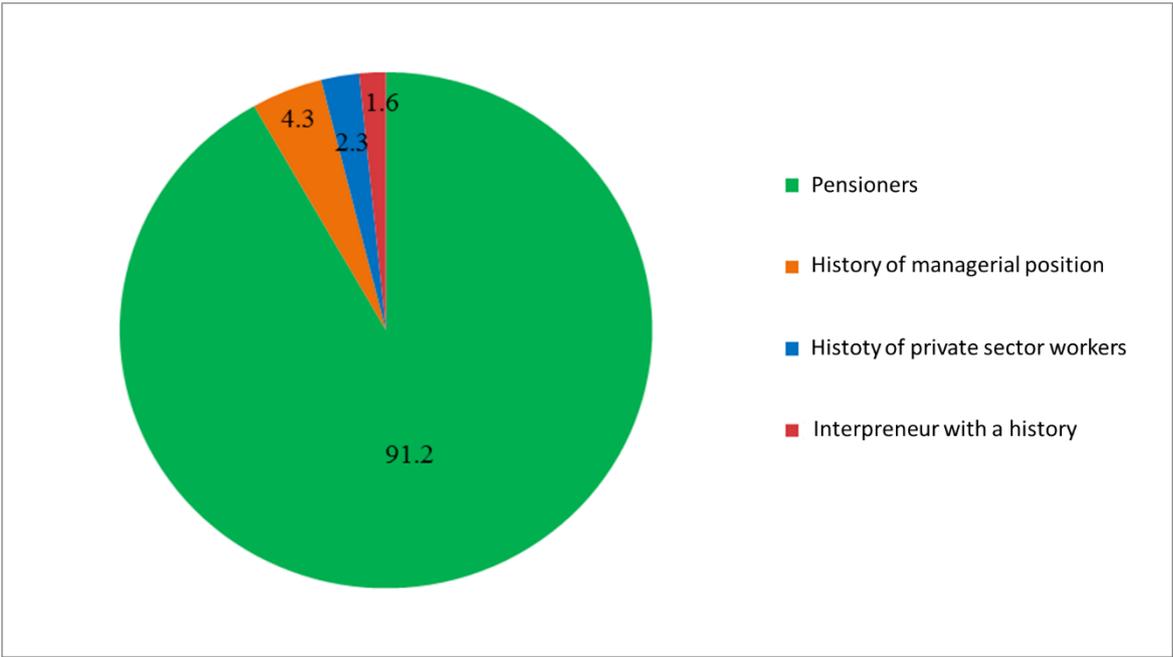
Table 3.3

Gender characteristics of the prevalence of MI among the unorganized elderly and senile population

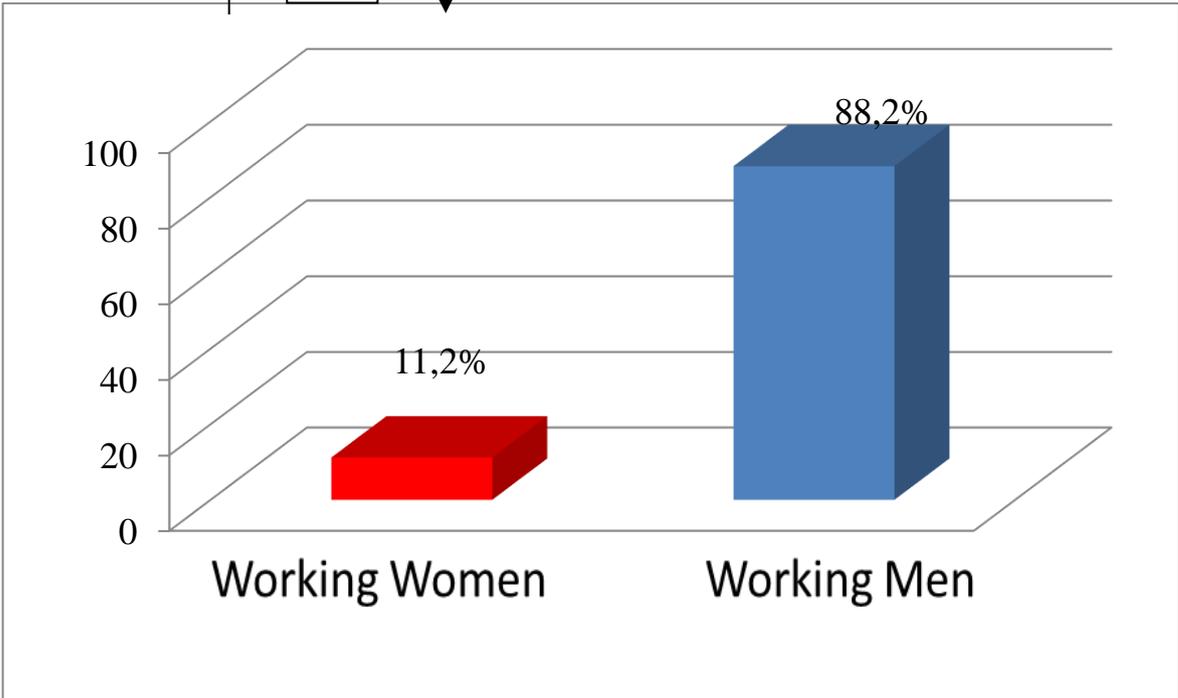| Group examination	Statistical indicators	Female			Male			Gender differences		
		60-74 years (n=510)	75-89 years (n=109)	60-89 years (n=619)	60-74 years n=423	75-89 years (n=90)	60-89 years (n=513)	60-74 years	75-89 years	60-89 years
AMI[1] (1)	n	9	21	30	24	40	64	15	19	34
	%	1,8	19,3^{xxx}	21,1	5,1	44,4^{xxx}	50,1^{xx}	+3,9	+25,1	+29,0
AM3[2] (2)	n	59	11	70	32	7	39	91	18	109
	%	11,6	10,1	21,7	7,6	7,8	15,4	-4,0	-2,3	-6,3
Total IM	n	68	32	100	56	47	103	12	15	27
	%	13,4	29,4^{xx}	42,8	13,3	52,2^{xxx}	65,5^{x}	-0,1	+22,8	+22,7
Statistics, differences by t-test (p)	<0,61	-	1-2	-	-	-	-	-	-	-
	<0,01	-	-	-	-	-	-	-	-	-
	<0,001	1-2	-	-	-	1-2	1-2	1-2	1-2	1-2

Thus, elderly and senile men had higher rates of MI in general and AMI1 in particular. In women, MI2 is more often noted - healing/healed forms of this pathology. The results should be used to assess gender differences in AMI in elderly and senile patients.

The results of this cross-sectional epidemiological study show that in order to more successfully combat the high incidence of MI in elderly and senile people, it is necessary not only to improve the hospital level of medical care, but also to implement appropriate regional preventive strategies among the population. Apparently, late presentation and untimely preventive care determine the occurrence of "end points" from AMI outside hospitals, also in specialized emergency medical care centers in the vast majority of cases. This will be discussed in the following chapters of the dissertation.

A comparative study of the prevalence of AMI in the studied region among various professional groups was of interest to us from a scientific and practical point of view (Fig. 3.3).

Pensioners

History of managerial position

Histoty of private sector workers

Interpreneur with a history

91.2

4.3

2.3

1.6

THE

88,2%

11,2%

100

80

60

40

20

0

Working Women

Working Men

z

THE
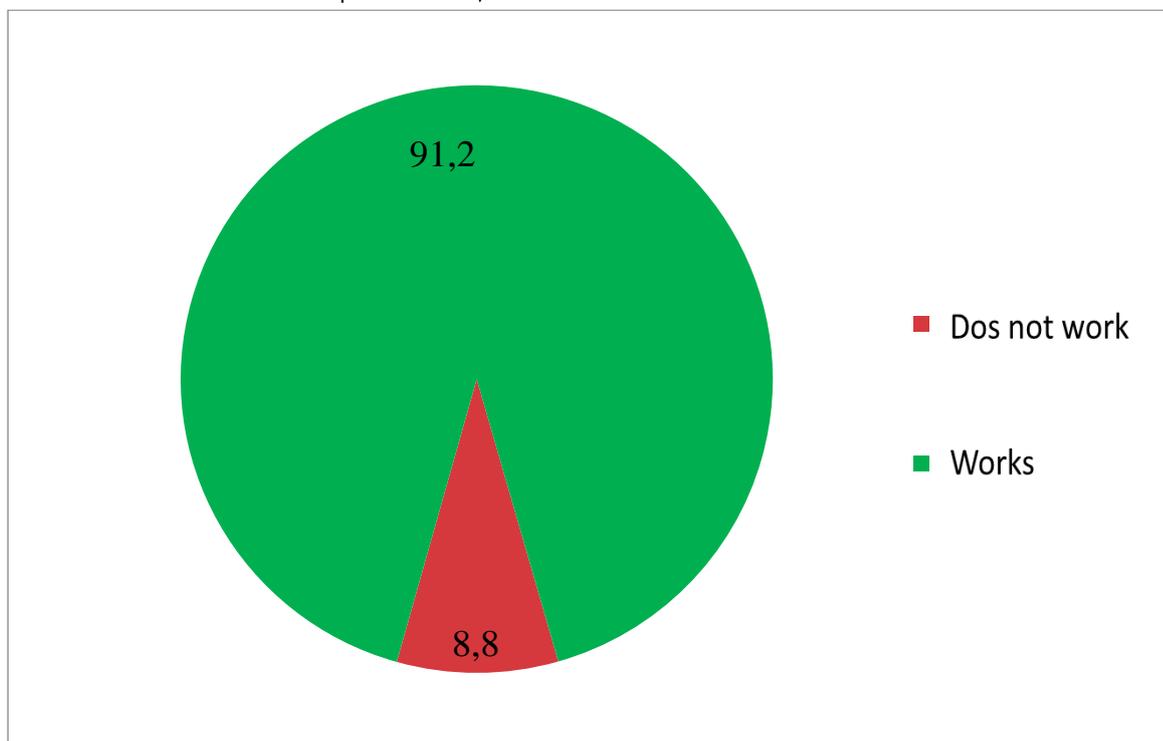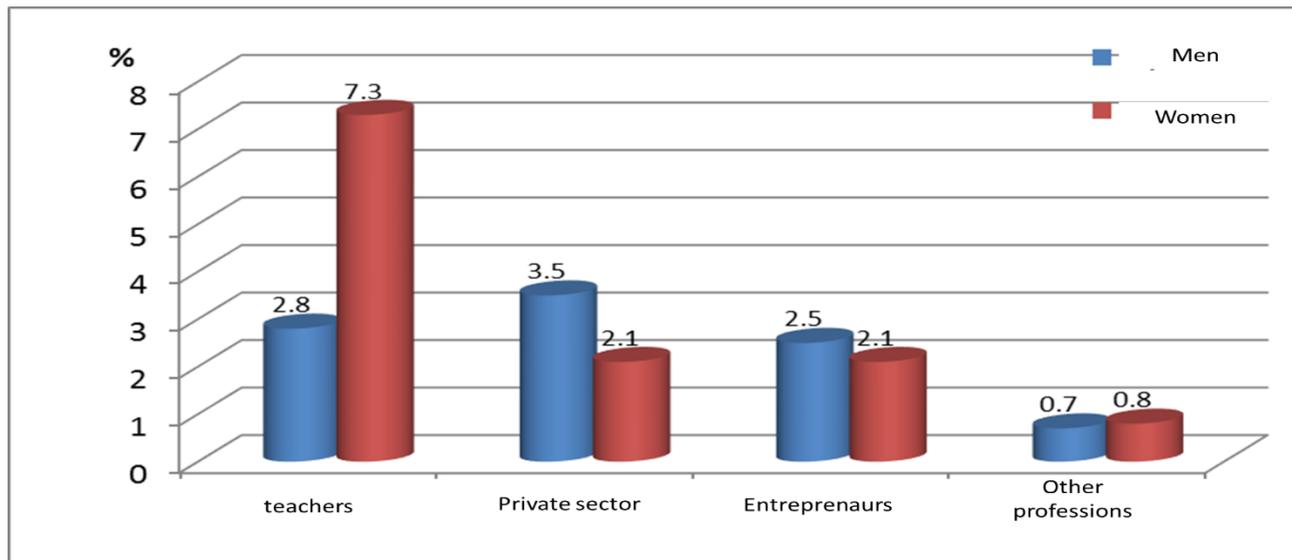
Rice. 3.3. Comparative study of the prevalence of AMI in various professional groups of those examined.

The prevalence rates of AMI among those surveyed, depending on their professions, were: •among workers and non-workers – 91.2% and 8.8% each (p <0.001); • among working women and men – 11.2% and 88.2% each (p <0.001); • among non-working pensioners - 91.2% and working pensioners - 8.2% (p <0.001); • including - among the population of entrepreneurs with a history - 1.6%,

among private sector workers - 2.3% and among the population of managers - 4.3%; • among managers of men and women, 2.8% and 7.3% (p <0.01); • among men and women working in the private sector – 3.5% and 2.1% each (p <0.05); • among male and female entrepreneurs – 2.5% and 2.1% each (p>0.05); • among men and women of other professions – 0.7% and 0.8% each (p>0.5).

These results indicate the need to increase the efficiency of epidemiological studies and differentiated (mass) preventive approaches through active propaganda, improvement to nosological diagnosis and prevention, and growth of its authority both among the elderly and senile population, and among specialists - doctors, researchers. All this should help increase the readiness of the population and practical healthcare to participate in screening activities to prevent AMI among the population of the older age group, especially in the regions of the country.

§3.2. Prevalence and population-prognostic significance of modifiable risk factors for acute myocardial infarction among the unorganized elderly and senile population.

We studied the prevalence of modifiable risk factors for AMI among the unorganized elderly and senile population (poor nutrition, physical activity, smoking, alcohol consumption). Table 3.4 shows data on the prevalence of poor nutrition in the surveyed population.

Table 3.4

Prevalence of poor nutrition among unorganized male and female population with CVD in elderly and senile age

Nutritional pattern	Statistical indicators	Male			Female			Total population 60-89 years
		60-74 years (п=423)	75-89 years (п=90)	60-89 years (п=513)	60-74 years (п=510)	75-89 years (п=109)	60-89 years (п=619)	
LCVF (1)	п	328	62	390	269	59	328	718
	%	77,5^x	68,8	73,1^x	52,7	54,1	53,4	63,4
NFCHSF (2)	п	90	20	110	158	30	188	298
	%	21,2	22,2	21,6	30,9	27,5	29,2	26,3
SL(3)	п	150	26	176	101	17	118	294
	%	35,4	28,8	32,1	19,8	15,5	35,3	25,9
Statistics, differences by t-test (p)	<0,05	3-2	-	3-2	1-2,2-3	1-2, 2-3	1-2,1-3	-
	<0,01	1-3	1-3	1-3	1-3	-	-	1-2,1-3
	<0,001	1-2	1-2	1-2	-	1-3	-	-

Note: • LCVF - low consumption of vegetables and fruits; •NFCHSF - nutrition with foods containing highly saturated fats; •SL - "salt load", with daily consumption of more than 5 g of salt (has the habit of adding salt to cooked food without tasting it).

From the data in the table it follows that among elderly people, the most common dietary disorders are in the form of NPOF (63.4%), PPSvnF (26.3%) and HF (25.9%). A comparative assessment of the prevalence of poor nutrition among elderly men and women in the age groups of 60-89 years showed that, in general, the frequency of POF among men (73.1%) is higher than among women (53.4%); the differences identified were statistically significant (p <0.05). And PPVvnF (21.6% and 32.1; (p <0.05) and HF (29.2% and 35.3%; (p>0.05)) are slightly lower in men than in women.

Among men 60-74 years old and 75-89 years old, NPOF was established with a prevalence of 77.5% and 68.8%, with a difference of 8.4% (p <0.05), nutrition with foods containing highly saturated fats - by 21.2% and 22.2% (p>0.05) and "salt load" - 35.4% and 32.1% (p>0.05), i.e. with a difference of

1.0% and 3.3%, respectively. In the age groups of women 60-74 years old and 75-89 years old, it was revealed that the frequency and prevalence of NPOF was 1.4% lower in the elderly group (52.4%) than among the elderly (54.1%), p >0.05. PPSvnF was registered in 30.9% and 27.5% (p>0.05) and HF – in 19.8% and 15.5% (p>0.05), respectively, in the age groups of women 60-74 years and 75 -89 years old.

Summarizing the data from the above analysis, we can say that elderly and senile residents of the studied region have statistically significantly high rates of poor nutrition - NPOF, PPSvnF and HF. It is necessary to increase the consumption of vegetables and fruits, limiting the diet of foods containing highly saturated fats and table salt. The diet should be varied and include at least 30 types of products, including more than 400 g of vegetables and fruits per day. Of course, as stated in studies, it is necessary that purchased food products have labels indicating their calorie content and nutritional composition [8, 103; p.146-151].

Table 3.5 presents the prevalence of NPA, smoking and UA among women and men.

As it turned out, among people 60-89 years old, the prevalence of NFA was higher in men (93.9%) than in women (88.9%), i.e. this risk factor was determined with a difference of 5.7%. The prevalence rates of NFA in the groups under consideration did not have significant gender differences (p>0.05). The prevalence of smoking was significantly higher in men (19.2%) compared to women (1.1%), i.e. This factor was observed with a gender difference of 18.1% (p <0.001).

When comparing the studied groups of women and men by the prevalence of alcohol use, it was noted (Table 3.5 and Fig. 3.5) that among men there were significantly more people who drink alcohol (30.0%) compared to women aged 60-89 years (p <0.05).

Table 3.5

Prevalence of low physical activity, smoking and alcohol consumption among the unorganized male and female population aged 60-89 years

Risk factor	Statistical indicators	Female (п=619)	Male (п=513)	Total population (п=1132)	P
LPA	п	546	482	1028	>0,05
	%	88,2	93,9	91,5	
Smoking	п	7	99	106	<0,0001
	%	1,1	19,2	9,4	
AC	п	106	154	260	<0,05
	%	17,1	30,0	23,2	

The noted data are consistent with the results of most researchers devoted to the epidemiology and prevention of CVD/AMI [45; pp.123-127, 53; pp.105-119].

Table 3.6

Prevalence of the main epidemiological risk factors for AMI among the unorganized female population depending on age

Risk factor AIM	Statistical indicators	Female 60-89 years		P
		60-74 years	75-89 years	
LPA	п	443	103	<0,05
	%	86,8	94,4	
Smoking	п	7	0,0	<0,01
	%	1,3	0,0	
AC	п	87	19	>0,05
	%	17,0	17,4	

Table 3.6 shows the results of a comparative assessment of the frequency of epidemiological (behavioral) risk factors among the female population depending on age.

The table shows that in the population of women 60-74 years old and 75-89 years old, the prevalence of NFA, smoking and UA is characterized by the following prevalence levels: NFA - 86.8% and 94.4% (p <0.03), smoking - 1 .3% and 0.0% (p <0.01), NFA - 86.8% and 94.4%, respectively (p <0.05). With age, NFA increases by 7.6%, smoking has no upward trend, and UA increases by 0.4%.

A comparative assessment of the prevalence of the noted risk factors for AMI in the male population depending on age is presented in Table 3.7.

Table 3.7

Prevalence of main epidemiological risk factors among men depending on age

Risk factor	Statistical indicators	Male 60-89 years		P
		60-74 years	75-89 years	
LFA	п	392	90	<0,05
	%	92,6	100,0	
Smoking	п	84	15	>0,05
	%	19,8	16,6	
AC	п	119	35	<0,05
	%	28,1	38,8	

A comparative study of the prevalence of NFA, smoking and UA in various age groups of elderly and senile men revealed that the frequency of NFA increases with age by 7.4% from 92.6% (aged 60-74 years) to 100.0% (aged 75-89 years); p <0.05. Smoking was detected with a frequency of 19.8% and 16.6, respectively, in the group of men 60-74 years old and 75-89 years old (p>0.05), i.e. smoking prevailed among older people 60-74 years old. Alcohol consumption was noted by

28.1% of men 60-74 years old and 38.8% of men 75-89 years old (i.e., the frequency of detection of this factor increases with age by 10.7% (p <0.05).

Thus, the data obtained indicate, firstly, the high prevalence of the studied risk factors and, secondly, show the promise of periodic epidemiological studies in relation to pre-nosological diagnosis and prevention of cardiovascular events, in particular acute myocardial infarction in elderly and senile age (Fig. 3.4).
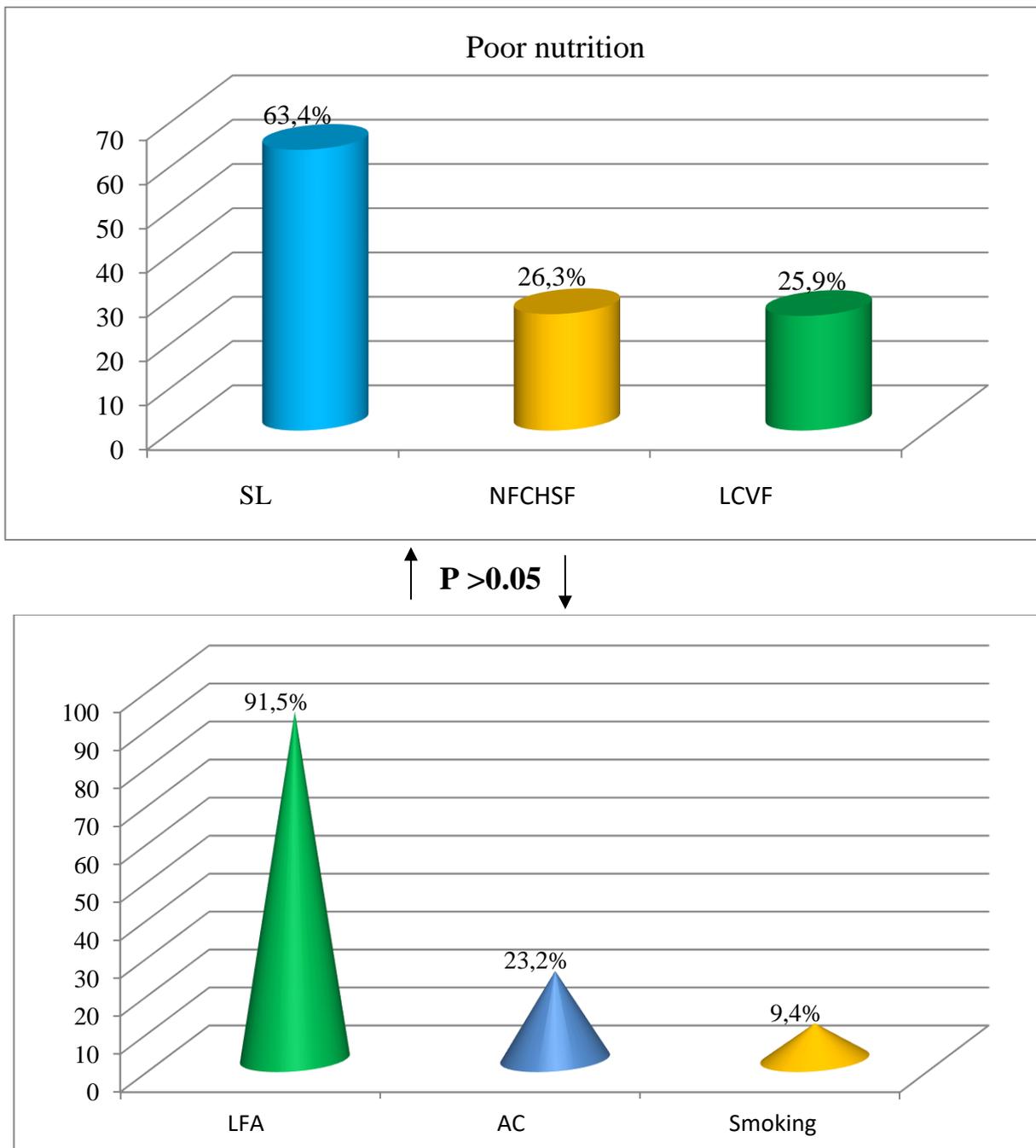
Rice. 3.4. Risk factors for AMI in the elderly and senile population (in%).

It should once again emphasize the importance of primarily non-drug medical measures in relation to AMI, in particular, rational nutrition, physical

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activity, combating smoking and alcohol consumption among endangered groups of the population, i.e. in elderly and senile people. We have to admit the results of modern research that clinical data today do not provide grounds for lifelong drug prophylaxis aimed at the main above-mentioned risk factors for AMI, and experimental preventive studies have not yet provided evidence of the effectiveness and evidence of the safety of long-term drug prophylaxis. Only in cases with stable values of modifiable risk factors can long-term drug prevention of AMI/CHD be considered relatively justified; in senile and elderly people, it should be as intense as possible in its own way affecting regional selected risk factors [Shkhvatsabaya I.K., Metelitsa V .AND. et al.: 1977]. In our study, HF, NFA, smoking and UA, as well as biological and metabolic-endocrine risk factors such as elevated blood pressure, hyperglycemia, hyperglycemia, BMI and obesity. We will talk about them in the next chapter of our work, to which we devoted a separate section of epidemiological research in a population of elderly people.

§3.3. Comparative assessment of the prevalence of biological and metabolic-endocrine risk factors and their relationship with myocardial infarction among the elderly and senile population.

Biological metabolic-endocrine risk factors and cardiovascular diseases are a multifaceted problem of the 21st century, discussed not only in scientific circles, but have become a matter of concern for many countries around the world and the WHO. There is no doubt that these factors are the main causes of acute CVD, including AMI, which determines the high mortality rate among the population [21; pp.218-219, 31, 42; p.19-27].

Therefore, as part of our epidemiological study, we analyzed the population-demographic and socio-preventive aspects of biological, metabolic and endocrine risk factors (hypertension, hyperglycemia, hyperglycemia, BMI and obesity) among the elderly and senile population.

Figure 3.5 shows the frequency of prevalence of these risk factors among elderly and senile men and women.
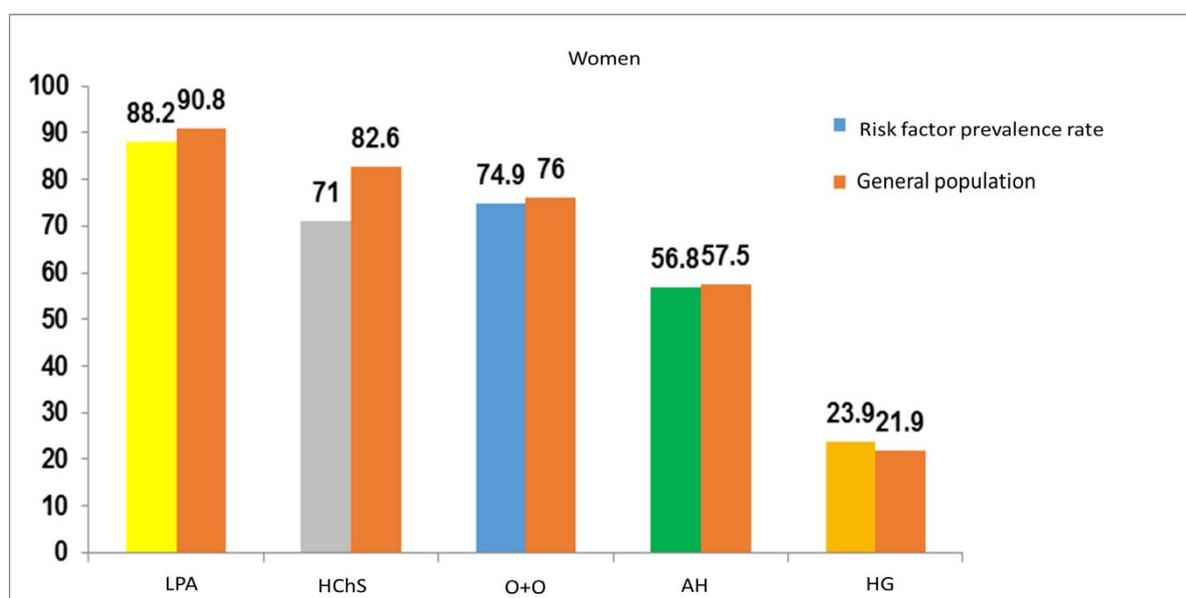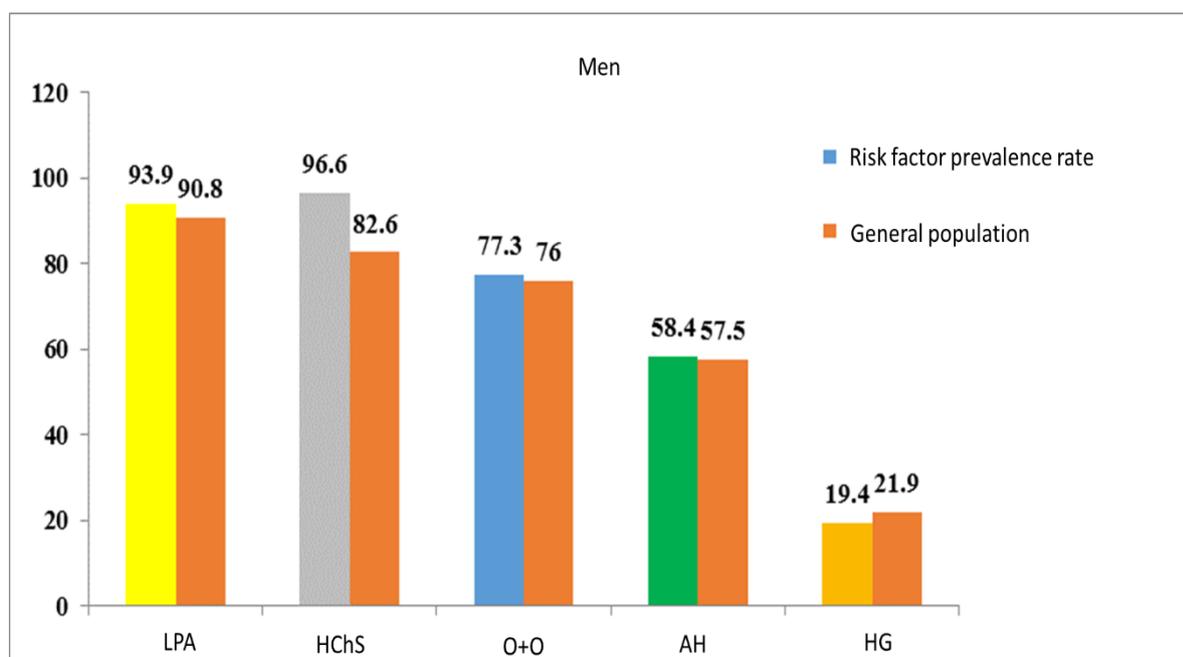
Rice. 3.5. Frequency (in%) of biological, metabolic and demographic risk factors among the male and female population of elderly and senile age.

Note: In men, the prevalence rate of NFA is 93.9*, and the prevalence rate of HCS is 96.6*, * means $p < 0.05$.

Analysis of the prevalence of biological and metabolic-demographic risk factors (BADFR) in the general population 60-89 years old (Fig. 3.6) revealed regional features in the following indicators: hyperglycemia - 21.9%, hypertension - 57.5%, BMI with obesity - 76 .0%, GHS - 82.6% and NFA - 90.8%. As can be seen, a high prevalence of NFA, HCS and IMTO was noted; in comparison with them, HH ($p < 0.001$) and AG ($p < 0.05$) were detected with a significantly lower frequency.

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Simultaneous epidemiological studies in each region reveal not only general population patterns, but also a number of new specific characteristics of the prevalence and formation of risk factors, which is important for planning and carrying out population-based prevention of risk factors, including MADFR.

BODFR is unevenly distributed among elderly and senile men and women. Prevalence of HS: 19.1% in men and 23.9% in women; the difference is not significant ($p>0.05$). Prevalence of hypertension: in the population of examined men 58.4%, in the population of women 56.8% i.e. This BODFR is almost equally common among male and female populations of the studied region ($p>0.05$). Prevalence of IMTO: very similar figures for the prevalence of IMTO were obtained: in the male population - 77.3%, in the female population - 74.9% ($p>0.05$). Prevalence of HCS: the prevalence of HCS in the female population was lower (71.0%) than in the male population (96.6%); $p <0.05$. A higher percentage of newly diagnosed cases of hypercholesterolemia in both groups may indicate less frequent control of cholesterol levels in the Bukhara population of elderly and senile people. The prevalence of NFA (Fig. 3.6) was 93.9% in the male population, 88.2% in the female population, i.e. there were significant differences between the two study populations ($p < 0.05$).

In general, the prevalence of the main risk factors for AMI in the population of elderly and senile men and women was almost equally high (Fig. 3.6). These scientific facts undoubtedly imply the need for a systematic search through epidemiological monitoring for undetected cases of RF and MI in older people.
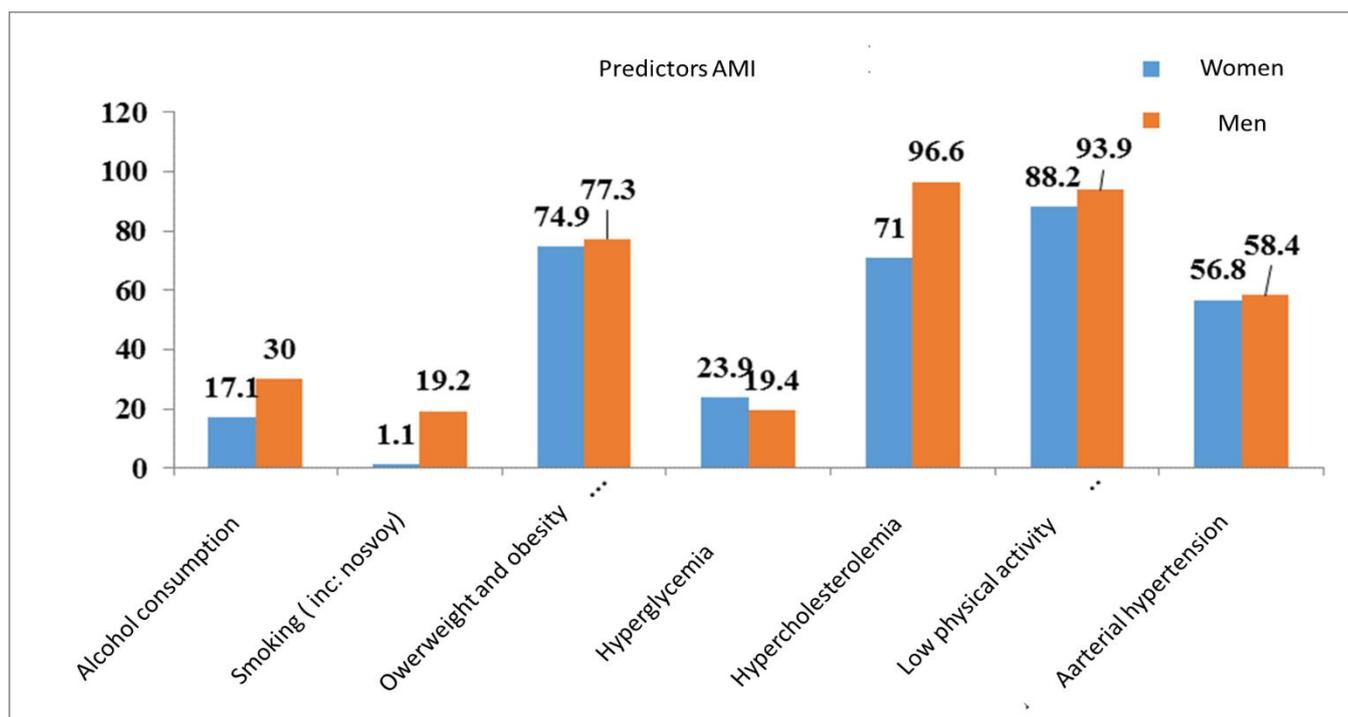
Rice. 3.6. Prevalence (in%) of seven risk factors for AMI among the unorganized population of women and men aged 60-89 years in Bukhara.
* - p <0.05, *** - p <0.001; (96.9 *, 93.9*, 1.1***)

A comparison of the presented data on the epidemiology of risk factors for myocardial infarction indicates a fairly significant difference in the obtained indicators among men and women of elderly and senile age. To a proven extent, this reflects the true epidemiological situation, since our studies were carried out according to unified and standardized criteria for screening diagnosis of AMI and its risk factors.

Next, the relationship between MI and eight risk factors (UA, smoking, IMTO, NPOF, GG, HCS, NFA, AG) was studied in two groups of women and men of elderly and senile age. In Fig. Figure 3.7 shows the prevalence of eight risk factors in two groups of elderly people – with and without MI.
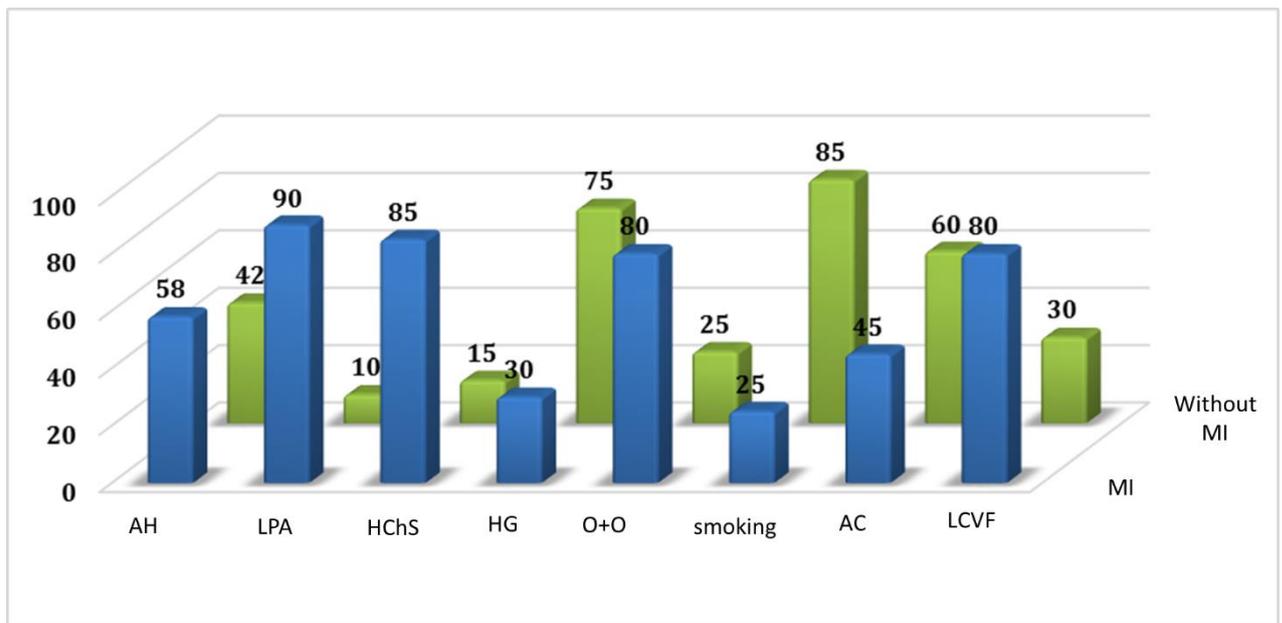
Rice. 3.7. Relationship between AMI and eight risk factors in an elderly and senile population.

As can be seen from the presented pairs of columns expressing the frequency of risk factors in elderly patients with and without MI, HCS occurred with a high frequency in the MI group (92.5% in the presence of MI and 7.5% in its absence; $p < 0.001$) and overweight with obesity (72.9% and 27.1%, respectively ($p < 0.01$). The percentage of prevalence of hypertension is higher in the group with MI (58.7%) than without MI (42, 5%); age Hyperglycemia occurred with a lower frequency in the group with MI (30.5%) than without MI (60.5%). The percentage of smokers was also lower in the population with MI (22.1) than without MI (77.9%). To a certain extent, this is explained by the fact that older people who have had an AMI quit smoking, without any doubt, a risk factor for CVD/MI, this statement was made by epidemiological (prospective) studies [7; p.39, 40; pp.45-48, 51; pp.13-26, 61; p.671-719]. The percentage of alcohol drinkers is also lower in the group with MI (46.6%) than in the group without MI (53.4%). This can be explained by the fact that people who have CHD/AMI stop drinking alcohol.

From Figure 3.7 it follows that low consumption of vegetables and fruits in patients with MI was recorded significantly more often (63.4%) than in people without MI (36.6%); $p < 0.05$. This means that in elderly and senile people, more

frequent monitoring of the rationality of a healthy (sanogenic) diet is especially necessary.

Figures 3.8 and 3.9 show the distribution of eight risk factors (AH, NFA, HCS, HH, IMTO, smoking, UA, NPOF) in groups of women and men of elderly and senile age with and without MI.

From the presented Figure 3.8 it is clear that among elderly and senile women, hypertension, NFA, HCS, IMTO and NPOF are statistically significantly more often represented in the group of people with MI than in people without MI. Thus, hypertension was significantly higher in elderly women with MI (55.8%) than without MI (44.2%); $p < 0.05$.
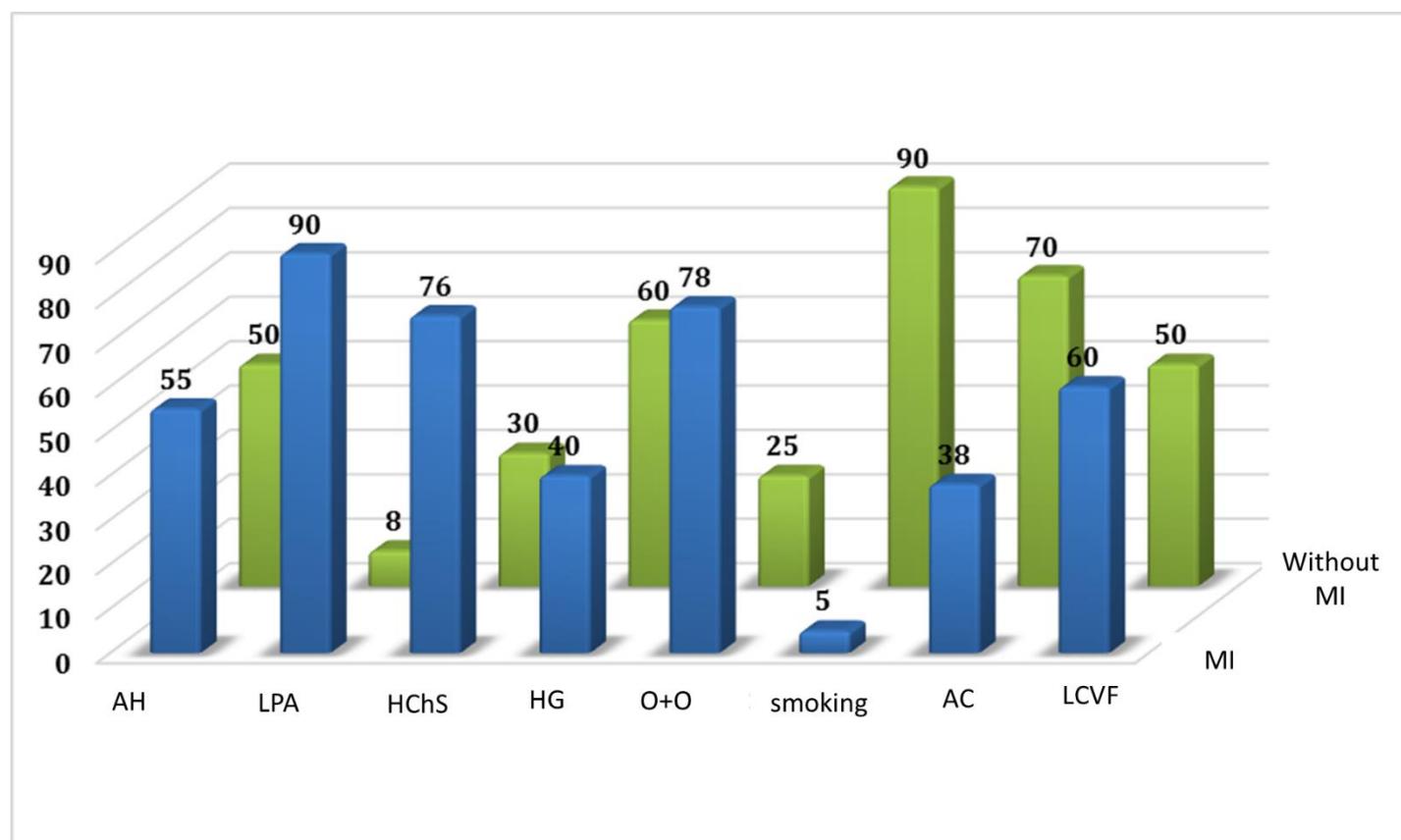
Rice. 3.8. Association of eight risk factors with myocardial infarction among elderly and senile women.
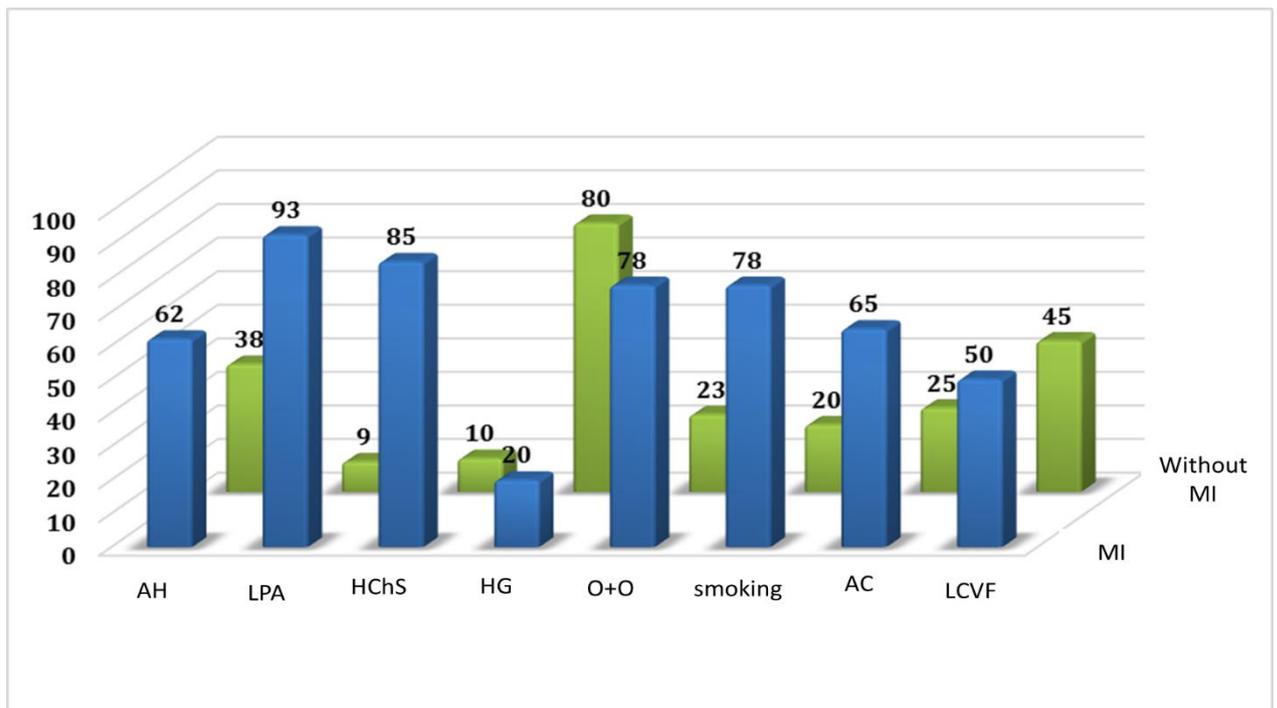
Rice. 3.9. Association of eight risk factors with myocardial infarction among elderly and senile men.

The population of women with UFA is significantly larger in the group with MI (90.6%) than without MI (9.4%); p <0.001. HCS occurred significantly more often in individuals with MI (p <0.01). Hyperglycemia was lower in the group with MI (41.3%) than in the group without MI (58.7%). There is a higher frequency of overweight and obesity in the population of women with MI (79.0%) than without MI (21.0%); p <0.001. The percentage of women who smoke is lower in the group with MI (1.9%) than in the group without MI (98.1%); Alcohol consumption was observed less in persons with MI (34.5%) than in those without MI (65.5%). A similar trend was observed in the group of examined women with NPOF: in persons with and without MI, this factor was detected in 53.4% and 46.6%, respectively.

From Figure 3.9 it follows that in men, hypertension, NFA, HCS, IMTO, smoking and NPOF are statistically significantly associated with a history of AMI. Only hyperglycemia is significantly less common in the MI group (23.2%) than in men without MI (76.8%).

The incidence of hypertension is statistically significantly higher in men with MI (57.4%) than without MI (42.6%); p <0.05. NFA is significantly higher in

the group of men with MI (96.3%) than without MI (3.7%); p <0.001. Hypercholesterolemia also occurred significantly more often in the group with MI (92.9%) than in men without MI (7.1%); (p <0.001).

MITO was recorded significantly more often in persons with MI (77.2%) than without MI (22.8%); p <0.001. Smoking was significantly higher in the group of men with MI (81.8%) than without MI (18.2%); p <0.001.

The frequency of alcohol consumption was observed significantly more often (p <0.01) in persons with MI (67.0%), and the same trend was noted in connection with NPOF: this factor was more often, but not statistically significantly, noted in men with MI (53. 4%) than without MI (96.6%); p>0.05. Table 3.8 presents the prevalence of eight risk factors in the elderly population in different age groups with MI.

Table 3.8

Prevalence of eight risk factors in the population with MI in different age groups

Risk factors	Statistical indicators	Population 60-74 years old		Population 75-89 years		R
		Myocardial infarction		Myocardial infarction		
		+	-	+	-	
AG	P	536	397	126	209	>0.05
	%	57.5*	42.5	58.7*	41.3	
NFA	P	835	98	193	6	<0.05
	%	89.7***	10.3	97.2***	2.8	
GHS	P	761	162	165	34	>0.05
	%	83.7***	16.3	84.4***	15.6	
IMTo	P	714	219	147	52	P>0.05
	%	74.2***	25.8	74.5**	25.5	
Smoking	P	91	842	15	184	<0.05
	%	21.2	78.8	16.7	83.3	
UA	P	206	727	54	145	<0.05
	%	45.2	54.8	28.1	71.9	
NPOF	P	597	336	121	59	>0.05
	%	65.1*	34.9	61.4*	38.6	
GGS	P	205	728	43	156	<0.05
	%	16.5	83.5	22.3*	77.3	

A comparison of eight risk factors in people with MI in the age groups 60–74 and 75–89 years shows both similarities and differences. In the group of 60-74 years and 75-89 years with and without MI, hypertension occurred with a frequency of 57.5% and 42.5% (p <0.05) and 58.7% and 41.3% (p <0 .05)

respectively. In both age groups with MI, hypertension is determined with almost the same prevalence (difference by 1.2%; p>0.05).

Among the population aged 60-74 years with MI, compared with those without MI, NFA was detected significantly more often - 89.7% and 10.3%, respectively (p <0.001), and in the group of 75-89 years old with and without MI - by 97.2% and 2.8% (p <0.001). The frequency of NFA in the population 60-74 years old (89.7%) and 75-89 years old with MI (97.2%) differed statistically significantly (p <0.05). In the population of 60-74 years old and 75-89 years old with MI without MI, HCS occurred in 83.7% and 16.3% (p <0.001) and 84.4±15.6% (p <0.001), i.e. e. did not differ statistically significantly in these age groups (p>0.05).

When analyzing the materials, MITo was statistically significant more often (p<0.01) compared to persons who did not have this factor, MI was noted both in the group of 60-74 years old (74.2% and 25.8%), and in the group 75-89 years old (74.5% and 25.5%). In connection with BMI, MI was not statistically significantly more common in the age group of 75-89 years (p>0.05).

The percentage of smokers is lower in the group of 75-89 years old with MI (16.7%) than in the group of 60-74 years old (21.2%). This difference is statistically significant (p < 0.05). In general, both in the age group of 60-74 years with and without MI, and in the group of 75-89 years with and without MI, the percentage of smokers is lower among patients - 21.2% and 78.8%, and 16 .7% and 83.3%, respectively, in the group with and without MI.

Among the examined 60-74 years old, UA prevalence was 45.2% and 54.8% in groups with and without MI, and in the population group 75-89 years old – 28.1% and 71.9%, respectively (p <0 .05). NPOF is almost equally common in two age groups with and without MI: in 60-74 years - 65.1% and 34.9% (p <0.05) and in 75-89 years - 61.4% and 38.6%, respectively (p <0.05).

From the analysis presented in Table 3.8 it also follows that hyperglycemia in people 60-74 years old with and without MI occurred in 16.5% and 83.5%, and in the group of 75-89 years old with and without MI - 22%, 3% and 77.7% (p

<0.05), respectively. The percentage of occurrence of HS is lower in the group with MI than in the group without MI; the same at the ages of 60-74 years and 75-89 years. This is partly because people with diabetes may be recruited to monitor their glycemic levels more frequently in the elderly population.

Thus, the demonstrated high prevalence of the main risk factors and their relationship with AMI is a favorable prerequisite for carrying out treatment and preventive programs in elderly and senile populations.

It should be noted that the distribution of the eight leading risk factors for AMI was also similar for the two age groups (60-74 years and 75-89 years) of the studied populations. The need for further prospective epidemiological studies on the prevention of AMI and control of its factors in the studied region of Bukhara should be emphasized.

CHAPTER IV. MORTALITY, MORTALITY AND INNOVATIVE APPROACHES TO PREVENTION OF ACUTE MYOCARDIAL INFARCTION AMONG THE ELDERLY AND SENILE POPULATION

§4.1. Comparative analysis of morbidity and mortality from acute myocardial infarction among the elderly and senile population (according to a retrospective analytical epidemiological study).

Looking back, we can see that since 2015, CVD has been the leading cause of death worldwide. Thus, according to WHO, in 2012, 17.5 million people died from cardiovascular diseases, which is 31% of all deaths in the world. Of these, 7.4 million died from coronary heart disease. In the structure of visits to the population for CVD, IHD accounts for 26.6%, and in the structure of morbidity among the adult population - 20.1%. The prevalence of IHD increases sharply with age - from 2-5% in 45-54 years to 11-20% in 65-74 years; mortality rate for ischemic heart disease is 3.02%, for myocardial infarction - 4.5% from hospital discharge. [26; pp.235-236, 29; pp.4-10, 31, 45; pp.123-127, 60; pp.1040-1049, 117]. The epidemiology of the prevalence of morbidity and mortality from AMI in elderly and senile patients has been studied relatively insufficiently, especially in the regions of Uzbekistan.

In this regard, the next goal of our study was a comparative analysis of morbidity and mortality from AMI among the elderly and senile population according to a 5-year retrospective analytical epidemiological study in the Bukhara region of Uzbekistan (Table 4.1).

Table 4.1

Frequency of primary morbidity from AMI among the elderly and senile population according to retrospective observation data

Years of observation	Total population	Primary incidence of AIM				P
		In Bukhara region		In the City of Bukhara		
		п	%	п	%	
2015	1815100	173	0,009	17	0,006	<0,05
	275000					
2016	1845730	217	0,011*	31	0,113***	<0,01
	275000					
2017	1869960	224	0,012*	20	0,007	<0,05
	277891					
2018	1899457	448	0,023***	11	0,004	<0,01
	278049					
2019	1924200	348	0,018**	15	0,005	<0,01
	280600					
Total 2015-2019y.	9354447	1410	0,015*	94	0,007	<0,01
	1386540					

Note: the table shows differences relative to the 2015 group, the population in the top line for the Bukhara region, in the bottom line for the city of Bukhara.

Retrospective monitoring was carried out during 2015-2019. and annually information was collected on the primary incidence of AMI and mortality from it according to the statistics department of the Bukhara region of the State Committee of the Republic of Uzbekistan on Statistics. Based on these data, all cases of primary morbidity and mortality were selected in the selected population of 60-89 years old in the Bukhara region and the city of Bukhara.

Over 5 years of observation (from 2015 to 2019), the average annual rate of primary incidence of AMI for the population of 60-89 years old in the Bukhara region and the city of Bukhara was 0.015% and 0.007%, respectively (<0.05) (Table 4.2). When comparing the first (2015) and last year of observation (2019), the average prevalence of AMI was significantly higher in the latter (almost 2 times, p <0.01). By year, the primary incidence of AMI was among the elderly and senile population in the Bukhara region and the city of Bukhara, respectively: 2015 - 0.009% and 0.006% (p <0.05), 2016 - 0.011% and 0.113% (p <0 ,01), 2017 -

0.012% and 0.007% (p <0.05), in 2018 - 0.023% and 0.004% (p <0.001) and 2019 - 0.018% and 0.005% (p <0.001).

Table 4.2

5-year dynamics of the incidence of primary morbidity from AMI among the female and male population 60-89 years old

Group of examinations	Years of observation					P		
	2015 (1)	2016 (2)	2017 (3)	2018 (4)	2019 (5)	<0,05	<0,01	<0,001
	п %	п %	п %	п %	п %			
Male population 60-89 years	10 58,8*	19 61,3*	14 70,0**	8 72,7**	13 86,7***	3-1 4-1 5-1	-	-
Female Population 60-89 years	7 41,2	12 38,7	6 30,0	3 27,3	2 13,3	1-3 1-4	1-5	-
Total	17 100,0	31 100,0	20 100,0	11 100,0	15 100,0	-	-	-

Among the population of the region, there is a significantly significant increase in the frequency of primary morbidity, and in the city of Bukhara there is a statistically unreliable trend towards an increase in the prevalence of AMI and a relatively lower frequency of its detection. This indicates that preventive measures against AMI should be more active and earlier on a regional scale, at least among the elderly and senile population. Since the unfavorable epidemiological situation remains in relation to the "accumulation of pathological characteristics" with the risk of maintaining a further increase in the primary incidence of AMI among the elderly population (Fig. 4.1).
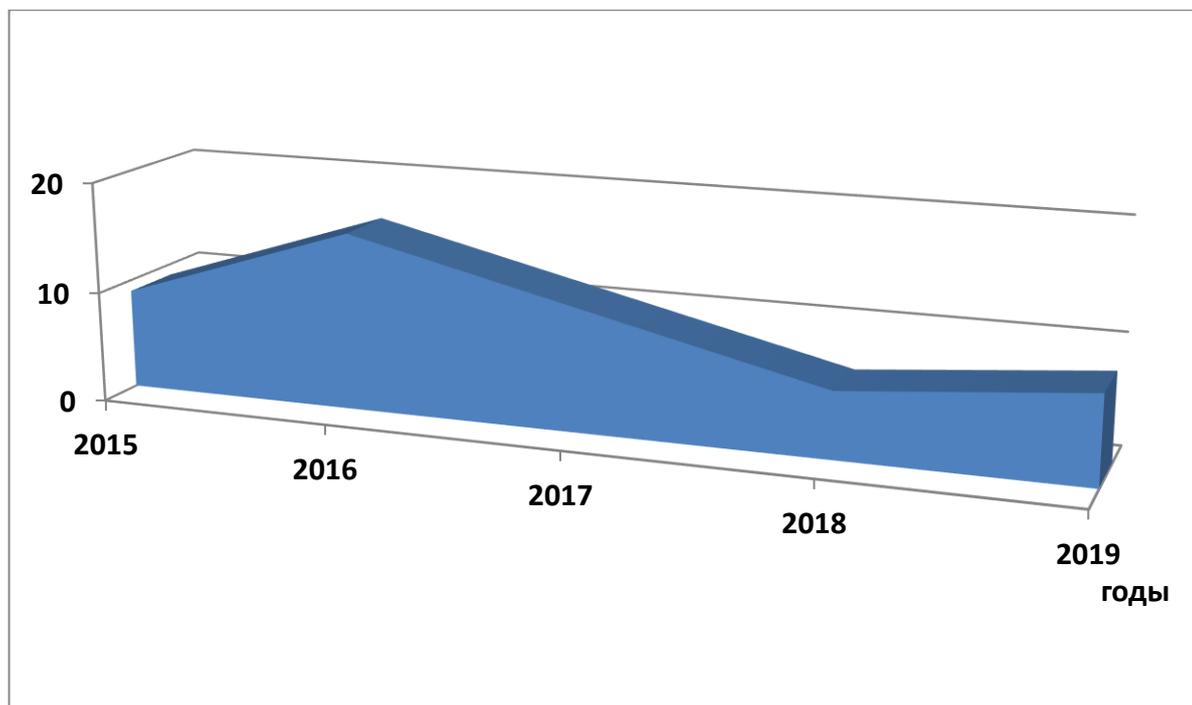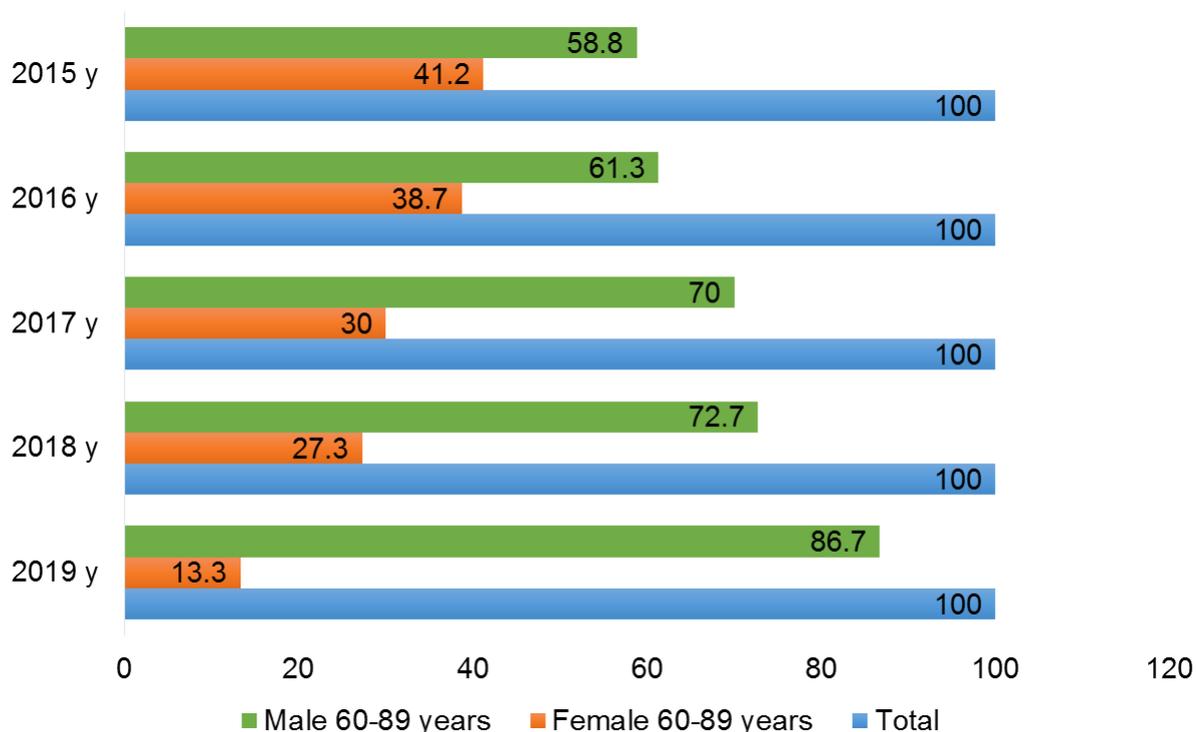
Rice. 4.1. Dynamics of primary incidence of AMI in the elderly and senile population of Bukhara for the period 2015-2019. (%).

An attempt was made to compare the data on the frequency of 5-year dynamics of primary morbidity from AMI among the male and female population 60-89 years old in Bukhara. The structure of gender causes of AMI in the analyzed group of elderly patients (94 people) is presented in Table 4.2.

The incidence of AMI in the examined group of people with AMI (94 people) was statistically significantly higher in elderly men than in women and, accordingly, by year remained:2015. - 58.8% and 41.2% (p <0.05), in 2016. - 61.3% and 38.7% (p <0.05), in2017. - 70.0% and 30.0% (p <0.01), in2018. - 72.7% and 27.3 (p <0.01) and in2019. – 86.7% and 23.3% (p <0.001).

Over five years of observation, the primary incidence of AMI in men increased from 58.8% to 86.7%, i.e. by 27.9% or 1.4 times, or annually by 5.6% (p <0.05). In the group of elderly women, the opposite was observed from old age – a decrease in the prevalence of AMI from 41.2% (in 2015) to 13.3% (in 2019), i.e. by 27.9% or 3.2 times (p <0.001). The difference in the prevalence of AMI by year is statistically significant. The prevalence of AMI and their "end points" is

increasing among men (apparently, this is due to the high frequency of accumulation of risk factors in them), and decreasing among women (Fig. 4.2).

Rice. 4.2. Dynamics of primary incidence of acute myocardial infarction depending on gender in 2015-2019 (in%).

These data are partially consistent with literature data [29; pp.4-10, 50; pp.6-17, 106; p.3-220]. Further, the overall mortality rates in 2015-2019 were analyzed. among the elderly and senile population of Bukhara (Table 4.3).

According to official statistics for the period 2015-2019. the overall mortality rate among the population decreased from 0.439% to 0.433%, i.e. by 0.006% (p>0.05) in the Bukhara region, and in the city of Bukhara during this period the proportion of deaths increased from 0.477% to 0.486%, i.e. by 0.009% (p>0.05). The mortality rate in the Bukhara region and the city of Bukhara was 0.434% and 0.486%, respectively (p <0.05).

Table 4.3

Overall mortality rates in 2015-2019. among the elderly and senile population of Bukhara.

Years of observation	Total population	Mortality among the population				P
		In Bukhara region		In the City of Bukhara		
		п	%	п	%	
2015	1815100	7976	0,439	1313	0,477	>0,05
	275000					
2016	1845730	8013	0,434	1318	0,479	<0,05
	275000					
2017	1869960	8336	0,446*	1360	0,489	<0,05
	277891					
2018	1899457	7978	0,420	1387	0,499	<0,05
	278049					
2019	1924200	8338	0,433	1364	0,486	<0,05
	280600					
Total 2015-2019y.	9354447	40641	0,434	6742	0,486	<0,05
	1386540					

Note: the table shows differences relative to the 2015 group of population – in the top line for the Bukhara region, in the bottom line for the city of Bukhara.

In a comparative analysis of the data obtained for a five-year observation period in the Bukhara region and the city of Bukhara, the following levels of AHF were established, respectively, among the surveyed elderly population: 2015 - 0.439% and 0.477% each (p>0.05), 2016 - 0.434 each; and 0.479% (p <0.05), 2017 - 0.446% and 0.489% (p <0.05), 2018 - 0.420% and 0.499% (p <0.05), 2019 - 0.433 % and 0.486% (p <0.05).

The presented statistical data from the health service to a certain extent allow us to get an idea of the epidemiological situation regarding AHF in the elderly population. It seems that in relation to elderly and senile people, little success can be noted in the prevention and treatment of CVD/CHD. This is confirmed by a slight decrease or, more correctly, a slowdown in the OSN (by 0.006%) in the Bukhara region as a whole. However, in the population of elderly

and senile people in Bukhara, the trend towards increasing mortality continues. There is no doubt about the need to improve statistical recording of mortality, clarify approaches to the formulation of post-mortem diagnosis, definition and coding of death according to ICD-10, as well as the advisability of conducting clinical and epidemiological periodic studies among various population groups aimed at clarifying the causes of AHF, including AMI. and/or other CVDs.

Table 4.4 presents the ratio of mortality from myocardial infarction according to official statistics in elderly men and women of the Bukhara region in various age groups.

Table 4.4

Frequency and dynamics of mortality from acute myocardial infarction among men and women of the Bukhara region aged 60 years and older in 2015-2019.

Years of observation	Total number of deaths	Mortality from AIM						Statistics difference by t-test (P)		
		Female			Male					
		60-74 years (1)	75-89 years (2)	60-89 years	60-74 years(3)	75-89 years (4)	60-89 years			
		п	п	п	п	п	п			
		%	%	%	%	%	%			
2015	7976	0,0	0,0	0,0	0,0	0,0	0,0	-	-	-
		0,0	0,0	0,0	0,0	0,0	0,0			
2016	8013	0,0	2	2	0,0	1	1	1-4	-	-
		0,0	100,0***	100,0	0,0	100,0***	100,0			
2017	8336	3	2	5	2	2	4	1-3	-	-
		60,0***	40,0**	100,0	50,0*	50,0**	100,0	1-2		
2018	7978	21	21	42	43	15	58	3-1	-	-
		50,0**	50,0**	100,0	74,1*	25,9*	100,0	2-4		
2019	8338	41	13	54	51	25	76	4-1	-	-
		75,9***	24,1*	100,0	70,8**	29,2*	100,0			
Total 2015-2019y.	40641	65	38	103	96	39	135	1-2	3-4	-
		63,1	36,9	100,0	71,1	28,9	100,0	2-4		

Note:

*)

**)

***) - the table shows differences relative to the 2015 group. death: • in2016.- mortality was observed only in the group of women - 2 cases (100.0%) and men 75-89 years old - 1 case (100.0%);

• the mortality rate for both men and women over the age of 60 years (and up to 90 years) has increased sharply since 2017: for women 60-74 years old and 75-89 years old, mortality rates are determined with a frequency of 60.0 % (p <0.001) and 40.0% (p <0.05), i.e. comparatively more often cases of AMI were noted in the group of elderly women (p <0.05); and in men it was observed - 50.0% respectively in these two age groups;

• mortality from myocardial infarction in elderly and senile men was very high in 2018 - 74.1% and 25.9% (p <0.01) compared with mortality rates from AMI in women 60-74 years old (50, 0%) and 75-89 years (50.0%).

From the data presented in the table it can be seen that the mortality rate among women and among men in various age groups by year during 2015-2019. was determined at the following prevalence levels, respectively: • in2015. -0.0% and 0.0% for women in the age groups 60-74 years and 75-89 years, 0.0% and 0.0% for men, i.e. no cases were recorded.

In 2019, mortality from AMI was 75.9% in women 60-74 years old and - 24.1% in the group 75-89 years old (p <0.001), and in men at the same ages - 70.8% and 29. 2% (p <0.01). All deaths during 2015-2019 were 63.1% and 36.9% (p <0.05) for elderly and senile women, respectively, and 71.1% and 28.9% (p <0) for men .05). Over the past 3 years, mortality from AMI has increased in women from 60.0% to 75.9%, i.e. by 15.9% or 1.2 times (p <0.05), and in men in the age group 60-74 years - from 50.0% to 70.8%, i.e. by 20.8% or 3.6 times (p <0.001). In the age group of 75-89 years in women and men, mortality rates from AMI decrease - from 40.0% to 36.9%, i.e. by 3.1% (p>0.05) and from 50.0% to 28.9%, i.e. by 21.1% (p <0.05), respectively.

This is apparently due to the small number of observations. In general, gender differences remain significantly significant in mortality rates from AMI. In the age group 60-74 years, the mortality rate is 8.0% higher in men (71.1%) than in

women (63.1%); p <0.05. And in the group of 75-89 years, mortality from myocardial infarction is 8.0% higher in women (36.9%) than in men (28.9%); p <0.05.

The share of mortality from AMI in overall mortality in the surveyed population of women and men aged 60-89 years is presented in Fig. 4.3 (in the city of Bukhara).
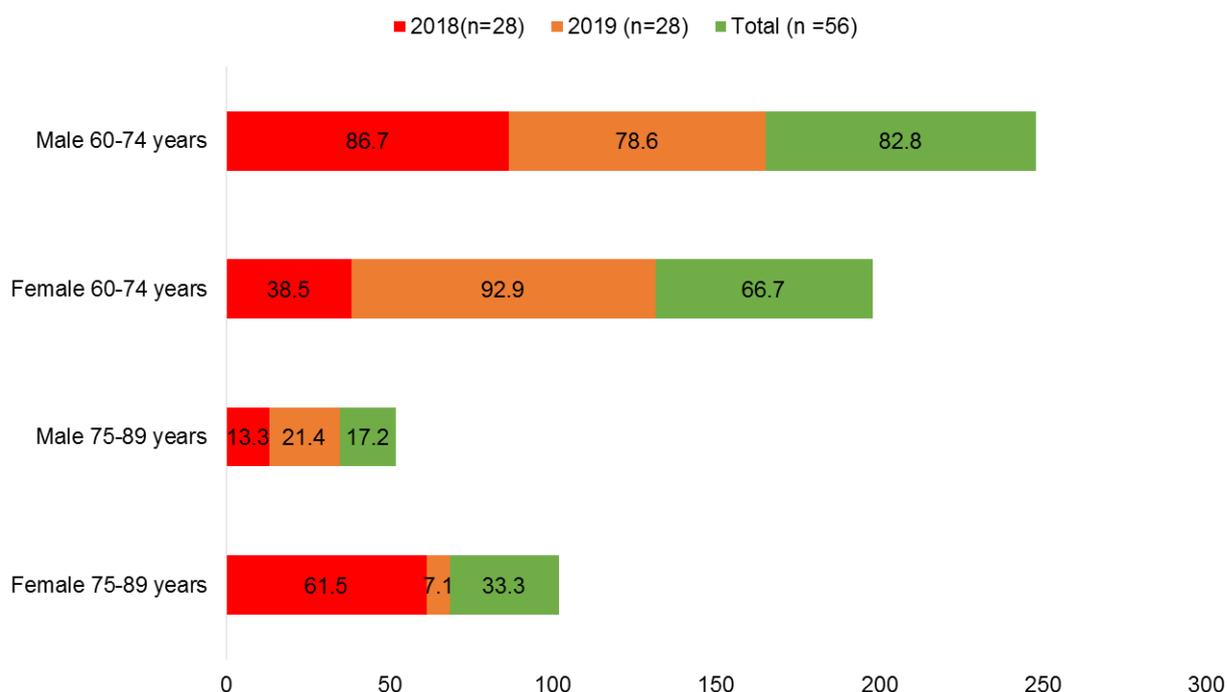
Rice. 4.3. Mortality rate from AMI among the population of men and women of elderly and senile age in Bukhara.

Noteworthy, along with the decrease in mortality from AMI in men 60-74 years old in general and the achievement by 2019 of the mortality rate from 86.7% to 78.6% (p>0.05), and increased by 1.2 times (from 13.3% to 21.4%, p <0.05) mortality among men 75-89 years old and women 60-74 years old - 2.4 times (from 38.5% to 92.9%, p <0.05). Mortality from AMI for the period 2018-2019 among the population of women 75-89 years old decreased by 54.4%, that is, from 61.5% to 7.1% (p <0.001). The mortality rate among women 75-89 years old was - 33.3%, and among men 75-89 years old -17.2% (p < 0.05). In the group of 60-74
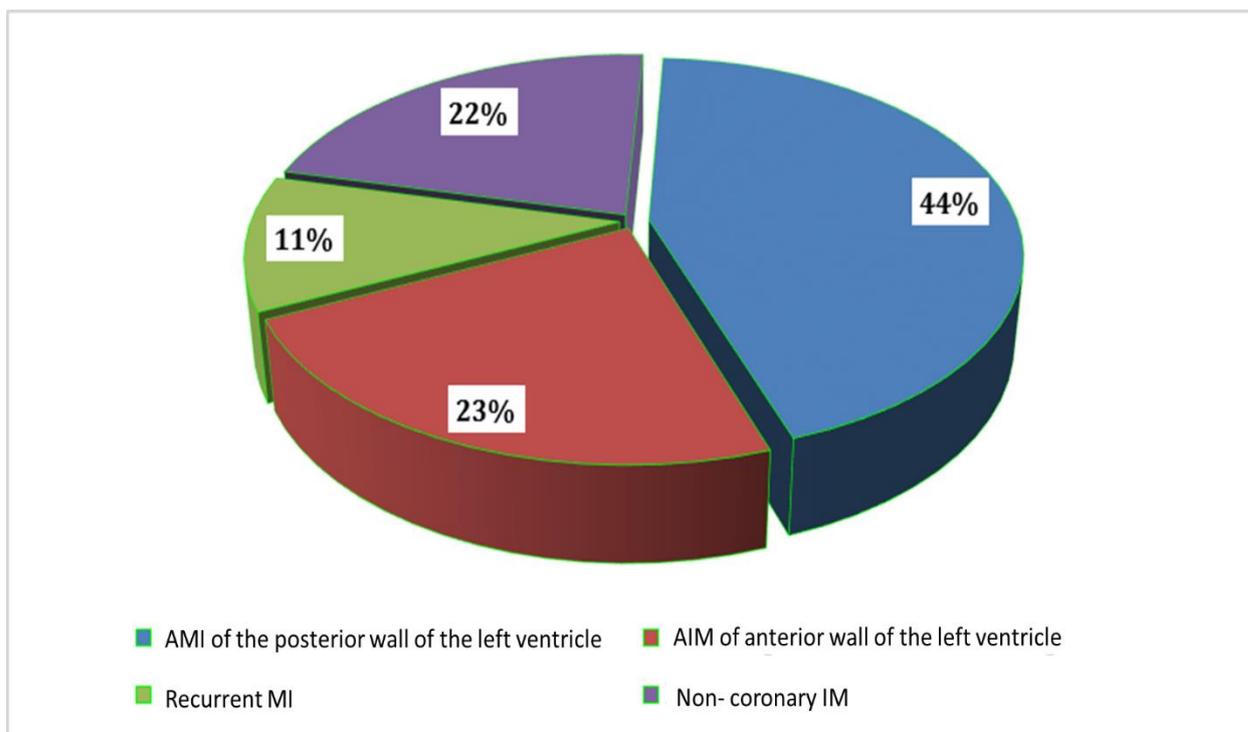
years, the mortality rate from AMI was higher in men (82.8%) than in women (66.7%), p <0.05.

Note that before2018. the number of deaths was small among the surveyed population of elderly and senile people in Bukhara, so they are not included in the analysis.

Comparison of the noted data on the incidence of AMI and mortality from it indicates a significant difference in the obtained indicators in men and women of elderly (60-74 years) and senile (75-89) age, and also a noticeable difference in the indicators of "end points" is striking. (morbidity and mortality) from MI in the Bukhara region and the city of Bukhara. Consequently, comparison of the results of the same type of analytical retrospective epidemiological studies conducted on different populations, even within a particular region, is justified, useful and has scientific and practical significance for the implementation of preventive programs among the population. Such an analysis allows not only to give a comparative assessment, but also to identify some general and specific patterns of the occurrence and nature of "end points" in AMI at the population level, including in elderly and senile people.

Attempts to establish the incidence of myocardial infarction and mortality from it were also made by other researchers, who in their works were based on a retrospective analysis of population information obtained from official sources of information on those who suffered from myocardial infarction or died from it [4; pp.73-78, 20; pp.45-48, 22; pp.33-35, 29; p.4-10].

Further, Figure 4.4 shows the structure of AMI according to autopsy data, which became the leading cause of death in elderly and senile people in Bukhara.

22%

44%

11%

23%

■ AMI of the posterior wall of the left ventricle   ■ AIM of anterior wall of the left ventricle

■ Recurrent MI   ■ Non- coronary IM

Rice. 4.4. Structure of AMI, which became the leading cause of death in patients aged 60-89 years according to autopsy data (n=9).

As can be seen from Figure 4.4, the structure of AMI, which became the leading cause of death in elderly and senile patients according to autopsy data, in the analyzed group was represented by acute myocardial infarction of the posterior wall of the left ventricle (LV) - 44.3%, AMI of the anterior wall of the LV - 22 .4%, repeated myocardial infarction - 11.1%, "Non-coronarogenic" MI syndrome - 22.2%.

In general, in 66.7% of elderly patients, deaths occurred due to primary myocardial infarction; in 22.2% of patients, the main causes of unfavorable outcome were "non-coronary" factors or cases of AMI.

It turns out that the elderly and senile population lives with insufficiently resolved problems until nosological / early diagnosis and prevention of AMI, which are practically not discussed at the population level. As a result, this can lead to unfavorable epidemiological situations: using the example of Bukhara, according to our data, up to 74.1% in elderly and senile people (in men up to 82.8% and in women up to 66.7%). It can be assumed that the experience of epidemiological screening will be beneficial when conducting further regional

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preventive studies and will serve to combine the efforts of science and practice in the development of an urgent geriatric problem - the prevention of AMI/CVD in elderly and senile people.

§4.2. Modern features of the clinical course, optimization of treatment and development of innovative approaches to the prevention of acute myocardial infarction among the elderly and senile population (clinical and pharmacoepidemiological study).

We analyzed the course of AMI in 292 elderly and senile patients by copying data from the medical records of the departments of cardiology and cardiac intensive care unit of the Bukhara branch of the Republican Research Center for Emergency Medicine of the Ministry of Health of the Republic of Uzbekistan for 2017-2019. Some features of the clinical manifestations of AMI have been established (Fig. 4.5).
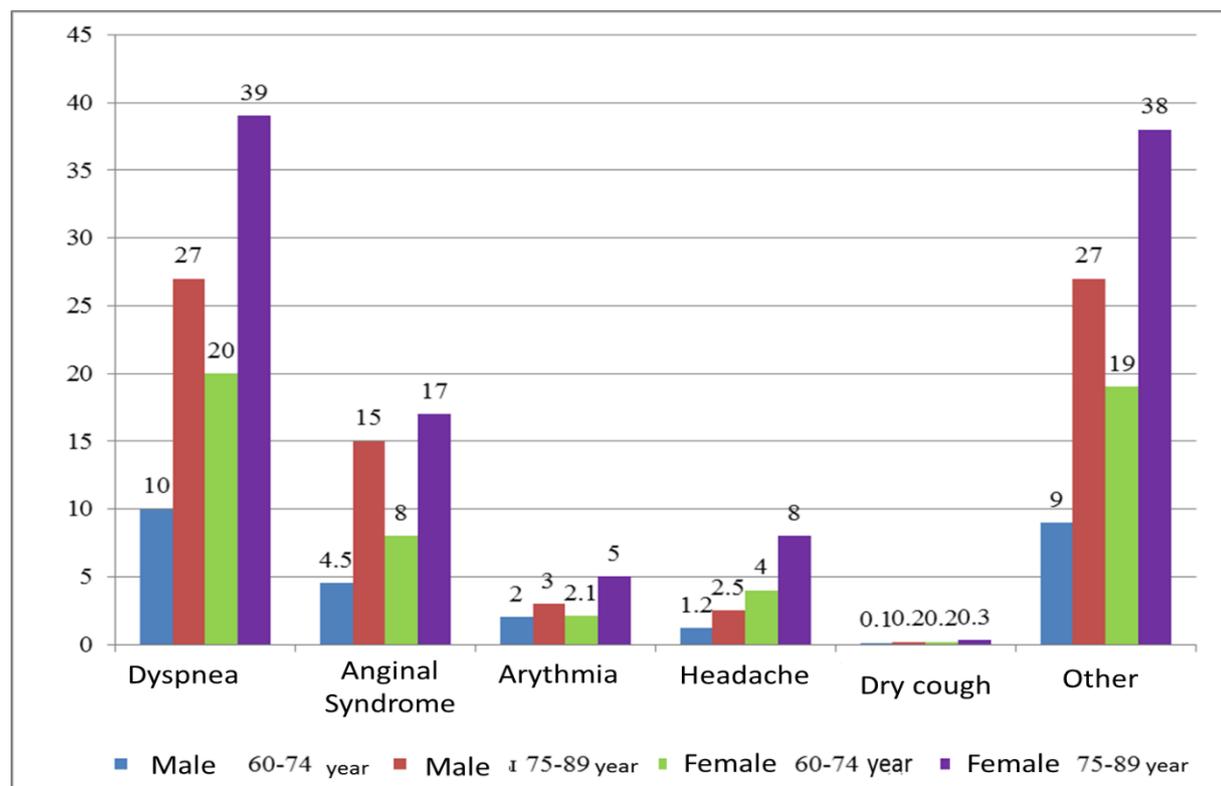
Rice. 4.5. Comparative analysis of the features of the clinical course of acute myocardial infarction among the elderly and senile population of Bukhara (%).

Data obtained from elderly and senile men and women indicate that the frequency of individual syndromes and symptoms of AMI among them varies, and their severity can be used to judge the characteristics of the course of myocardial infarction.

As can be seen from Figure 4.5, there are general patterns in the course of AMI among the elderly (EL) and senile (NSV) population, which are revealed when using unified diagnostic methods and criteria.

The data obtained show that the clinical manifestations of AMI in the IVC and NSV are characterized mainly by six symptoms - shortness of breath, anginal pain (Rose "+"), arrhythmias, headaches, suffocation and dry cough. The atypical clinical variant predominates (37.0% - in the form of status asthmaticus, 98.0% - painless form, 5.0% - arrhythmic variant) compared with the typical course of AMI. Thus, the atypical course of AMI was established in 75% of elderly patients, and the typical course – in 25.0% ($p < 0.001$).

In general, clinical signs of AMI were observed with gender and age characteristics and were recorded with the following prevalence levels: shortness of breath - in men 60-74 years old and 75-89 years old - 10.0% and 27.0% each ($p < 0.01$), in women 60-74 years old and 75-89 years old – 20.0% and 39.0% ($p < 0.05$), respectively; • anginal syndrome – "Rose positive syndrome" - in men IVC and NSV – 4.5% and 15.0% ($p < 0.01$), in women IVC and NSV – 8.0% and 17.0% each ($p < 0.01$); •arrhythmias – among men IVC and NSV 2.0% and 3.0% ($p > 0.05$), among women IVC and NSV 2.1% and 5.0% ($p < 0.05$); • headaches – in men 60-74 years old and 75-89 years old – 1.2% and 2.5% each ($p < 0.05$), in women – 4.0% and 8.0%, respectively ($p < 0.05$); •choking and dry cough in men NPV and NSV at 0.1% and 0.2% ($p > 0.05$); in women - 0.2% and 0.3% ($p > 0.05$); •various clinical, instrumental and laboratory signs associated Clinical Features of Myocardial Infarction (CIMI) in men IVC and NSV 9.0% and 27.0% ($p < 0.001$), in women – 19.0% and 38.0 respectively ($p < 0.01$).

Thus, the clinical manifestations of AMI in elderly and senile people are represented by sharply high frequencies: shortness of breath - 66.5% (in men -

37.0% and in women - 29.5%, p <0.05), anginal syndrome - 44.5% (in men - 19.5% and in women - 25.0%; p <0.05) and signs of comorbid pathologies - 64.5% (in men - 36.0% and in women - 28, 5%, p <0.05). To a comparatively lesser extent, such clinical signs of AMI were observed as headaches - 15.7% (in men - 3.7% and in women - 12.0%; p <0.001), arrhythmias - 12.1% (in men - 5.0% and in women - 7.1%; p>0.05) and choking with dry cough - 0.8% (in men - 0.3% and in women - 0.5%; p <0. 05).

These results on the characteristics of the clinical manifestations of AMI apparently indicate the presence of comorbidity influences on the formation and course of this pathology in old and senile age, which were identified in 64.5% of patients.

It should be noted that the diagnosis of AMI was established taking into account the characteristics of the clinical course, changes in ECG dynamics, enzyme levels in the blood serum, and in cases of death - autopsy results. The typical development of MI is characterized by the presence of severe pain in the chest (Rose "+") without irradiation or irradiation to the shoulder, neck, upper abdomen, etc.: the pain lasted for at least 20 minutes and was not relieved after taking nitroglycerin. In the absence of pain (anginal) syndrome and the presence of other symptoms shown in Figure 4.5, an atypical course was recorded.

This approach to assessing the clinical course of AMI is used by modern researchers (9;38;51). The prevalence and clinical course of AMI in the study population was assessed based on ECG changes. A resting 12-lead ECG was recorded before glucose loading and each ECG was scored according to the Minnesota code (MC). "Definite" (presence of a Q wave, displacement of the RS-T segment ("damage current") above the isoline with a subsequent decrease in it and the formation of a negative T wave) "ambiguous" ECG changes in AMI (transient rise or decrease in ST, presence of a Q wave in II) were recorded and III chest leads, sharp deviations of the electrical axis to the right in the presence of data indicating LV hypertrophy, low voltage in standard (less than 1 mV) and chest leads (less than 2 mV) in the presence of myocardial hypertrophy or hypertension

on previous ECGs, negative T waves, left bundle branch block and tall R waves in lead V1). The prevalence of "definite" and "possible myocardial infarction" based on ECG changes (history of MI only + Minnesota ECG codes -1-1, 2-1) is presented in Figure 4.6.
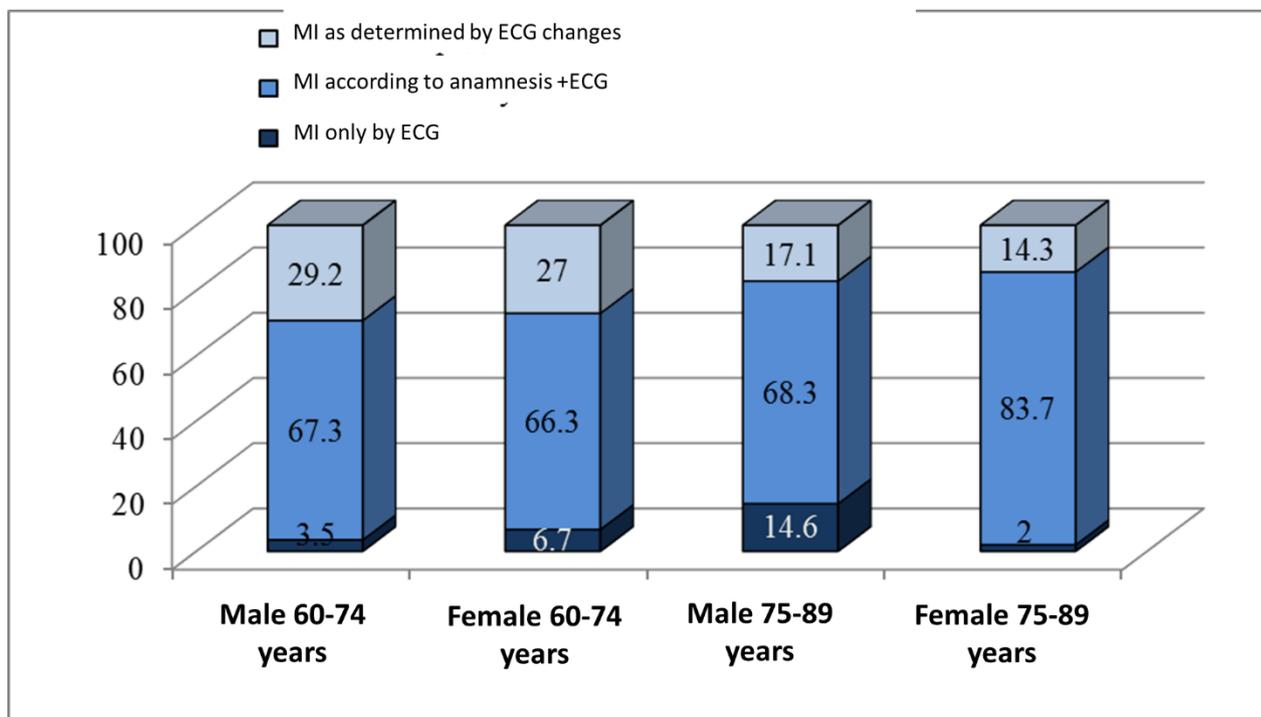
Rice. 4.6. Structure of clinical variants of AMI among the unorganized population 60-89 years old - according to ECG changes (in%).

As can be seen from Figure 4.6. the incidence of various forms of AMI based on ECG changes is significantly higher in the elderly and senile population and is: in men IVC and NSV – AMI based on ECG only 3.5% and 14.6% (p <0.001), MI based on history + ECG - 67.3% and 68.3% (p>0.05); MI based on definite and ambiguous ECG changes - 29.2% and 17.1% (p <0.05); in women IVC and NSV, respectively - AMI only according to ECG in 6.7% and 2.0% (p <0.001), MI according to history + ECG - 66.3% and 83.7% (p <0.05), MI based on "definite and ambiguous changes on the ECG - 27.0% and 14.3% (p <0.05).

Thus, in the examined population of elderly and senile age, atypical variants or asymptomatic forms (only ECG changes without exertional angina or infarction) of acute or repeated, transmural or non-transmural (with and without Q wave) myocardial infarction are actually more common. These data indicate more

frequent ECG monitoring in the elderly population and are consistent with the data of other researchers [27, 101; p.641-647].

As already mentioned in "Chapter 1," according to WHO, one of the significant social trends of the 21st century is the aging of the population, caused by a decrease in the birth rate and an increase in life expectancy. The incidence rate of NPS and NSV is 2 and 6 times higher, respectively, than in young people. In this population group, adverse drug reactions (ADRs) develop 1.5 times more often than in young people and are detected in 6-15% of cases. The results of pharmacotherapy are significantly worsened by polypharmacy, i.e. unreasonable prescription of a large number of medications. Polypharmacy, according to the literature, occurs in 56% of patients under the age of 65 years and in 73% of patients over 65 years of age [27, 39; pp.90-94, 74; pp.223-228, 81; p.53, 117].

In connection with the above, it seems relevant to conduct a pharmacoepidemiological study and evaluate drug therapy in elderly and senile patients with AMI in an emergency hospital in order to optimize pharmacotherapy and emergency prevention.

We conducted a retrospective pharmacoepidemiological analysis of 292 case histories (2017-2019) of patients with AMI aged 60-89 years who were treated in the emergency cardiology and cardiac intensive care departments of the Charitable Foundation of the Republican Research Center for Emergency Medicine of the Ministry of Health of the Republic of Uzbekistan. Demographic data, the main diagnosis of AMI and concomitant diseases were taken into account in accordance with the headings of the International Classification of Diseases (ICD-10). The structure and frequency of drug therapy (DT) were studied for each patient. Trade names of medicinal products (MDs) in the prescription sheets were translated into international nonproprietary names, after which the number of prescriptions, the frequency of polypharmacy, and cases of use of potentially recommended and non-recommended drugs were assessed according to the STOPP/START criteria (2014) and the Beers criteria (2015). [Krasnova N.M. et al., 2017]. Data in this regard are summarized in Figure 4.7.
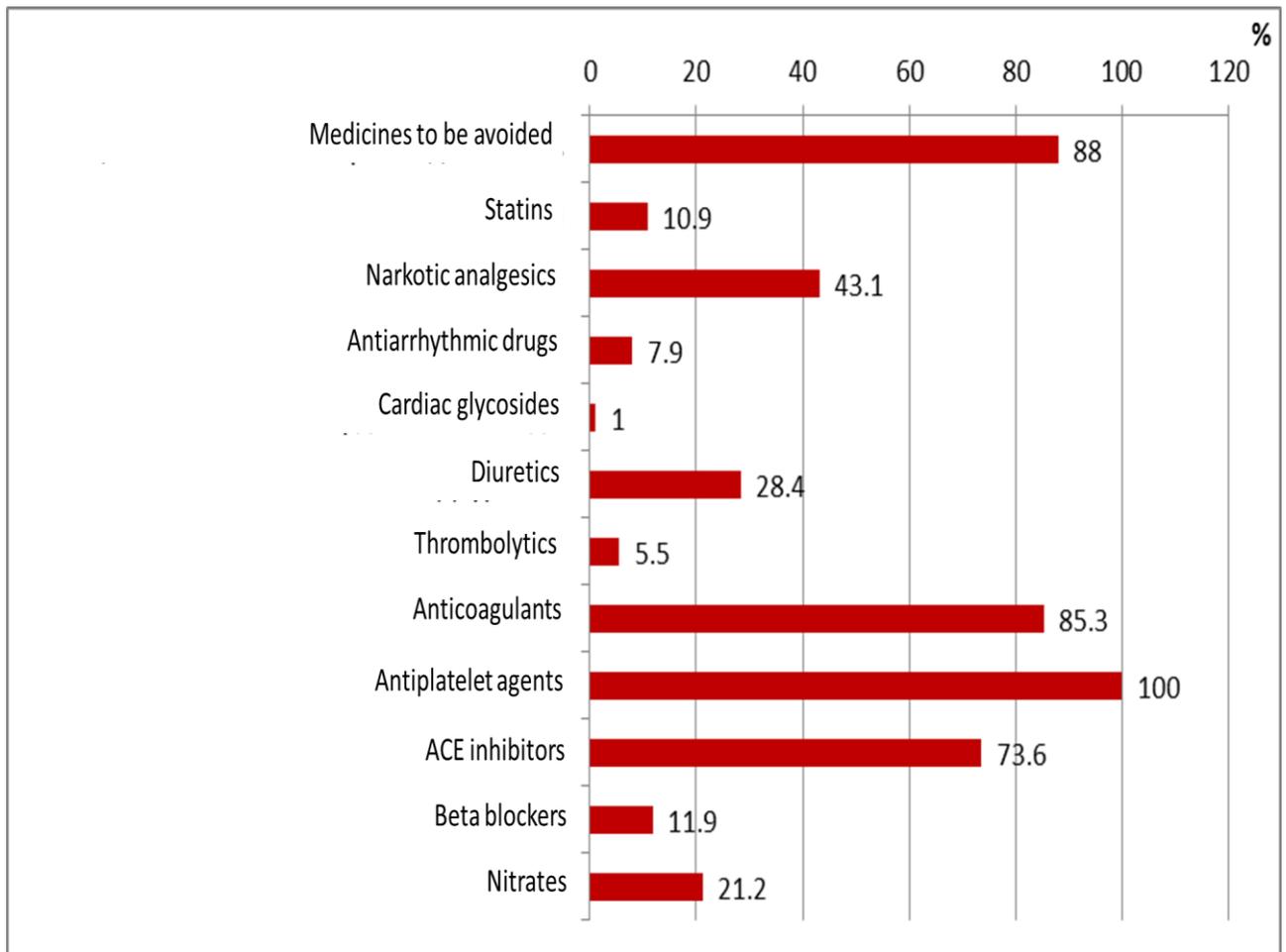
Rice. 4.7. Distribution of medications and assessment of pharmacotherapy in elderly and senile patients with AMI (data from a pharmacoepidemiological study).

The analysis revealed that 12 classes of drugs were used for pharmacotherapy of AMI. The average number of drugs received by one patient on certain days of hospital stay was 9-10 (in the form of tablets) and 5 drugs for parenteral use, i.e. Polypharmacy is observed. The most frequently used drugs for the treatment of patients with AMI were narcotic analgesics (43.1%), direct-acting anticoagulants (85.3%), antiplatelet agents (100.0%) and ACE inhibitors (73.6%). Diuretics (28.4%), nitrates (21.2%) and antiarrhythmic drugs (7.9%) were used with comparatively less frequency. Noteworthy is the extremely low (unacceptable) frequency of prescription of such "1st line drugs" as statins (10.9%), thrombolytics (5.5%) and beta blockers (11.9%).

The analysis found that 89% of elderly patients were prescribed drugs, the use of which should be avoided in people of this group with AMI (88.8% of patients used anti-inflammatory nonsteroidal drugs, 1.0% of patients used cardiac glycosides).

Thus, from the results of our study it follows that the high percentage of mortality from AMI in elderly and senile people may be associated with the lack of adequate emergency treatment to a certain extent. When conducting urgent pharmacotherapy and emergency drug prophylaxis in NIP and NSV, the comorbid background and associated polypharmacy are also the leading problems affecting the "end points" of AMI and the quality of life of elderly patients. To combat these "medical pharmacoepidemiological risk factors for AMI", optimize drug therapy and urgent prevention, it is necessary to use innovative tools for its optimization, such as population and pharmacoepidemiological monitoring.

We have developed such an approach and/or a regional tool for optimizing existing methods for the prevention and treatment of AMI among the elderly and senile population (Appendix 1). These developments have shown effectiveness in terms of increasing the effectiveness and safety of prevention and pharmacotherapy of AMI, and can be widely used in cardiological practice.

CONCLUSION

Epidemiological studies make it possible to study the true prevalence, patterns of the natural history of AMI and its clinical variants, as well as to develop innovative approaches to prevent the disease and its "end points". Such studies are especially important for the elderly and senile population. Since, according to WHO, one of the significant social trends of the 21st century is the aging of the population, caused by a decrease in the birth rate and an increase in life expectancy [19; p.13]. According to various studies, the following scientific facts have been confirmed: • the morbidity rate in older people is 2 times higher than in young people, • the structure of general morbidity in elderly and senile people includes diseases of the circulatory system (30%), musculoskeletal system and connective tissue (11%), eye and its appendages (10%), respiratory organs (10%), digestive organs (7%); • 90% of elderly and senile patients are often diagnosed with 3 or more chronic diseases (comorbidity), which increase the risk of complications, the likelihood of disability and death: elderly and senile patients simultaneously take from 2 to 8 drugs;

• polypharmacy occurs in 56% of patients under the age of 65 years and in 73% of patients over 65 years of age; in this case, there is a risk of drug hazard - when taking 2 drugs, clinically significant ADRs occur in 6% of patients, the prescription of 5 drugs increases the frequency of their development to 50%.[5]

Therefore, the system for preventing CVD, in particular AMI, should traditionally be based on identifying the so-called modifiable risk factors in older age groups of the population, i.e. such acute forms of IHD and conditions, the presence of each of which increases the likelihood of developing cardiovascular accidents and death [17; pp.27-33, 21; p.218-219]. Existing and operating systems of total regular testing (dispensary examination) to identify risk factors in the population - the development of CVD/AMI can give positive results, but in most cases do not justify themselves, since they require quite large financial, structural and organizational costs, with low efficiency. In this regard, optimization of the

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[5]Quoted from Krasnova N.M. et al. // Klinicheskaya medicina-2017-Volume 95. No. 11-C.1043.

population-based preventive approach to strengthening drug safety and the effectiveness of screening among the population and in patients with AMI is one of the urgent tasks of preventive specialists.

It should be noted that almost ¾ of deaths from IHD occur in persons over 65 years of age, and almost 80% of those who died from AMI belong to this age group [38; p.23, 45; pp.123-127]. Based on this, epidemiological studies play a leading role in uncovering problems associated with the prevention of AMI among the elderly and senile population. Actively organized epidemiological and preventive programs for improving the health of the elderly and senile population in various regions of the country, including in arid zones, can significantly reduce the incidence of AMI and mortality from it. In this regard, the study of the epidemiology of AMI and the availability of results on the true prevalence of AMI and its relationship with various risk factors influencing its development are of priority importance in modern science. Based on the above, this study was planned and carried out.

The purpose of the study was to study the epidemiological conditions and situation regarding AMI, its regional risk factors among the elderly and senile population of Bukhara and improve the nosological diagnosis of this disease by developing algorithms for primary and secondary prevention and a screening test for the early detection of myocardial infarction.

The object of the study was a representative sample of men (513 people) and women (619 people) of elderly and senile age, formed from the latest electoral lists of the population (16,180 people) of the city of Bukhara. A total of 1,132 people were examined; in addition, a retrospective analysis of medical histories was carried out in 292 elderly and senile patients treated for AMI in the period from 2017 to 2019 at the Charitable Foundation of the Republican Research Center for Emergency Medicine of the Ministry of Health of the Republic of Uzbekistan. Among them, pharmacoepidemiological and VEN analysis was carried out. A retrospective analysis of morbidity and mortality from AMI according to official

statistics was carried out for the period 2015-2019. 238 died in the Bukhara region and the city of Bukhara.

The study used epidemiological, survey, clinical, laboratory-biochemical, instrumental, pharmacoepidemiological research methods and statistical analysis.

We studied the features of the spread of AMI among the unorganized elderly and senile population using the example of the city of Bukhara. It was shown that only 2.9% of the examined elderly people do not have chronic diseases (CD). 97.1% have chronic disease, mainly CVD. The incidence of annual endpoints (mortality in general) is observed at levels of 4.6% (aged 60-89 years), 4.2% (aged 60-74), and 6.6% (aged 75). -89 years).

According to the data obtained, in the population 60-89 years old, the prevalence of MI and other CVDs was: AMI1 - 8.3% (in 60-74 years old 3.5% and in 75-89 years old - 30.7%; $p < 0.001$), IHD angina pectoris - 30.6% (in 60-74 years - 33.3% and in 75-89 years - 17.6%; $p < 0.05$), MI2 - 9.6% (including in 60-74 years -9.8% and in 75-89 years - 9.0%; $p > 0.05$), hypertension - 50.9% (in 60-74 years - 52.6% and in 75-89 years - 42 .9%; $p > 0.05$) and CRHD - 0.6% (in 60-74 years old - 0.8% and in 75-89 years old - 1.4% ($p < 0.05$).

Thus, the data obtained confirm that all forms of MI among the elderly population occur with a prevalence rate of 17.9% (in the group of elderly people - 13.3% and in the elderly population - 39.7%; $p < 0.001$). With the age of older people, the detection of MI increases by 26.4%, i.e. 3.5 times ($p < 0.001$). Our data differ from the data of researchers from far abroad, but are identical to the results obtained in the modern population in the CIS [108; pp.23-29].

In our study, elderly and senile men had higher rates of MI in general and AMI1 in particular. In women, healing/healed forms of this pathology are more often noted. This conclusion also does not contradict the literature data. According to modern literature data, there is still conflicting information about the influence of gender characteristics on the incidence of AMI [78; pp.1190-1201, 79]. To date, gender differences in this indicator in patients with MI in the regions of Uzbekistan remain poorly studied. The study examined the prevalence of modifiable risk

factors for AMI among the unorganized elderly and senile population (poor nutrition, NFA, smoking, UA). It was noted that among elderly people, the most common dietary disorders are in the form of NPOF (63.4%), PPSvnF (26.3%) and HF (25.9%).

A comparative assessment of the prevalence of poor nutrition among older men and women in the age groups 60-89 years showed that, in general, the incidence of POF among men is higher (73.1%) than among women (53.4%). And PPSvnZh and HF are slightly lower (21.6% and 32.1% each). It can be noted that elderly and senile residents of the studied region have statistically significantly high rates of poor nutrition – NPOF, PPSvnF and HF. Of course, as stated in studies, it is necessary that purchased food products have labels indicating their calorie content and nutritional composition [8, 103; p.146-151].

A comparative study of the prevalence rates of NFA, smoking and UA in various age groups of men and women of elderly and senile age revealed that their frequency of detection increases with age. In general, the data obtained indicate, firstly, the high prevalence of the studied risk factors and, secondly, show the promise of periodic epidemiological studies in relation to pre-nosological diagnosis and prevention of cardiovascular events, in particular acute myocardial infarction in elderly and senile age . Let us note the importance, first of all, of non-drug medical measures in relation to AMI, in particular, rational nutrition, physical activity, combating smoking and UA among endangered groups of the population, i.e. elderly and senile people. We have to admit the results of modern studies that clinical data today do not provide grounds for lifelong drug prophylaxis aimed at the main above-mentioned risk factors for AMI, and experimental preventive studies have not yet provided evidence of the effectiveness and evidence of the safety of long-term drug prophylaxis [Shkhvatsabaya I.K. et al., 1977].

Research in recent years has argued that biological and metabolic-endocrine risk factors are also the main causes of acute CVD, including AMI, which determines a high mortality rate among the population [21; pp.218-219, 42; p.19-27]. Therefore, we analyzed these factors - BODFR (hypertension, hyperglycemia,

hyperglycemia, BMI, obesity) among the elderly and senile population. The prevalence of BADFR in the population aged 60-89 years has regional characteristics and is characterized by the following indicators: hyperglycemia (HG) - 21.9%, hypertension - 57.5, BMI with obesity - 76.0%, hyperglycemia - 82.6% and NFA - 90.8%. In general, there is a high prevalence of NFA, HCS and IMTO; in comparison with them, HH ($p < 0.001$) and hypertension ($p < 0.05$) were detected with significantly lower prevalence.

Next, the relationship between MI and the main risk factors (UA, smoking, BMI o, NPOF, GG, HCS, NFA, AG) was studied in two groups - women and men of elderly and senile age. It was revealed that HCS (92.5% in the presence of MI and 7.5% in its absence; $p < 0.001$) and BMI with obesity occurred with a high frequency in the MI group (72.9% and 27.1% each, respectively; $p < 0.01$). The percentage of prevalence of hypertension is lower in the group with MI (48.9%) than without MI (51.1%); $p > 0.05$. The high prevalence of NFA (94.8% and 5.2%, respectively, in the MI group and without it) in patients with MI is statistically highly significant ($p < 0.001$) for the examined population of elderly and senile people. HH occurred with a lower frequency in the group with MI (30.5%) than without MI (60.5%). The percentage of smokers is also lower in the population with MI (221%) than in those without MI (77.9%). To a certain extent, this is explained by the fact that older people who have had an AMI quit smoking. Smoking is without any doubt a risk factor for CVD/MI, this statement was made on the basis of epidemiological (prospective) studies [40; pp.45-48, 51; pp.13-26, 61; p.671-719]. The percentage of alcohol drinkers is also lower in the group with MI (46.6%) than in the group without MI (53.4%). This is also explained by the fact that people who have CHD/AMI stop drinking alcohol. It also follows from our data that NPOF in patients with MI was recorded significantly more often (63.4%) than in people without MI (36.6%); $p < 0.05$. This means that in elderly and senile people, more frequent monitoring of the rationality of a healthy (sanogenic) diet is especially necessary.

In general, the high percentage of prevalence of the main risk factors and their connection with AMI, demonstrated in this work, is a favorable prerequisite for carrying out treatment and preventive programs in the elderly and senile population.

Note that the distribution of these leading risk factors for AMI was similar for the two age groups (60-74 years and 75-89 years) of the studied populations.

Over 5 years of observation (from 2015 to 2019), the average annual rate of primary incidence of AMI for the population 60-89 years old in the Bukhara region and the city of Bukhara was 0.015% and 0.007%, respectively (p <0.05). When comparing the first (2015) and last year of observation (2019), the average prevalence of AMI was significantly higher in the latter (almost 2 times). The prevalence rate of AMI in the examined group of people with AMI (94 people) was statistically significantly higher in elderly men than in women. Over five years of observation, the primary incidence of AMI in men increased by 27.9% or by 5.6% annually, while in elderly and senile women the opposite was observed - a decrease in the incidence of AMI by 3.2 times or by 27.9%. These data are partially consistent with literature data [29; pp.4-10, 50; pp.6-17, 106; p.3-220].

It was noted that gender differences are significantly significant in mortality rates from AMI. In the age group 60-74 years, the mortality rate is 8.0% higher in men (71.1%) than in women (63.1%). And in the group of 75-89 years, mortality from MI is 8.0% higher in women (36.9%) than in men (28.9%).

According to autopsy data, in 66.7% of elderly patients, deaths occurred due to primary MI; in 22.2% of patients, the main causes of unfavorable outcome were "non-coronarogenic" factors or cases of AMI. It turns out that the elderly and senile population lives with insufficiently resolved problems until nosological/early diagnosis and prevention of AMI, which are practically not discussed at the population level. As a result, this can lead to unfavorable epidemiological situations: using the example of Bukhara, according to our data, up to 74.1% in elderly and senile people (in men - up to 82.8% and in women - up to 66.7%).

Next, we analyzed the course of AMI in 292 elderly and senile patients by copying data from the medical records of the departments of cardiology and cardiac intensive care unit of the Bukhara branch of the Republican Research Center for Emergency Medicine of the Ministry of Health of the Republic of Uzbekistan in 2017-2019. The data obtained show that the clinical manifestations of AMI in the IVC and NSV are characterized by specific features. The atypical clinical variant predominates - 37.0% in the form of status asthmathicus, 38.0% - in the form of a non-painful form and 5.0% - in the form of an arrhythmic form, compared with the typical course of AMI. Thus, the atypical course of AMI was established in 75.0% of elderly patients, and the typical course – in 25.0% (p <0.001).

It was established that the frequency of various forms of AMI based on ECG changes is significantly higher in the population of elderly and senile age and was: in men IVC and NSV - AMI only based on ECG 3.5% and 14.6%, and in women 6.7% and 2.0%, respectively (p <0.05).

These data indicate more frequent ECG monitoring in the elderly population and are consistent with the data of other researchers [24; p.188, 101; p.641-647].

In a retrospective pharmacoepidemiological (PE) analysis of 292 case histories of patients with AMI aged 60-89 years, who were treated in the emergency cardiology and cardiac intensive care departments of the Charitable Foundation of the Republican Research Center for Emergency Medicine of the Ministry of Health of the Republic of Uzbekistan, it was found that 12 classes of drugs were used for pharmacotherapy of AMI. In 89% of elderly patients, medications were prescribed, the use of which should be avoided in people of this category with AMI (88.0% of patients used anti-inflammatory nonsteroidal drugs, 1.0% of patients used cardiac glycosides). From the results of our analysis it also follows that the average number of drugs received by one patient on certain days of hospital stay was 9–10 (in the form of tablets) and 5 drugs for parenteral use, i.e. Polypharmacy was observed. It has been suggested that the high percentage of mortality from AMI in elderly and senile people may be associated with the lack of

adequate emergency pharmacotherapy to a certain extent. To combat these "medical/pharmacoepidemiological risk factors for AMI" and optimize drug therapy, it is necessary to apply innovative tools for its optimization. We have developed such an approach and/or a regional tool for optimizing existing methods for the prevention and treatment of AMI among the elderly and senile population. When using this innovative algorithm for the prevention and optimization of treatment of AMI among the NPV and NSV populations, the following are predicted:

1) reduction of the pathogenic to nosological background of AMI to 74.1% and its "end points" annually – to 5.7%;

2) improving the detection of AMI - by 75.0% and ensuring drug safety by up to 89.0% per year;

3) improving the supply of Vitae with drugs up to 80% per year.

PRACTICAL RECOMMENDATIONS.

1. The survey methods tested in this study for the early detection of AMI are recommended for widespread use in in-depth preventive examinations of the elderly and senile population with disabilities for the active use of complex methods for diagnosing and treating AMI. The medical screening effect from using this method, according to our calculations, ranges from 85.0% to 90.0%.

2. Recommendations developed based on the results of the study and pharmacoepidemiological aspects of AMI contribute to a sharp increase in the quality of treatment, primary and secondary, as well as tertiary drug prevention of this disease in elderly and senile patients.

3. "An innovative algorithm for the prevention and optimization of treatment of AMI among the elderly and senile population," developed based on the results of this study, is recommended for widespread use at all levels of practical healthcare.

ANNOTATION OF THE MONOGRAPH

Cardiovascular disease has been the leading cause of death worldwide for the past 20 years, with nearly 9 million people dying from the disease in 2019, according to the World Health Organization. Cardiovascular diseases have not only important medical, but also social and economic significance, as they are associated with a significant proportion of so-called premature mortality.

"... Existing systems of total regular medical examination to identify risk factors for the development of acute myocardial infarction in the population give positive results, but in most cases they do not justify themselves, as they require large financial, structural, and organized costs, with little effectiveness" (Kristian L. et. al., 2016).

At the global level, in order to achieve high efficiency in screening, early detection and selection of prevention and treatment tactics at the

population level and in patients with cardiovascular diseases (CVD), including acute myocardial infarction (AMI), a number of scientific studies are being conducted in leading scientific centers of the world. Results were obtained from studying the effectiveness of population-based and prevention programs; the advantage of screening prevention was shown based on the results of an epidemiological study (WHO, 2017; Kristian L. et al., 2016; Li Li. et al., 2018).

To optimize known methods of prevention and treatment of AMI, modern medicine needs accurate and evidence-based epidemiological information (Walid Jomaa et al., 2016).

In Uzbekistan, as in most countries, AMI remains the scourge of men after 45 years of age and women after 55 years of age (Nikishin A.G., 2012); the number of patients with AMI in old and senile age is increasing. Actively organized epidemiological and preventive programs for improving the health of the elderly and senile population in various regions of the country, including arid zones, can significantly reduce the morbidity and mortality from AMI. (Krasnova N.M., 2017).

Consequently, the data show the need for mass epidemiological studies among the elderly and senile population for early and complete detection, as well as real effective prevention of oligosymptomatic AMI.

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