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THE ROLE OF DYSLIPIDEMIA IN THE DEVELOPMENT OF CORONARY HEART DISEASE IN YOUNG AND ELDERLY MEN

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Annotation
In this study, the role of dyslipidemia in the development of coronary heart disease (chd) in men at a young age was studied. The objects of the study were 230 patients with coronary artery disease hospitalized in the departments of somatic resuscitation, emergency therapy no. 1 and 2 of the samarkand branch of the republican scientific center for emergency medical care (sb rscemc) in the period 2018-2021. According to the results, it was revealed that in young patients, among the lipid profile indicators, there was an increase in low-density lipoprotein (ldl) and triglycerides (tg), in elderly patients, an increase in total cholesterol (tc) was noted.

Keywords: ihd, dyslipidemia, triglyceride, low density lipoprotein, total cholesterol.

Introduction

Cardiovascular disease (cvd) ranks first in economically developed and developing countries in the structure of morbidity and mortality [1, 4, 14]. According to many studies, recently around the world there has been a continuous upward trend in the number of male patients with coronary heart disease (chd) and this disease is an important socio-economic problem due to early disability and early mortality [5]. Males constitute the main active labor and production resources of society, which determine the socio-economic prospects of any state [9].

Ihd is considered as a polyetiological disease, manifested by acute or chronic mismatch between myocardial oxygen demand and its delivery through the coronary artery (ca). The most important rf in the development of atherosclerosis and its complications are lipid metabolism disorders/dyslipidemia (dlp). Dlp is an imbalance between atherogenic and non-atherogenic lipoproteins, in which blood concentrations of lipids/lipoproteins are outside the normal range [4, 16]. Dlp associated with asymptomatic atherosclerotic changes in the coronary arteries are detected already at a young age and steadily progress over the next decades, and the incidence of atherosclerotic changes in the coronary arteries in middle age approaches 100% [8, 17].

For many years, much attention has been paid to the early detection and correction of elevated levels of total cholesterol (tc) and low-density lipoprotein (ldl), since they are the main lipoproteins that contribute to the early development of atherosclerotic plaque [2, 14, 15]. There is evidence that high levels of ldl, increased levels of small particles of ldl, very low density lipoprotein (vldl) and low levels of high density lipoprotein hdl are the three main lipoproteins at high risk of developing coronary atherosclerosis and associated complications [6, 10, 12].

According to a number of studies, it has been shown that a decrease in the concentration of total cholesterol in the blood plasma by 10% contributes to a decrease in the incidence of coronary artery disease by 25% after 5 years and a decrease in ldl by 1 mmol/l is accompanied by a decrease in cardiovascular diseases (cvd) by 20% [5, 13]. An increase in the level of total cholesterol will make a great contribution to the development of premature mortality in the population and is 23%. Every fifth man has a decrease in hdl levels, every third man has hypertriglyceridemia [6].

Among young patients with coronary artery disease, lower levels of hdl and higher levels of triglycerides (tg) were noted, in elderly patients there are higher rates of total cholesterol, and this once again states that dlp in males is one of the important risk factors in the development of coronary artery disease [18]. It was noted that in patients with obesity (bmi 30 kg/m2 or more), atherogenic dlp often develops [20, 25] and the concentration of triglycerides in the blood increases and the level of hdl decreases, in parallel with this, the release of free fatty acids from adipocytes into the bloodstream increases. , which is accompanied by an increase in the synthesis of vldl in the liver [3,15, 24]. In this process, there is a low activity of peripheral lipoprotein lipase, which is not able to fully cleave particles rich in th [19, 22, 23].

One of the factors determining the level of lipids in the blood is the peculiarity of nutrition, in which the use of an increased amount of transgenic fats in the diet contributes to an increase in the level of ldl, while the use of polyunsaturated fats in the diet significantly contributed to a decrease in the level of ldl and an increase in the level of hdl [19, 22 , 25]. In randomized clinical trials, a mediterranean diet and a low-fat diet were found to reduce ldl by 11% [10, 12, 16].

One of the urgent problems of modern cardiology is the development of early methods of diagnosis, prevention and adequate pathogenetic correction of atherogenic dlp. The study of the problems associated with subclinical atherosclerosis is considered important, because the detection and treatment of dlp in the early stages of the pathological process can potentially be reversible or significantly slow down its progression. In this regard, the development of optimal diagnostic and therapeutic

algorithms will help to effectively solve the problems associated with the atherosclerotic process.

Purpose of the Study

to study the role of dyslipidemia in the development of coronary heart disease in men at a young and old age.

Research Material

The object of the study was 230 patients with coronary artery disease hospitalized in the departments of somatic resuscitation, emergency therapy no. 1 and 2 of the samarkand branch of the rscemc in the period 2018-2021. Depending on age, the patients were divided into 2 groups. The 1st group included 126 patients at a young age (from 18 to 44 years). The 2nd group included 104 elderly patients (from 60 to 74 years old). The control group consisted of 110 healthy individuals.

Inclusion Criteria

Men aged 18 to 44 years and aged 60 to 74 years with a confirmed diagnosis of coronary artery disease. Exclusion criteria: men aged 18 to 44 and 60 to 74 years old, in whom the diagnosis of coronary artery disease was excluded, patients with severe concomitant diseases.

Research Methods

The work used general clinical, instrumental, biochemical and statistical studies. When examining patients, bmi indicators were evaluated according to the brock formula recommended for evaluation by the who committee (1995).

Bmi=weight in kg/height in m2

Indicators of the blood lipid spectrum determined the content of: total cholesterol, ldl, tg, hdl, atherogenic coefficient. Determination of lipids in the blood was performed by a homogeneous enzymatic colorimetric method on a hitachi-902 biochemical analyzer. The coefficient of atherogenicity (coefa) was determined by the following formula:

Coefa=(ohs-hdl) / (hdl),

Where coefa is the coefficient of atherogenicity (in rel. Units). Normally, the coefficient of atherogenicity is within 2-3 units.

Research Results

When carrying out anthropometry, it was revealed that in patients in the 1st group, normal body weight was detected in 68 (53.9%) patients, in the 2nd group only in 12

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(11.5%) patients (p<0.001 *), in the control group it was found in 76 (69.1%) (p2<0.01*). Overweight in the 1st group was observed in 50 (39.7%) patients, in the 2nd group in 69 (66.3%) (p1<0.001*), in the control group it was found in 32 (29. 1%) men (p2<0.05*). Obesity of the 1st degree in the 1st group was detected in 4 (3.2%) patients, in the 2nd group in 15 (14.4%) (p<0.001*), in the control group it was noted in 2 (1 .8%) persons (p2>0.05*). Obesity ii degree in the 1st group was detected in 3 (2.4%) patients, in the 2nd group in 5 (4.8%), (p1>0.05). Obesity iii degree in the 1st group was noted only in 1 (0.8%) patient, in the 2nd group and in 3 (2.9%) patients (p1>0.05) (table 1).

Table 1 Characteristics of patients with nvs according to anthropometric data

Anthropometric indicators	1st group (n=126)	2nd group (n=104)	Control group (n=110)	Mann-Whitney-Wilcoxon тест p-value
BMI (кг/м^2)	24,6±3,44	27,7±2,46	23,6±3,07	1vs2: p=0,04* 1vs3: p>0,05
normal body weight	68 (53,9%)	12 (11,5%)	76 (69,1%)	1vs2: p<0,001* 1vs3: p<0,01*
Overweight body	50 (39,7%)	69 (66,3%)	32 (29,1%)	1vs2: p<0,001* 1vs3: p<0,05*
Obesity I degree	4 (3,2%)	15 (14,1%)	2 (1,8%)	1vs2: p<0,001* 1vs3: p>0,05
Obesity II degree	3 (2,4%)	5 (4,8%)	0 (0%)	1vs2: p>0,05 1vs3: NA
Obesity III degree	1 (0,8%)	3 (2,9%)	0 (0%)	1vs2: p>0,05 1vs3: NA

During the survey, many patients revealed malnutrition: non-compliance with the diet, frequency, calorie content, there was an abuse of bakery products, fast foods and sandwiches, the use of a large number of foods high in fat, the frequent use of convenience foods, carbonated drinks, refined carbohydrates and the use of insufficient amount of fruit (less than 3 servings per day). In patients of the 1st group, malnutrition was observed in 83 (65.9%) patients, in the 2nd group in 74 (71.2%) patients (p> 0.05), in the control group in 54 (49.1%) persons (p<0.05*) malnutrition was noted (fig. 1.).

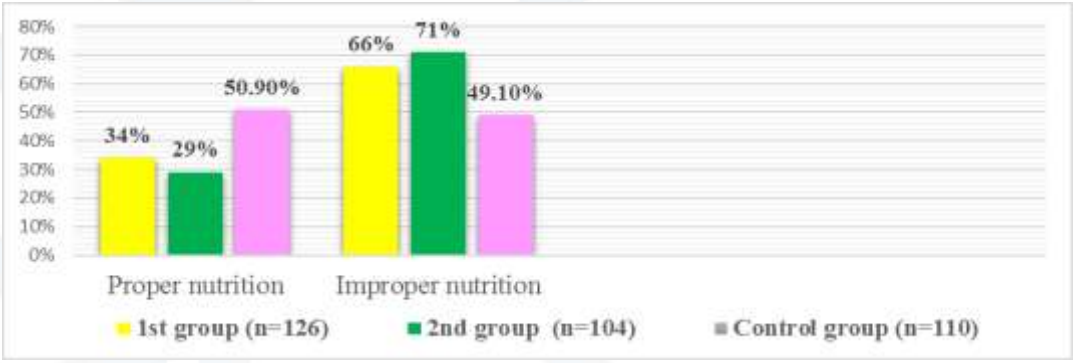

fig.1. The frequency of occurrence of risk factors associated with nutrition in the study groups

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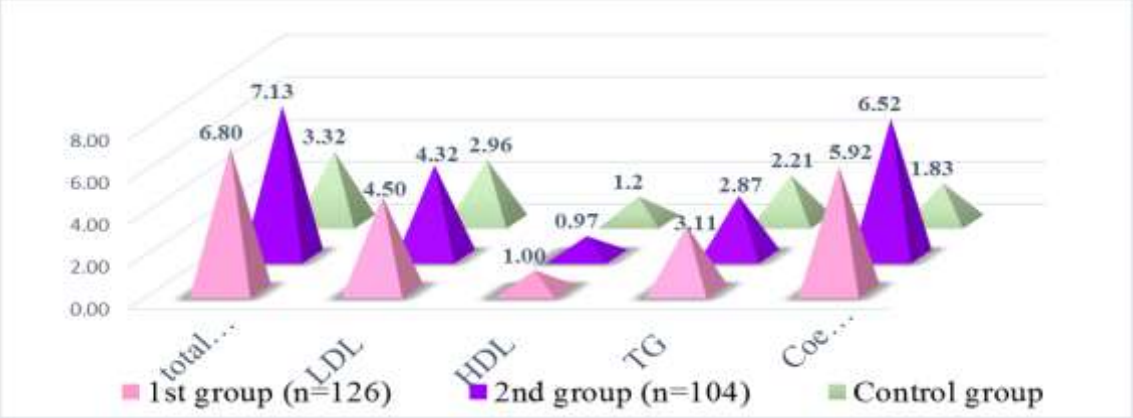
One of the objectives of this study is to assess the lipid status in patients with nvs, as a result of which we studied the lipid spectrum among young and elderly patients. According to the level of hdl, no statistically significant differences between the groups were found in the 1st group 1.0±0.15 mmol/l, in the 2nd group 0.97±0.16 mmol/l (p=0.034*), although this the indicator was below the norm in the elderly group, in the control group this indicator was 1.2±0.18 mmol/l (p<0.001*). As the results of the study showed, the levels of total cholesterol, ldl, tg in both groups were increased, total cholesterol in the 2nd group was increased by 0.33 mmol/l compared with the 1st group and amounted to 7.13 ± 0.75 mmol/l and 6.8±0.86 mmol/l, respectively, (p<0.001*), in the control group, total cholesterol averaged 3.32±0.60 (p<0.001*).
In patients in the 1st group, tg were significantly higher and amounted to 3.11±0.92 mmol/l, and in patients of the 2nd group it was 2.87±0.81 mmol/l, (p<0.0001 *), in the control group tg were 2.21±0.74 mmol/l (p<0.001*). Ldl in the 1st group was 4.5±0.83 mmol/l, in the 2nd group 4.32±0.62 mmol/l, respectively, (p=0.038*), which indicates a violation of lipid metabolism in patients c ihd, in the control group ldl averaged 2.96±0.83 mmol/l (p<0.001*). Ca was increased in both groups, which was 5.92±1.26 in the 1st group, 6.52±1.2 in the 2nd group, 1.83±0.8 in the control group (p=0.03), (fig. 2).



Rice. 2. Lipid spectrum parameters in patients with coronary artery disease at a young and old age and in the control group

When analyzing the lipid spectrum indicators depending on the clinical manifestation of coronary artery disease in men at a young and elderly age, it was found that the highest levels of atherogenic lipoproteins were observed in patients with acute myocardial infarction (ami) compared with patients who were hospitalized with a diagnosis of new-onset angina pectoris and progressive tension angina. This suggests that in patients with high levels of ldl, total cholesterol, tg and low levels of hdl, it contributed to an earlier and more severe course of coronary artery disease, which were identified in patients with ami and acute coronary syndrome (acs) (table 2).

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For this reason, these patients need to carry out strict control of body weight and the level of ldl, total cholesterol and tg, since dyslipidemia can lead to formidable complications themselves and can be the cause of early disability in the young population.

Table 2 Lipid spectrum parameters depending on the clinical variant of ihd in the 1st and 2nd groups

Lipid spectrum (mmol/l)	Patients with new onset angina pectoris	Patients with progressive angina		Patients with ACS with ST elevation		Patients with ACS with ST depression		Patients with AMI with Q		Patients with AMI without Q	
	1st group	1st group	2nd group	1st group	2nd group	1st group	2nd group	1st group	2nd group	1st group	2nd group
total cholesterol (3.6-7.8 mmol/l)	6.35± 1.04	6.83± 1.12	7.15±1.09	7.04 ± 1.07	7.18± 1.14	7.27 ±0.641	6.27± 1.40	7.99± 0.645	7.64± 0.897	6,16± 2,49	-
P-value	-	0,13		>0.65		>0.05		>0.40		-	
LDL (2.02-4.79 mmol/l)	4.38± 0.793	4.30± 0.9	4.6± 0.7	4.66 ± 0.771	4.46± 0.739	5.06 ± 0.741	3.88± 0.703	4.98± 0.086	4.86± 0.806	4.92± 0.021	-
P-value	-	0,06		0,32		<0.001*		>0.64		-	
HDL (0.72-1.63 mmol/l)	1.07± 0.168	1,0 ± 0,1	1,0± 0.2	0.982± 0.161	0.938± 0.116	0.957± 0.132	0.966± 0.087	1.10± 0.187	0.908± 0.106	1.10± 0.148	-
P-value	-	0,57		0,25		>0.85		>0.08		-	
TG (0.5-3.61 mmol/l)	3.06± 0.995	2.98± 0.983	3.34± 0.94	3.32 ± 0.914	3.28± 0.852	3.38 ± 0.948	2.43± 0.986	3.38± 0.724	3.36± 0.917	2.72± 1.45	-
P-value	-	0,056		0,87		<0.04*		>0.96		-	
Atherogenic coefficient no more than 3	6.1± 1.1	6.6 ± 1.16	6.93± 1.08	6.82 ± 1.07	6.96± 1.16	7.08 ± 0.652	6.02± 1.42	7.77± 0.631	7.44± 0.925	8.44± 1.01	-
P-value	-	>0.05		>0.64		>0.06		>0.44		-	

Conclusions

Thus, the analysis of the results of the study on the risk factors of these groups showed that patients with chd at a young age in most cases have the same risk factors as patients with chd in the elderly, which allows us to regard them as potential candidates for an earlier and more severe disease. Course of ihd in the future. Quite frequent risk factors among young people are overweight/obesity, malnutrition, which can be corrected.

When analyzing the lipid profile among patients with coronary artery disease, it was shown that ldl in the 1st and 2nd groups were almost equally elevated compared to the control group and amounted to 6.8±0.86 and 7.13±0.75 mmol/ l, tg in patients of the 1st group were significantly higher and amounted to 3.11±0.92 mmol/l, and in patients of the 2nd group this indicator was 2.87±0.81 mmol/l.

The lipid profile indicators for the clinical variants of unstable angina and ami were statistically significant, so in patients with new onset and progressive angina pectoris, atherogenic lipoproteins were lower compared to those in patients with ami at a young and elderly age. High levels of atherogenic lipoproteins and indicators of the atherogenic coefficient contributed to the early development of acs and ami, which is important for the correction of these disorders.

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