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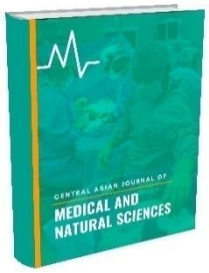

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The Role of Risk Factors in the Development of Coronary Heart Disease in Young Adults and Ways to Prevent Them in Inpatient Settings

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Abstract: Cardiovascular disease continues to be the leading cause of mortality and disability in the world's population and the proportion of deaths due to coronary heart disease (CHD) is 25% to 50%. IHD is a chronic disease with a multifactorial etiology. Risk factors such as high blood pressure, overweight or obesity, hyperglycaemia and hyperlipidaemia contribute to the development of CVD including IHD.

Keywords: coronary heart disease, young age, risk factors

Introduction. Cardiovascular disease (CVD) continues to be the leading cause of mortality until the present day, with a 25-50% mortality rate due to coronary heart disease (CHD) [1, 4]. In addition, current morbidity and mortality rates are increasing in the younger population under 45 years of age, and the primary manifestations of atherosclerosis are increasingly identified around the age of 20 years. Numerous studies have shown that the incidence of CHD in men under 45 years of age is 1.4-1.5 times higher than in women of this age [1, 3, 8]. The manifestation of CHD at a young age has its own clinical features, as young patients with complaints of retrosternal pain rarely seek medical attention compared with older patients [2, 4, 9], and in these patients the history and characteristics of chest pain rarely indicate ischaemic myocardial infarction [3, 7, 10]. In young men, the history and type of chest pain are most often less reliable indications of myocardial ischaemia. A short history of coronary artery disease precedes angina attacks in young men and numerous overseas studies have reported that only 24% of young men have sought medical attention for an intense angina attack. Moreover, 69% of young men had no previous history of angina pectoris before the onset of the disease [14, 19].

CHD is a chronic disease with a multifactorial etiology. In many countries, unhealthy diet with increased intake of digestible carbohydrates, transgenic fats and low intake of fruits, seafood, fiber against the background of hypodynamia, chronic stress, overexertion can contribute to the development of LDL, metabolic syndrome (MS), obesity, DM [12, 18]. In addition to these factors, it has been noted that young workers most often take on extra and overtime daily work, they always have a high general pace of life, they are more often exposed to chronic stress, depression at work, which in turn can lead to smoking, overeating, drinking alcohol and energy drinks [14, 18, 20]. Unfortunately, screening for these modifiable FRs will not always identify men at a young age who may later develop

the disease with these FRs, and this in turn stimulates the search for other new FRs and their combinations [13, 15, 16].

Factors such as high blood pressure, overweight or obesity, hyperglycaemia, hyperlipidaemia contribute to the development of CVD, including CHD. According to the Framingham study, current knowledge of FRs contributing to CVD was presented, which included smoking, AH, LDD, DM, menopause, overweight/obesity, hypodynamy, atrial fibrillation, stress, heredity, etc. and protective factors high or moderate physical activity, diet high in fruits and vegetables, HDL and others [1, 19, 20]. According to 2021 statistics, about 7.2 million people die annually from tobacco use, including the effects of second-hand smoke), about 4.1 million people die from excessive salt/sodium intake, about 3.3 million people die from alcohol use and about 1.6 million people die from insufficient or low levels of physical activity [17].

Thus, study of all above mentioned significant FR associated with early development of CHD in young patients will help to expand understanding of the causes, progression and peculiarities of disease course that will be the most important for improvement of early diagnosis, therapy, development and implementation of preventive programs in this category of patients.

The aim of the study: to investigate the influence of risk factors in the development of coronary heart disease in young adults in inpatient settings.

Materials and Methods: This study was conducted in Samarkand Branch of Republican Scientific Center for Emergency Medical Care (RSCEMC). The study included 110 patients who were admitted with the diagnosis of unstable angina pectoris at the age of 21 to 44 years. All patients underwent general clinical examination, history was collected, patients' complaints were taken into account, general blood test, urine test, biochemical blood test (lipid spectrum), ECG, EchoCG and Holter-ECG were performed. All patients were also questioned using the ODA23+ motor activity questionnaire to assess the level of motor activity.

Results: all patients with CHD depending on sex were divided into 2 groups: the 1st group included 65 (59,1%) male patients, the 2nd group included 45 (40,9%) female patients. The average age of the patients was 39.3±4.22 years. The control group consisted of 52 volunteers (Figure 1).

The frequency of FRs in patients with stable angina pectoris and in the control group was studied as follows. Active smoking in group 1 was noted in 40 (61,5%) patients, in group 2 - in 3 (6,7%) patients, in control group - in 31 (59,6%) patients, passive smoking was noted in group 1 in 5 (7,7%) patients, in group 2 in 20 (44,4%) patients, in control group passive smoking was noted in 12 (23,1%) persons. Alcohol consumption in group 1 was registered in 19 (29%) patients, in group 2 - in 2 (4,4%) patients, in control group - in 13 (25%) patients**.**

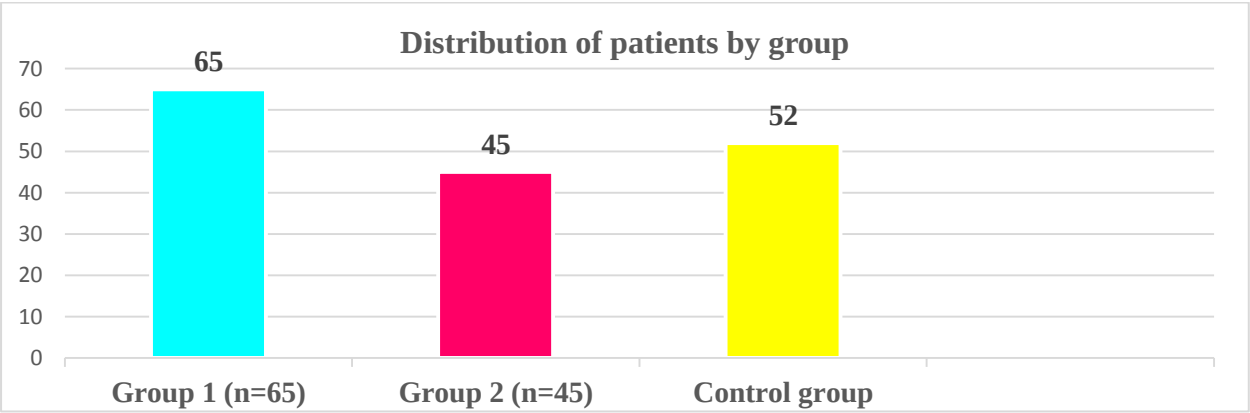

Figure 1. Distribution of patients by group

In the 1st group 23 (35,4%) patients were chronically stressed, in the 2nd group - 16 (35,6%) patients, in the control group - 12 (23,1%) patients were stressed. Hereditary predisposition was found in 21 (32.3%) patients in Group 1, in 17 (37.8%) patients in Group 2, in 19 (36.5%) cases of the control group. Diabetes mellitus (DM) was detected in Group 1 in 12 (18,5%) patients, in Group 2 in 8 (17,8%) patients, hypertensive disease (HD) was noted in Group 1 only in 10 (15,4%) patients, in Group 2 in 9 (20%) patients, in the control group incidence of these diseases was not noted. Overweight was seen in 24 (36.9%) cases in Group 1, in 28 (62.2%) cases in Group 2, in 23 (44.2%) cases in the control group (Figure 2).

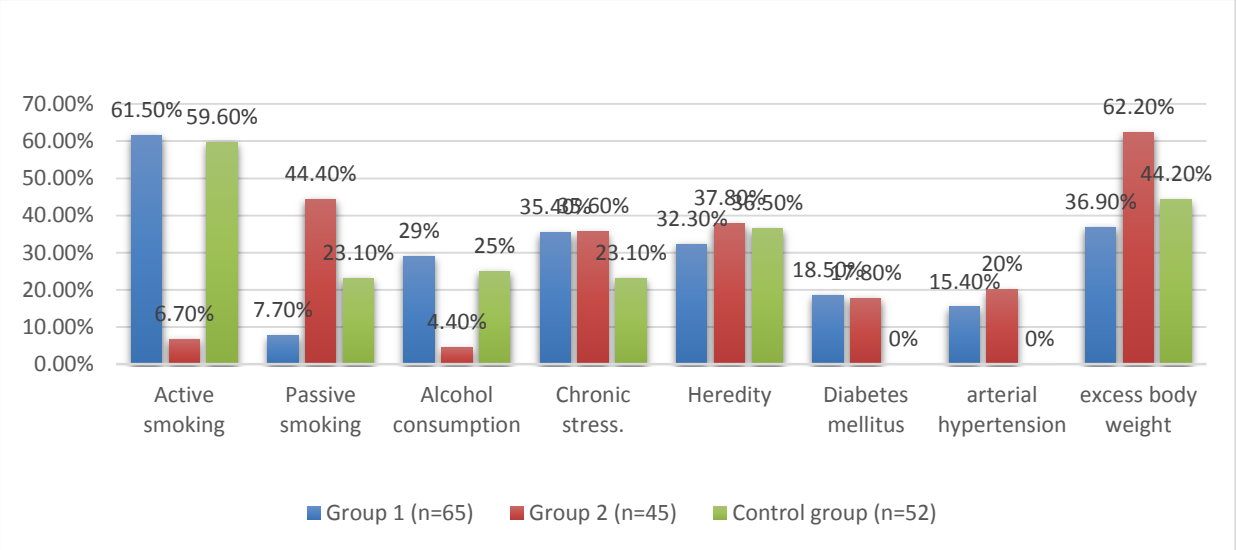

Figure 2. Frequency of risk factors

During the interview, many patients were found to have improper dietary habits: failure to observe the diet, caloric frequency, abuse of baked goods, fast food and sandwiches, consumption of high-fat foods, frequent consumption of convenience foods, carbonated drinks, refined carbohydrates, and consumption of insufficient amounts of fruit (less than 3 servings per day). In Group 1 patients poor diet was observed in 34 (52.3%) patients, in Group 2 in 28 (62.2%) patients, and in the control group in 31 (59.6%) individuals (Figure 3).

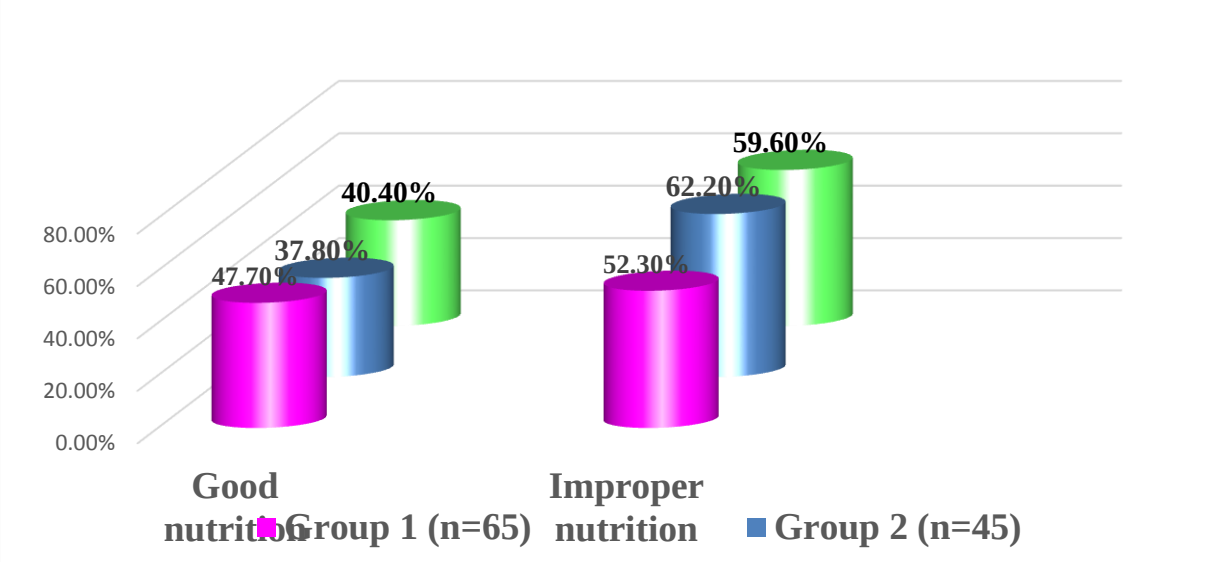

Figure 3. Distribution of patients according to nutrition

The questionnaire of patients by means of questionnaire ODA23+ has been noticed that high motor activity was 18,1 % less in the 2nd group in comparison with patients in the 1st group and has made 19,2 % and 37,3 % accordingly (p<0,001), whereas in control group this parameter has made 46,8 % (p<0,05). Moderate motor activity was found in 65 (51,6%) patients in Group 1, 60 (57,7%) (p<0,001*) in Group 2 and 53 (48,6%) in the control group (p=0,07). Low motor activity was detected in Group 2 patients 12% more than in younger patients, 23% and 11% respectively (p<0,001), while in the control group the figure was 4.6% (p<0,05*), (Figure 4).

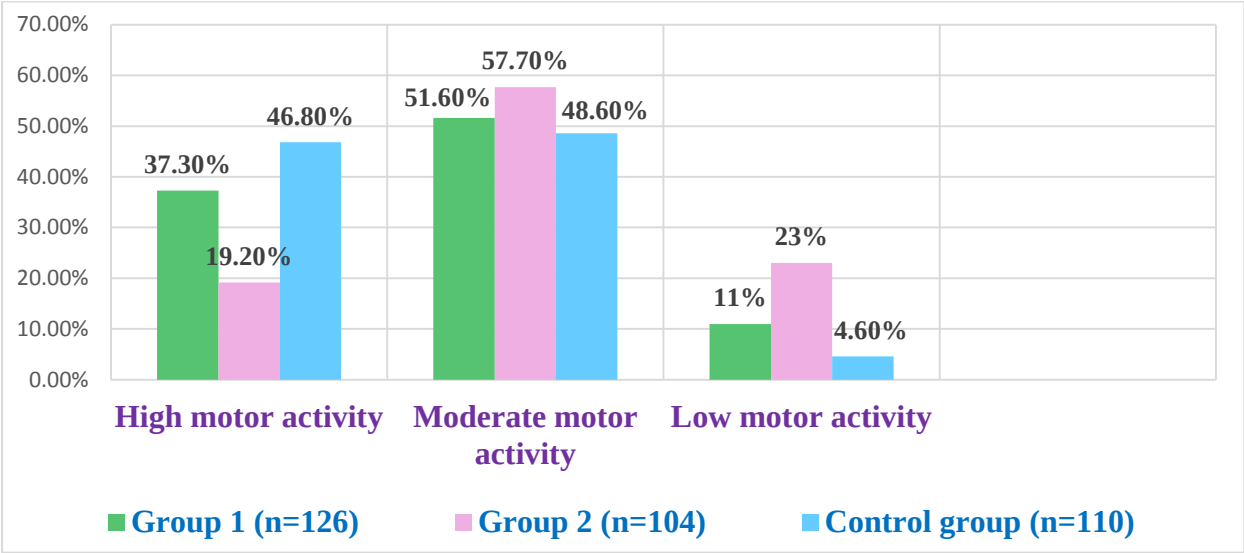

Figure 4. ODA23+ scores in patients with CHD and controls

Conclusions: thus, male gender prevailed among patients with CHD at a young age, which is one of the unmodifiable FRs. Also among the FRs the most common are smoking (active, passive), overweight, hypodynamia, stress, poor diet, low physical activity, diabetes mellitus, etc. In the management of these patients it is necessary to identify these FRs early and to combat these FRs contributes to the reduction of fatal outcomes and reduces disability from cardiovascular diseases.

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