intensivnogo promyshlennogo regiona (megaproekty) i global'nogo izmenenija klimata [Solomonov N.G., Egorov I.Ya., Chernyavsky V.F. Modern condition and epidemiology the for ecastone specially dangerous infections in territory of Yakutia in conditions of intensive industrial region (megaprojects) and global change of a climate], Materialy IX Mezhdunarodnogo simpoziuma po razvitiju holodnyh regionov, Jakutsk, 2010, 228 s. [Materials of IX the International symposium on development of cold regions, Yakutsk, 2010, 228 p.].

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ORIGINAL RESEARCHES

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COMPLIANCE TO MEDICATION OF PATIENTS WITH PREVIOUS Q - POSITIVE MYOCARDIAL INFARCTION

ABSTRACT

In the article the issue of compliance to medication treatment of patients with previous Q - positive myocardial infarction within one year after discharge from the hospital is considered. 113 persons were included in the research. The control was conducted after 6 and 12 months. Lower compliance to treatment was noted concerning all groups: β-adrenergic blockers, APF/ARA inhibitors, double antithrombocytic therapy, with a greater proportion of reducing statins (50 %).

Keywords: secondary prevention, compliance.

INTRODUCTION

According to the WHO estimation, over 17 million people die from cardiovascular diseases (CVD) annually in the world. It is expected that CVD mortality rate will reach about 25 million people a year in the world by 2020 [2,6]. In Russia the death rate from blood circulation illnesses remains high and its share in the total mortality of the population for the last years has amounted to 59,1 % [1]. The current situation in Russia has been characterized by the high mortality rate in the country for last 15 years at the expense of young, able-bodied and reproductive age. According to many researchers, frequency rate of new cardiovascular complications and the mortality cases is noted to be the highest within the first 3 months after myocardial infarction (MI). Both patients with previous acute myocardial infarction and even patients discharged for further ambulant therapy have high risk of cardiovascular death and repeated MI [4,7,9].

The insufficient prophylaxis oriented on preventing the development and progression of the disease can be one of the reasons of high mortality rate from CVD and repeated MI in our country, it being based on the scientific concept of risk factors and struggle against them [5]. The secondary prevention is impossible without regular medication intake proved the efficiency in numerous clinical researches [3].

Aim: to study the compliance to medication treatment of patients with previous Q-positive myocardial infarction, at the level of primary health care.

MATERIALS AND METHODS

The work included data from the clinical survey 'Secondary prevention of patients with previous Q-positive myocardial infarction'.

The set of clinical samples was conducted in the department of urgent cardiology with a group of intensive therapy (DUC and GIT) of the Regional vascular centre (RVC) Republican hospital №2 - Centre of emergency medical care. The total amount of patients with Q - to positive MI, hospitalized since January 2013 till July, 2014 included 177 patients. Of them 64 patients withdrew from participation in the given research that states obviously their low compliance to the treatment. In this connection, 113 patients with Q - positive acute myocardial infarction from Yakutsk city were included in the survey. All patients signed the informed consent. The research report was approved by the local Ethical committee. Of 113 patients the transdermal coronary intervention was conducted at 99 (87,6 %).

Criteria for inclusion of patients in the survey:

- presence of Q-positive MI clinical and electrocardiographic signs;
- consent to the survey.

Criteria for exception of patients from the survey: development of lethality during hospitalization; acute cerebrovascular event within the last 12 months; comatose state; comorbidities: malignant tumor; nonresident patients; withdrawal from the survey.

For the division of patients into groups WHO age criteria were applied: from 25 till 44 years - young age, 45 - 59 years - middle age, 60 - 74 years - senior age, 75 - 89 years - senile age, 90 years and over - long-livers [5].

I group of able-bodied patients till 59 years consisted of 60 persons. 53 patients were included in II group at the age 60 and more senior - patients of retirement age.

AMI was diagnosed according to recommendations of the European society of cardiologists, 2012, based on clinical data, electrocardiographic results, significant increase in the level of cardiac enzymes in the blood and asynergy signs on the echocardiography.

According to the treatment standard of sharp coronary syndrome, the inpatients with AMI underwent the therapy including

nitrates, unfractionated or low-molecular heparin (under control APPT), preparations blocking β-adrenergic receptors, disaggregants, inhibitory angiotensin-converting enzyme, calcium antagonists and statins. Transdermal coronary interventions were conducted immediately after performing diagnostic transdermal coronary intervention (TCI).

When discharged the patients were recommended to carry out preventive actions, to change lifestyle as well as to take all the medical preparations.

The evaluation (control) of the general state and outcomes was conducted in 6 and 12 months later. The repeated examination after discharge included the following methods of the survey: electrocardiogram, EchoCG, control lipid profile tests, ALT, AST, blood sugar, urea and creatinine in blood serum.

Statistical analysis. Statistical data processing was conducted by means of the software package IBM SPSS statistics 19. The normal-theory check of quantitative signs in both groups was carried out with the use of Kolmogorov-Smirnov and Shapiro-Wilk's criteria. As the distribution of quantitative signs did not submit to the normal theory measures of central tendency of dispersion were presented in the form of a median and interquartile range in a format of Me (Q25; Q75). For statistical significances between groups nonparametric methods were used: Mann-Whitney method for 2 independent groups, a contingency table, Pearson's chi-squared test. Distinctions were statistically significant at p <0,05.

RESULTS AND THEIR DISCUSSION

The majority of patients of I group were males (81,7 %) and the middle age of the patients was equal to 52 [47,3; 56]. In II group, at mostly elderly patients no gender distinctions were noted and the middle age has made 64 [61; 70,5] years. According to literary data the MI higher prevalence rate is frequently revealed at men till 60 years, there as this parameter is identical at both male and female patients aged 60 and over, as obtained in our research.

After discharge from the hospital the control survey after 6 months revealed essential reduction of a share of the patients, who continued taking the appointed preparations. To some extent reducing the frequency of admission included preparations of all basic groups (Table 1): beta blockers, APF/ARA inhibitors, clopidogrel / brilinta. On 6th month after discharge there was decrease in frequency of clopidogrel / brilinta on average 14 %, β - blockers 25 % in both groups, APF/ARA inhibitors 31 % in I group and on 28 % in II group. The greatest 'loss' has been registered in the relation of statins as almost every second patient in both groups stopped taking the medication from this group.

The second control survey in 12 months has found out a little increase of the number of patients taking such recommended preparations as clopidogrel / brilinta, β-blockers and statins (Table 1). We consider that positive dynamics on the medication taking has probably been due to repeated consultation and repeated appointment of preparations on 6th month. But at the same time in comparison with the appointed therapy after discharge and in 12 months later, there was low compliance to the therapy remained. The reduction in the frequency of taking the preparations of all basic groups: clopidogrel / brilinta on 15 % at patients of I group and 16 % at patients of II group, β - blockers on 7 % and 16 %, APF/ARA inhibitors on 31 % and 26 %, statins on 14 % and 18 %, accordingly was noted.

According to the literary data progressive cardiac insufficiency at patients with previous Q–positive MI is noted despite the appointed therapy. In our work we have obtained similar outcomes when analyzing the patients, in these connection diuretics have been added to the treatment. So, for 12 months in both groups the number of taking diuretics increased. Due to the deterioration of IHD clinical course as the increase in exertional angina functional class, the number of the patients taking nitrates has increased, the share of taking nitrates among the patients of elderly group has sharply increased (Table 1).

When analyzing the withdrawal of the medicament treatment two principal causes have been noted: independent refusal and doctor's recommendation. The more detailed study of refusal causes in the groups of preparations revealed that among all cases the causeless independent withdrawal from β-blocker was in 94 % of cases in I group, at 86 % in II group, APF/ARA inhibitors in 82 % and 50 % of the cases, from clopidogrel / brilinta in 80 % and 25 %, from statins in 81 % and 68 % accordingly. It is necessary to note that 66,5 % of patients of retirement age have independently cancelled clopidogrel / brilinta because of its costly price.

Due to hypotonia APF/ARA inhibitors were cancelled by doctor's recommendation in I group - 9,1 % and in II second - 12,2 %.

Of all the analyzed patients, 13 patients (21,6 %) from the I group and 12

Table 1

Frequency of taking medicaments at the moment of discharge and under the control in 6, 12 months after previous Q - positive myocardial infarction

Preparations	Recommended when discharged (1)		P	Intake after 6 months (2)		p	Intake after 12 months (3)		P	P1-2		P1-3		P 2-3	
	Irp. n=60 (%)	IIrp. n=53 (%)		Irp. n=58 (%)	IIrp. n=50 (%)		Irp. n=58 (%)	IIrp. n=49 (%)		Abled	Retired	Abled	Retired	Abled	Retired
Aspirin	60 (100)	53 (100)	*	58 (100)	52 (100)	*	58 (100)	49 (100)	*	*	*	*	*	*	*
Zilt / brilinta	60 (100)	53 (100)	*	49 (86,0)	43 (86)	NS	49 (84,5)	41 (83,7)	NS	<0,05	<0,05	<0,05	<0,05	NS	NS
B–βλοχκερ	60 (100)	51 (96,2)	NS	43 (74,1)	38 (76)	NS	54 (93,1)	41 (83,7)	NS	<0,05	<0,05	<0,05	<0,05	<0,05	NS
PAAC inhibitors/Sartans	58 (96,7)	51 (96,2)	NS	40 (69)	36 (72)	NS	40 (69)	36 (73,5)	NS	<0,05	<0,05	<0,05	<0,05	NS	NS
Statins	60 (100)	53 (100)	*	29 (50)	23 (46)	NS	50 (86,2)	40 (81,6)	NS	<0,05	<0,05	<0,05	<0,05	<0,05	<0,05
Diuretics	13 (21,7)	20 (37,7)	NS	18 (31)	23 (46)	NS	25 (43,1)	26 (53,1)	NS	NS	NS	<0,05	NS	<0,05	NS
Nitrates	5 (8,3)	11 (20,8)	NS	6 (10,3)	16 (32)	<0,05	8 (13,8)	18 (36,7)	<0,05	NS	NS	NS	NS	NS	NS

Notes: NS – no significant statistical distinctions

patients (22,5 %) from the II were repeatedly hospitalized concerning repeated ACS or XCH decompensation in the course of 12 months. At the same time there were also lethal outcomes during the study: from I group 2 patients (3,3 %) and 4 patients (7,5 %) from II group. Of them 3 people died in a hospital with the diagnosis of repeated myocardial infarction in the first 6 months, and 3 persons died at home because of sudden cardiac death. When comparing «final points» in the groups no statistically significant distinctions (Table 2) were observed.

Table 2

Cardiovascular complications at patients with previous Q – positive myocardial infarction, in the course of 12 months

Data (n- 107)	I group		II group		P
	Abs. numbers	%	Abs. numbers	%	
Died	2	3,3	4	7,5	0,321
Repeated hospitalization due to ACS	5	8,3	8	16,3	0,242
Repeated hospitalization due to XCH	8	13,3	4	7,5	0,342

CONCLUSION

When discharged from the hospital all patients got recommendations about changing lifestyle, modification of risk factors as well as taking the medicaments: double antithromocytic therapies, β-blockers, APF/ARA inhibitors, statins and diuretics.

At the control after 6 and 12 months the majority of patients have independently withdrew a number of preparations. Especially it is necessary to point out the low compliance to taking statins. The majority of patients with previous myocardial infarction refused from the recommended treatment independently without any cause. The double antithrombocytic therapy was cancelled by the senile aged patients in most cases due to costly price of the medicaments.

In connection with the withdrawal of IHD medicaments the increase of functional class of exertional angina and XCH is noted as well as repeated hospitalization of the patients concerning ACS or XCH decompensation, some lethal outcomes are registered. According to the literary data the discontinuation of medicament therapy in the case of previous MI increases the cardiovascular death risk: the withdrawal of three preparations (aspirin, β - blockers, statins) - OP 3,81; one preparation (aspirin - OP 1,82; β – blocker- OP 1,96; statins - OP 2,86) [8].

The results obtained by us testify to the low compliance of patients with myocardial infarction to the recommended treatment and the insufficient work on secondary prevention of the recurrent myocardial infarction at the level of primary health care.

References

1. Bokeriya L.A. Al'ternativnye metody ocenki rasprostranennosti serdechno - sosudistyh zabolevanij i ocenki potrebnosti v medicinskih tekhnologiyah [Alternative methods of estimating cardiovascular diseases and requirement for medical technologies], Zdravoohranenie [Health care], 2006, №2, P. 37 - 44.

2. Efanov A.Y. Priverzhennost' pacientov, perenesshih ostryj koronarnyj sindrom, k modifikacii obraza zhizni, a takzhe priemu osnovnyh grupp medikamentoznyh preparatov [Compliance of patients with previous coronary syndrome, to modifying a way of life, as well as taking main groups of medicaments], Sbornik materialov okruzhnoj nauchno-prakticheskoj konferencii «Proekt YUgra-Kor v ramkah realizacii nacional'nogo proekta v sfere zdravoohranieniya na territorii Hanty-Mansijskogo avtonomnogo okruga-YUgry» [The collection of materials of district scientific-practical conference 'Yugra-Kor project within the national project realization in health care in the territory Hunty-Mansiysk independent district Yugra»], Surgut, 2010, P. 37 40.

3. Ehrlich A.D., Gratsiansky H.A. et al. Registr ostryh koronarnyh sindromov REKORD. Harakteristika bol'nyh i lechenie do vypiski iz stacionara [The Register of acute coronary syndromes RECORD. The characteristic of patients and treatment prior to hospital discharge], Kardiologiya [Cardiology], 2009, №7, P. 4-12.

4. Harchenko V. I, Virin M. M, Koryakin M. V, et al. Starenie naseleniya Rossii – odna iz prichin rosta smertnosti ot osnovnyh boleznej sistemy krovoobrashcheniya [Ageing of the population of Russia as one of the causes of increased mortality from basic circulatory system diseases], Problemy social'noj gigieny, zdravoohraneniya i istorii mediciny [Problems of social hygiene, public health care and history of history], 2006, №3, P.8-16.

5. Ehrlich A.D. Rezul'taty shestimesyachnogo nablyudeniya za bol'nymi s ostrymi koronarnymi sindromami v Rossijskom registre REKORD [Outcomes of six-monthly monitoring of patients with acute coronary syndromes in the Russian register RECORD], Kardiologiya [Cardiology], 2011, №12, P. 11-16.

6. Efanov A.Y., Nizamova D.F., Dorodneva E.F., Shalaev S.V. Effektivnost' korrekcii modificiruemyh faktorov riska IBS sredi bol'nyh, perenesshih ostryj koronarnyj sindrom. Priverzhennost' k terapii [Correction efficiency of IHD modified risk factors among patients with acute coronary syndrome. Compliance to therapy], Materialy «Chelovek i lekarstvo [Materials 'Man and medicine. The Ural Mountains], Tumen, 2010, P. 80.

7. Braun-wald's heart disease: a textbook of cardiovascular medicine, 9th ed./Bonow R., Mann D., Zipes D., Libby P. et al. - Philadelphia: Saunders-Elseiver; 2012.

8. Impact of medication therapy discontinuation on mortality after myocardial infarction./Ho PM1, Spertus JA, Masoudi FA, Reid KJ, Peterson ED, Magid DJ, Krumholz HM, Rumsfeld JS.//Arch Intern Med. 2006 Sep 25; 166 (17):1842-7.

9. Underestimated and underrecognized: the late consequences of acute coronary syndrome (GRACE UK-Belgian Study). Eur Heart J./Fox KA, Carruthers KF, Dunbar DR, et al. - 2010; 31:2755-2764.

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