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ASSESSMENT OF QUALITY OF LIFE OF PATIENTS AFTER PERCUTANEOUS CORONARY INTERVENTION IN LONG-TERM FOLLOW-UP

Soleeva Sitora Shaxobovna. Samarkand State Medical University. PhD.
e-mail: soleevasitora1984@gmail.com

Abstract

The aim of the study was to assess the dynamics of quality of life in elderly and senile patients after percutaneous coronary intervention (PCI) in a long-term follow-up. A retrospective analysis of 109 patients who underwent PCI was performed. Quality of life was assessed using the standardized SF-36 questionnaire. The data obtained showed a significant improvement in physical and psycho-emotional state indicators 6 months after the procedure. A decrease in angina symptoms and an increase in exercise tolerance were noted. The results confirm the effectiveness of PCI not only as a revascularization method, but also as a way to improve the quality of life in older age groups.

Key words: chronic ischemic heart disease, percutaneous coronary intervention, quality of life, elderly patients, long-term follow-up.

ОЦЕНКА КАЧЕСТВА ЖИЗНИ ПАЦИЕНТОВ ПОСЛЕ ЧРЕЗКОЖНОГО КОРОНАРНОГО ВМЕШАТЕЛЬСТВА В ДОЛГОСРОЧНОМ НАБЛЮДЕНИИ

Солеева Ситора Шахобовна
Самаркандский государственный медицинский университет. PhD
e-mail: soleevasitora1984@gmail.com

Аннотация

Целью исследования являлась оценка динамики качества жизни у пациентов пожилого и старческого возраста после чрескожного коронарного вмешательства (ЧКВ) в долгосрочном наблюдении. Проведен ретроспективный анализ 109 пациентов, перенесших ЧКВ. Оценка качества жизни осуществлялась с использованием стандартизированного опросника SF-36. Полученные данные показали достоверное улучшение показателей физического и психоэмоционального состояния спустя 6 месяцев после процедуры. Отмечено снижение симптомов стенокардии и увеличение толерантности к физической нагрузке. Результаты подтверждают эффективность ЧКВ не только как метода реваскуляризации, но и как способа повышения качества жизни у лиц старших возрастных групп.

Ключевые слова: хроническия ишемическая болезнь сердца, чрескожное коронарное вмешательство, качество жизни, пожилые пациенты, долгосрочное наблюдение.

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UZOQ MUDDATLI KUZATUVDA TERI OSTI KORONAR ARALASHUVDAN KEYIN BEMORLARNING HAYOT SIFATINI BAHOLASH

Soleyeva Sitora Shaxobovna
Samarqand davlat tibbiyot universiteti. PhD
e-mail: soleevasitora1984@gmail.com

Abstrakt

Tadqiqotning maqsadi uzoq muddatli kuzatuvda teri orqali koronar aralashuvdan (PCI) so'ng keksa va keksa bemorlarda hayot sifati dinamikasini baholash edi. PCIdan o'tgan 109 bemorning retrospektiv tahlili o'tkazildi. Hayot sifati standartlashtirilgan SF-36 anketasi yordamida baholandi. Olingan ma'lumotlar protseduradan 6 oy o'tgach, jismoniy va psixoemotsional holat ko'rsatkichlarida sezilarli yaxshilanishni ko'rsatdi. Angina belgilarining kamayishi va jismoniy mashqlar tolerantligining ortishi qayd etilgan. Natijalar PCI ning nafaqat revaskulyarizatsiya usuli, balki keksa odamlarning hayot sifatini yaxshilash usuli sifatida samaradorligini tasdiqlaydi.

Kalit so'zlar: surunkali ishemik yurak kasalligi, teri orqali koronar aralashuv, hayot sifati, keksa bemorlar, uzoq muddatli kuzatuv.

Relevance. According to the World Health Organization (WHO), "... cardiovascular diseases are the leading cause of death worldwide. The annual mortality rate is about 30% of all deaths, of which more than 7 million people die due to coronary heart disease, which is 12.8% [13]. In the world, cardiovascular diseases are not only a medical but also a socio-economic problem, characterized by their widespread prevalence and many complications. In addition to traditional means of effective treatment of the disease, an urgent task is the use of highly effective and relatively safe methods of treatment. In Uzbekistan, 53% of deaths among the population aged 30 to 70 years are associated with CVD. Over the past 5 years, the number of CVD cases has increased by 20% even among young people. In general, CVD is diagnosed in about 4 million people, which is 12% of the total population [10, 11].

In the world, early diagnosis of coronary heart disease, including angina pectoris, is of particular importance for predicting and preventing complications, optimizing treatment, reducing disability and mortality rates. In recent years, thanks to intensive care and interventional interventions for coronary heart disease, the survival rate of patients has become significantly higher. However, existing methods for preventing complications of coronary heart disease are not always effective. In this regard, determining the relationship between atherosclerosis and proinflammatory cytokines in patients with coronary heart disease, comparative assessment of the effectiveness of combined lipid-lowering therapy, and personalization of treatment tactics are some of the pressing issues of modern cardiology [5, 7, 12]. In our country, comprehensive measures are being implemented to develop the medical sphere, adapt the health care system to global requirements, including early diagnosis of cardiovascular diseases aimed at reducing their complications. In this regard, the tasks have been defined to "...increase the efficiency, quality and popularity of medical care provided to the population in our country, as well as the formation of a medical standardization system, the introduction of high-tech diagnostic and treatment methods, support for a healthy lifestyle and disease prevention by creating effective models of home care treatment...". In this regard, it is appropriate to conduct research on the introduction of new, highly effective and safe methods of early detection, diagnosis and treatment of coronary heart disease into clinical practice.

This study to a certain extent serves to fulfill the objectives provided for by the Resolution and Decree of the President of the Republic of Uzbekistan PP-103 of January 26, 2022 "On measures to prevent and improve the quality of treatment of cardiovascular diseases", PP-167 of March 15, 2022 "On additional measures to comprehensively support and improve the standard of living of the older generation", as well as other regulatory and legal documents adopted in this area [5, 8].

Despite the convincingly proven effectiveness of PCI in reducing mortality and the incidence of recurrent ischemic events, in recent years there has been an increasing interest in studying the quality of life as one of the key indicators of treatment outcome. Given the aging of the population and the high level of comorbidity among patients with coronary heart disease, it is becoming especially important not only to prolong life, but also to maintain its functional and psychological quality [1, 4, 9].

Thus, studying the dynamics of the quality of life of patients after percutaneous coronary intervention in the long-term follow-up is an urgent task of modern cardiology aimed at increasing the effectiveness of rehabilitation, individualization of treatment approaches and improving the prognosis in patients with CIHD. However, a number of studies emphasize that clinical improvement does not always correlate with the subjective assessment of the patient's condition. Studies based on the Seattle Angina Questionnaire (SAQ), SF-36, EQ-5D and others have shown that the quality of life increases significantly in the first months after PCI, but may subsequently decrease, especially in the presence of concomitant diseases, insufficient drug therapy or psychological factors [2, 3, 6].

Thus, despite the recognized effectiveness of PCI, the question of its long-term impact on the quality of life remains open, especially in the context of the age population. This necessitates the present study.

Purpose of the study: to evaluate the dynamics of quality of life indicators in patients who underwent PCI in a long-term follow-up period.

Materials and methods of the study: The work was carried out at the Samarkand branch of the Republican Specialized Scientific and Practical Medical Center of Cardiology. A total of 109 patients diagnosed with coronary heart disease, stable angina III-IV FC were examined. The observation period of patients was 12 months (from 2021 to 2022).

The total number of patients included in the study was as follows: 73 men (66.06%), 37 women (33.94%). In group 1, men accounted for 69% (n = 31) and women 31% (n = 14), in group 2 72% (n = 31) men and 28% (n = 12) women and in group 3 52% (n = 11) men and 48% (n = 10) women. The average age of patients included in the study ranged from 60 to 74 years (65.5±0.4 years), according to the WHO classification these are elderly people.

All patients n=109 (100%) were diagnosed with coronary artery disease stable angina III and IV FC. They were randomized depending on the type of dyslipidemia according to the Fredrickson classification into 2 large groups: Group 1 consisted of 88 (80.7%) patients with DLP II B (mixed hypercholesterolemia) and Group 2 21 (19.2%) patients with DLP II A (hypercholesterolemia).

Then, patients with DLP II B were divided into 2 groups using a non-random sampling method depending on the therapy performed: Group I consisted of 45 (51.1%) patients who underwent percutaneous coronary intervention (PCI) with subsequent basic therapy, including statins at an average dose of 20 mg and titration of the drug depending on the level of total cholesterol and LDL-C and fenofibric acid at a dose of 145 mg for high triglyceride levels.

Group II included 43 (48.9%) patients who also underwent PCI with subsequent basic therapy, which included long-term and strict control of rosuvostatin intake.

Control group III consisted of 21 (19.2%) patients with DLP II A who received only basic therapy, without the PCI procedure. Subsequently, after 12 months, the quality of life of patients suffering from CIHD was assessed using the SF-36 questionnaire. The types of percutaneous coronary interventions performed on patients in groups 1 and 2 included in the study are presented in Table 3.4.2

Table 1.

Types of percutaneous coronary interventions performed in patients of groups 1 and 2 (n, %)

Indicators	Group I (n=45)	Group II (n=43)
Balloon angioplasty	38 (84,4%)	30 (69,7%)
Stenting of the anterior interventricular branch	24 (53,3%)	26 (60,5%)
Stenting of the circumflex branch	23 (51,1%)	20 (46,5%)
Stenting of the right coronary artery	17 (37,7%)	13 (30,2%)
Stenting of the obtuse marginal branch	2 (4,44%)	2 (4,65%)
Stenting of the diagonal branch	1 (2,2%)	2 (4,6%)
Thrombus extraction	-	1 (2,3%)

Balloon angioplasty was performed in 38 (84.4%) and 30 (69.7%) patients, right coronary artery (RCA) stenting – 9 (20%) and 12 (27.9%), circumflex branch (CFB) stenting – 11 (24.4%) and 20 (46.5%), anterior interventricular branch (AIB) stenting – 14 (31%) and 25 (58.12%), diagonal branch (DB) stenting – 1 (1.22%) and 1 (1.32%), obtuse marginal branch (OMB) stenting in 2 (4.44%) and 2 (4.65%) patients in groups I and II, respectively. Thrombus extraction was performed only in 1 patient in group II (2.3%).

Most patients had comorbid pathology, who had long-term arterial hypertension, type 2 diabetes mellitus, obesity, and a history of AMI.

Statistical processing of the results was performed by parametric statistics methods using StatSoft Statistica 6.0 and Microsoft Excel programs with calculation of Student's criteria and correlation coefficient (R±r). To compare groups by binary characteristics, the χ^2-criterion method was used. The statistical software package Statistica 10, StatSoft was used in the work. Differences were considered statistically significant at $p<0.05$.

Results of the study: in elderly patients, it was revealed from the comorbid pathology that most of them had a history of PICS (60.1%) and AG 2 (81.2%). The average values of SBP and DBP in patients suffering from hypertension were 138±1.31 and 93±1.03 mm Hg. In patients, one component of antihypertensive therapy was prescribed in 7.2%, a combination of 2 drugs in 37.1%, 3 drugs in 29.8%, and 4 drugs in 6.8%. The target blood pressure level below 140/90 mm Hg was achieved in 29% of cases, and the level below 130/80 mm Hg was achieved only in 9% of patients. Grade 1 obesity was detected in 44.4% of cases in group 1, while grade 2 obesity was found in 8.9% and grade 3 obesity in 2.2% of cases. In group 2, 27.9%, 7%, and 2.3%, respectively. Along with this, 44 patients were smokers, of which 53.5% were in group 2 and 46.7% in group 1. Our elderly patients had fewer, but still consuming alcohol, the incidence rate was 28% and 22% in groups 1 and 2, respectively. CHF was recorded in 87 patients. At the same time, 70 patients had CHF FC 3 and 17 had CHF FC 2. The distribution of CHF by groups was multidirectional. DM in the examined patients was as follows: in group 1 - 16.3%, in group 2 - 18%. Among the most important risk factors for CVD, dyslipidemia is primarily distinguished.

Table 2.

Comparative analysis of lipid profile and proinflammatory cytokine parameters in patients of group 1 (rosavastatin + fenofibrate n = 56)

Parameter I	Initially		After 6 months		After 12		P
	M	m	M	m	M	m	
total cholesterol	6,15	0,12	4,98	0,09	3,76	0,10	<0,001
HDL	0,86	0,04	1,20	0,03	1,67	0,05	<0,001
LDL	3,08	0,09	2,51	0,09	2,06	0,08	<0,001
TG	2,49	0,06	2,01	0,03	1,41	0,03	<0,001
IL-6	12,20	0,46	8,53	0,30	4,88	0,22	<0,001
TNF-α	4,32	0,08	3,52	0,06	2,62	0,05	<0,001
CRP	2,72	0,07	2,18	0,06	1,57	0,05	<0,001

Note: P – significance of differences between parameters at baseline, after 6 and 12 months.

Table 3.

Comparative analysis of lipid profile parameters and proinflammatory cytokines in patients of group 2 (rosuvastatin n=53)

Parameter I	Initially		After 6 months		After 12		P
	M	m	M	m	M	m	
total cholesterol	6,06	0,09	5,25	0,08	4,57	0,08	<0,001
HDL	1,02	0,03	1,25	0,02	1,60	0,04	<0,001
LDL	2,78	0,09	2,37	0,08	2,04	0,08	<0,01
TG	1,90	0,06	1,53	0,05	1,16	0,04	<0,001
IL-6	11,51	0,46	8,67	0,38	6,54	0,24	<0,001
TNF-α	3,94	0,06	3,35	0,06	2,77	0,07	<0,001
CRP	2,49	0,04	1,86	0,05	1,31	0,04	<0,001

` **Note:** P – significance of differences between indicators at baseline, after 6 and 12 months.

Evaluation of the quality of life of patients after percutaneous coronary intervention (PCI) is an important aspect in the analysis of the effectiveness of the treatment, especially in elderly and senile patients, for whom not only survival, but also functional independence and subjective perception of their own condition are key indicators of the success of therapy. At the remote stage of observation (after 6 months or more), positive dynamics are observed in such parameters as the level of physical activity, severity of angina, exercise tolerance, psychological state and general well-being. According to a number of studies, most patients after PCI note an improvement in exercise tolerance, a decrease in angina episodes, a decrease in anxiety, improved sleep and overall emotional

background. Particularly significant is the increase in autonomy in everyday life, which is critical for elderly patients.

After PCI, significant improvements in many indicators characterizing both the physical component of health and its emotional component are revealed in groups of patients. If we compare the quality of life indicators according to the SF-36 scale after 3 and 6 months after PCI, a statistically significant decrease in the quality of life level was found in patients of group 3 according to the following indicators: GH, VT, SF and MH compared to patients of groups 1 and 2 (Table No. 1.)

Table 4.

Quality of life indicators of patients after 3 months

Изучаемые показатели	1-группа N=45	2 –группа N=43	3 –группа N=21	P
PF	61±0.63	55±0.45	51±0.56	<0.05
RP	54±0.65	50±0.76	49±0.53	>0.05
GH	49±0.68	46±0.91	45±0.82	>0.05
BP	61±0.62	52±0.43	51±0.43	>0.05
VT	54±0.7	43±0.7	42±0.55	>0.05
SF	68±0.8	53±0.44	52±0.48	<0.05
RE	66±0.75	59±0.86	55±0.64	<0.05
MH	66±0.77	51±0.48	50±0.51	>0.05

Note: p <0.05 - significance of differences between groups

Table 5.

Quality of life indicators of patients after 6 months

Изучаемые показатели	1-группа N=45	2 –группа N=42	3–группа N=18	P
PF	64±0,58	58±0,57	53±0,57	>0.05
RP	56±0,55	52±0,82	48±0,82	>0.05
GH	44±0,64	42±0,85	40±0,63	<0.05
BP	62±0,65	57±0,53	51±0,53	<0.05
VT	55±0,79	52±0,66	39±0,7	<0.05
SF	67±0,42	59±0,48	50±0,5	<0.05
RE	68±0,53	62±0,91	57±0,45	<0.05
MH	65±0,64	52±0,49	48±0,52	<0.05

Note: p <0.05 - significance of differences between groups

In Group 1, there is a significant improvement in quality of life indicators. In the control group, compared with Groups 1 and 2, the quality of life is significantly lower during the observation period, as evidenced by low values of GH (40±0.63), VT (39±0.7), SF (50±0.5) and MH (48±0.52).

Conclusions: The study showed that percutaneous coronary intervention (PCI) in elderly and senile patients not only improves the clinical condition, but also has a significant positive effect on quality of life in the long term. Most patients noted a decrease in angina symptoms, increased physical activity and improved psycho-emotional state within 6 months after the intervention.

Of particular value are the data confirming that even in patients with severe comorbidity and functional limitations, the positive effect of PCI can be maintained provided adequate post-procedural therapy and monitoring. In this case, quality of life acts not only as the final criterion for the success

of treatment, but also as a guideline for the formation of individualized routes of rehabilitation and secondary prevention.

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