ETHICAL ASPECTS OF THE QUALITY OF LIFE IN PATIENTS WITH ATHEROSCLEROSIS

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The concept of quality of life is an integral characteristic of human physical, psychological, emotional, and social functioning. The disorders associated with atherosclerosis reduce the patients' quality of life. Surgical treatment improves physical health of patients with atherosclerosis affecting primarily precranial arteries. The decrease in the indicators of physical functioning, role-playing, and bodily pain in patients with atherosclerosis mostly affecting the arteries of lower extremities persists in the late postoperative period. Comprehensive analysis of the broad spectrum of factors, such as clinical and demographic, anatomic, laboratory and instrumental, medical and social, and psychological factors, is the key to successful revascularization associated with the lowest risk of possible adverse events that makes it possible to implement the personalized approach to treatment and rehabilitation of patients. Ethical regulation of the quality of life assessment by the patient, his/her relatives and medical professionals is required. Reconciling the positions of the parties on the issue requires bioethical expertise in studying indicators of the quality of life.

Keywords: atherosclerosis, surgical treatment, quality of life

Author contribution: Volkova AS — analysis of the research data, review of publications on the topic of the article, summary, manuscript writing; Ilyin MV — developing the article design, statistical analysis, manuscript editing; Kagramanyan IN — consultations on the issues related to the study, literary editing of the article, scientific editing of the article; Khokhlov AL — consultations on the issues related to the study, literary editing, scientific editing of the article.

Compliance with ethical standards: the study was approved by the Ethics Committee of the Yaroslavl State Medical University. The informed consent was submitted by all subjects. The survey of adults was performed on a voluntary basis.

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Статья поступила: 18.07.2022 **Статья принята к печати:** 23.08.2022 **Опубликована онлайн:** 30.09.2022

DOI: 10.24075/medet.2022.057

ЭТИЧЕСКИЕ АСПЕКТЫ КАЧЕСТВА ЖИЗНИ БОЛЬНЫХ АТЕРОСКЛЕРОЗОМ

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Понятие качества жизни представляет собой интегральную характеристику физического, психологического, эмоционального и социального функционирования человека. Заболевания, ассоциированные с атеросклерозом, снижают качество жизни пациентов. Хирургическое лечение приводит к улучшению физического здоровья больных атеросклерозом с преимущественным поражением прекраниальных артерий. Снижение показателей физического функционирования, ролевой деятельности и телесной боли у больных атеросклерозом с преимущественным поражением артерий нижних конечностей сохраняется также в отдаленном послеоперационном периоде. Главным залогом успешной реваскуляризации, ассоциированной с наименьшим риском возможных неблагоприятных событий, является комплексный анализ широкого спектра факторов, включая клинико-демографические, анатомические, лабораторно-инструментальные, медико-социальные и психологические, что позволяет реализовать персонифицированный подход в лечении и реабилитации пациента. При оценке качества жизни самим пациентом, его родственниками и медицинскими работниками необходима этическая регуляция. Согласование позиций сторон в данном вопросе требует проведения биоэтической экспертизы в исследовании показателей качества жизни.

Ключевые слова: атеросклероз, хирургическое лечение, качество жизни

Вклад авторов: А. С. Волкова — анализ научного материала, обзор публикаций по теме статьи, составление резюме, написание текста статьи; М. В. Ильин — разработка дизайна статьи, статистические расчеты, редактирование статьи; И. Н. Каграманян — консультирование по вопросам проведения исследования, литературное редактирование статьи, научное редактирование статьи; А. Л. Хохлов — консультирование по вопросам проведения исследования, литературное редактирование, научное редактирование статьи.

Соблюдение этических стандартов: данное исследование было одобрено Этическим комитетом ФГБОУ ВО ЯГМУ Минздрава России. Добровольное информированное согласие было получено для каждого участника. Обследование для взрослого населения проводилось на добровольной основе.

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Статья поступила: 18.07.2022 **Статья принята к печати:** 23.08.2022 **Опубликована онлайн:** 30.09.2022

DOI: 10.24075/medet.2022.057

Quality of life is an essential aspect of bioethics. Surgical interventions aimed at improving the patient's quality of life sometimes raise serious ethical issues that emerge in case of conflict between the patient's preferences associated with his/her perceptions of the quality of life and the limitations associated with the disease. Manifestations of atherosclerosis have a major impact on the patients' quality of life. Reduced quality of life in patients with atherosclerosis obliterans of the lower extremities results from the limitation of physical exertion, mostly walking, and intensity of the pain syndrome [1]. In patients with carotid stenosis, the quality of life is usually assessed in conjunction with the assessment of cognitive impairment. Psychopathological disorders associated with vascular disease are also related to the psychological reaction to illness [2].

The patient's quality of life is a subjective indicator that reflects a broad spectrum of parameters related to physical activity, capability of labour, social interactions, and self-care, as well as to emotional stability, the presence or absence of discomfort, including feeling uncomfortable due to illness [3]. Furthermore, estimation of the quality of life is used as an independent criterion of treatment efficiency [4, 5].

The questionnaire method is used to assess the patients' overall satisfaction with their quality of life. The SF-36 Health Status Survey (SF-36) designed for assessment of overall well-being in both physical and psychoemotional spheres is one of the model questionnaires. The advantages of the questionnaire are the comprehensive nature and non-specificity, i. e. suitability for assessment of the parameters associated with various disorders.

The study was aimed to assess the indicators of the quality of life in patients with atherosclerosis who were referred for surgery.

METHODS

The study involved 47 patients with atherosclerosis, among them 25 (53.2%) patients with atherosclerosis of precranial arteries and 22 (46.8%) patients with atherosclerosis obliterans of the lower extremities, referred for surgery to the Department of Vascular Surgery of the Yaroslavl Regional Clinical Hospital. Study design: single-centre non-randomized open-label prospective parallel group study. The endpoints were assessed six months after the patient enrollment.

The clinical status and quality of life in patients with atherosclerosis were assessed based on the completed SF-36 questionnaire. The questionnaire reflects the patient's conditions according to the following scales: physical functioning (PF), role-playing (RP), bodily pain (BP), general health (GH), viability (VT), social functioning (SF), emotional state (RE), and mental health (MH). The scores of all scales vary between 0 and 100, where 100 corresponds to full health. The changes in the indicators over time reflect the dynamic changes in the clinical status, including those resulting from treatment.

Statistical data processing was performed using the STATISTICA 10.0 software package (StatSoft Inc., USA). The distribution of quantitative traits was tested for normality using the Lilliefors corrected Kolmogorov–Smirnov test and Shapiro–Wilk test. The data were presented as median and percentiles due to non-normal distribution. The Wilcoxon test was used to compare two independent groups by one trait. The critical level of statistical significance was within 5.0%.

RESULTS

The assessment of the quality of life in patients with atherosclerosis on admission to the hospital for surgical treatment showed the following results (Fig. 1).

There were no significant differences ($p < 0.05$) in the indicators of general health (GH), social functioning (SF), emotional state (RE), and mental health (MH) in patients with atherosclerosis affecting mostly brachiocephalic arteries (BCA) and atherosclerosis obliterans of peripheral arteries (PA). The quality of life in patients with atherosclerosis of brachiocephalic arteries was higher based on the comparison of the indicators of physical functioning (PF), role-playing (RP), and bodily pain (BP). This was probably due to limited physical activity associated with severe pain syndrome in patients with atherosclerosis obliterans of the lower extremities.

The dynamic changes in the indicators of mental (MH) and physical (PH) health components in the general group of patients with atherosclerosis ($n = 47$) in the early postoperative period are provided in Table 1.

The data provided in Table 1 demonstrate a significant ($p = 0.004$) improvement of physical health in patients with atherosclerosis after vascular reconstruction.

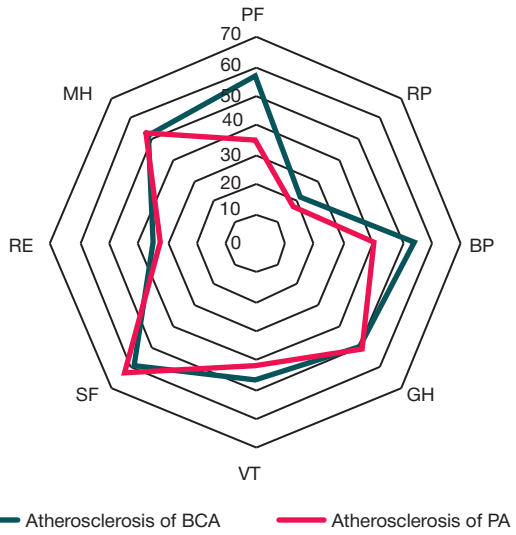

Fig. 1. Assessment of the quality of life in patients with atherosclerosis on admission to the hospital

Table 1. Dynamic changes in the indicators of mental (MH) and physical (PH) health components in patients with atherosclerosis (n = 47)

Indicator	Before surgery	After surgery	*p*
MH, points	39.5 (34.3; 44.8)	39.9 (33.7; 48.9)	0.98
PH, points	34.3 (28.5; 39.7)	36.1 (30.2; 45.4)	0.004

Table 2. Dynamic changes in the indicators of mental (MH) and physical (PH) health components in patients with atherosclerosis of BCA (n = 25)

Indicator	Before surgery	After surgery	*p*
MH, points	39.5 (34.3; 41.2)	37.7 (33.7; 46.8)	0.85
PH, points	38.1 (31.3; 44.9)	41.4 (32.1; 49.6)	0.015

Table 3. Dynamic changes in the indicators of mental (MH) and physical (PH) health components in patients with atherosclerosis of PA (n = 22)

Indicator	Before surgery	After surgery	*p*
MH, points	40.1 (34.3; 51.6)	40.6 (34.3; 51.6)	0.97
PH, points	33.1 (27.7; 35.3)	33.8 (27.7; 38.0)	0.11

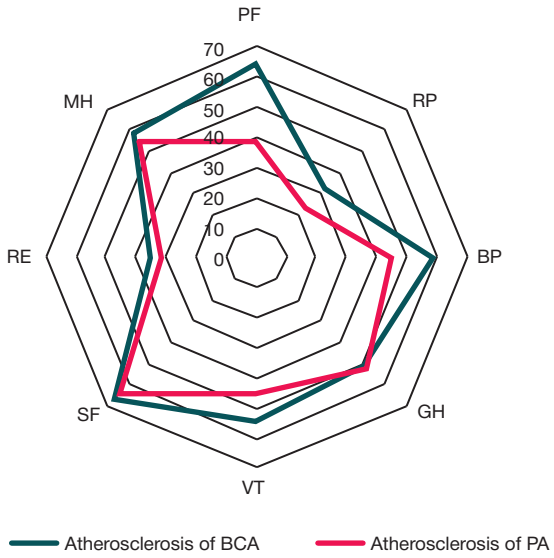

Fig. 2. Assessment of the quality of life in patients with atherosclerosis six months after surgery

The analysis of the dynamic changes in the indicators of MH and PH observed in patients with atherosclerosis affecting mostly brachiocephalic arteries that performed after surgery is provided in Table 2.

The patients with atherosclerosis of BCA demonstrate a significant (p = 0.015) improvement of the quality of life in the physical sphere during the postoperative period. No significant differences in the indicators of psycho-emotional health have been revealed in this group of patients.

The dynamic changes in the studied indicators in patients with atherosclerosis of PA are provided in Table 3.

Based on the data provided in Table 3, no significant differences in the indicators of physical and psycho-emotional health have been revealed in patients with atherosclerosis of PA during the postoperative period.

Thus, the increase in the indicators of physical (PH) health component observed in the general group of patients with atherosclerosis was entirely due to the improvement observed in the group of operated patients with atherosclerosis of brachiocephalic arteries.

Assessment of the quality of life in patients with atherosclerosis in the late postoperative period (six months after surgery) is provided in Fig. 2.

The characteristic pattern of the quality of life was maintained in patients with atherosclerosis six months after the vascular reconstruction surgery. The indicators of physical functioning (PF), role-playing (RP), and bodily pain (BP) in patients with atherosclerosis affecting mostly the arteries of lower extremities were still lower than those of patients with atherosclerosis of precranial arteries.

The disease affecting non-coronary artery systems adversely affects both physical and psychological components of the patients' quality of life. Arterial reconstruction results in the significant improvement of physical health in patients with atherosclerosis of precranial arteries. The decrease in the indicators of physical functioning (PF), role-playing (RP), and bodily pain (BP) observed in patients with atherosclerosis affecting mostly the arteries of lower extremities persists in the late postoperative period.

The comprehensive analysis of the broad spectrum of factors, such as clinical and demographic, anatomic, laboratory and instrumental, medical and social, and psychological factors, is the key to successful revascularization associated with the lowest risk of possible adverse events that makes in possible to implement the personalized approach to treatment and rehabilitation of patients. Ethical regulation of the quality of life assessment by the patient, his/her relative and medical professionals is required. Reconciling the positions of the parties on the issue requires bioethical expertise in studying indicators of the quality of life.

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