

Comprehensive coordinated care after myocardial infarction (KOS-Zawał): a patient's perspective

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Introduction Cardiovascular diseases are one of the major causes of morbidity and account for 46% of deaths in Poland.¹ Demographic changes in our country, population aging, and the exposure to cardiovascular risk factors (smoking, obesity, hypercholesterolemia, arterial hypertension, diabetes mellitus, and stress) adversely affect the prognosis of patients after cardiovascular events. The development of modern diagnostic and therapeutic methods, including interventional cardiology, resulted in a significant reduction of early adverse events, including deaths. However, despite the widespread use of reperfusion and revascularization in acute myocardial infarction, the 1-year case fatality exceeds 15%.² Therefore, it was necessary to introduce a comprehensive coordinated care program after myocardial infarction (KOS-Zawał), which aimed to reduce the number of deaths and disabilities as well as facilitate faster recovery and return to professional activity.

The KOS-Zawał program consists of revascularization, cardiac rehabilitation, implantable cardioverter-defibrillator implantation with or without resynchronization, if indicated, patient education, and comprehensive specialist outpatient care within 12 months after myocardial infarction.^{3,4} The aim of this study was to present the KOS-Zawał program from the perspective of its patient participants.

Methods The Cardiology Department of University Hospital in Opole started the arrangements to launch the KOS-Zawał program in August 2017. The hospital cardiology outpatient clinic had been supplemented with additional staff and rooms located next to the rehabilitation unit (a doctor's office for outpatient visits, an electrocardiology laboratory equipped with electrocardiographic exercise test set with ergospirometry and a 24-hour Holter monitoring system, and clinical dietitian's office). Outpatient rehabilitation was provided by the on-site Department of Rehabilitation, while inpatient rehabilitation, by the Department of Cardiac Rehabilitation in Głuchołazy. The clinical dietitian was responsible not only for optimal individual diet composition, but also for providing patients with information on secondary prevention of cardiovascular diseases. The participants could also consult a clinical psychologist, whose office was localized next to the KOS-Zawał offices. Additional information is available in Supplementary material.

From October 1, 2017, to August 31, 2018, a total of 521 patients with myocardial infarction treated in the Department of Cardiology entered the KOS-Zawał program. In order to study the patients' opinion on post-myocardial infarction care and the KOS-Zawał program, a questionnaire

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TABLE 1 Results of patient survey on the KOS-Zawał program

Question	Response rates					
What do you think about your health status?	Very bad 0%	Bad 4%	Medium 28%	Good 17.4%	Very good 50.6%	No answer 0%
How do you assess your current health status compared with the period immediately after the heart attack?	Definitely worse 0.7%	Slightly worse 3.3%	No change 6%	Slightly better 34%	Definitely better 56%	No answer 0%
Do you think that participation in the KOS-Zawał program has a positive impact on your health?	Definitely no 0%	Rather no 0%	Hard to say 0%	Rather yes 21.3%	Definitely yes 74.7%	No answer 0%
Does participation in the KOS-Zawał program increase the feeling of safety related to your health?	Definitely no 0%	Rather no 0%	Hard to say 1.3%	Rather yes 30.7%	Definitely yes 68%	No answer 0%
Do you think that the KOS-Zawał program is needed for a patient after a heart attack?	Definitely no 0%	Rather no 0%	Hard to say 0%	Rather yes 6.6%	Definitely yes 92.7%	No answer 0.7%
Do you think that ambulatory cardiologist visits are necessary as part of the KOS-Zawał program?	Definitely no 0%	Rather no 0%	Hard to say 0%	Rather yes 8%	Definitely yes 92%	No answer 0%
Do you think that the number of ambulatory cardiologist visits within the KOS-Zawał program is sufficient?	Insufficient 0.7%	Rather insufficient 9.3%	Hard to say 9.3%	Adequate 80%	Excessive 0%	No answer 0.7%
How do you assess the quality of work of the cardiologist who conducts control visits under KOS-Zawał?	Very low 0%	Low 0%	Hard to say 3%	High 28%	Very high 69%	No answer 0%
Do you think that ambulatory and inpatient cardiac rehabilitation in this program is needed?	Definitely no 0%	Rather no 0.7%	Hard to say 2%	Rather yes 14%	Definitely yes 79.3%	No answer 4%
Do you think that the extent of ambulatory and inpatient cardiac rehabilitation carried out in KOS-Zawał is sufficient?	Insufficient 0.7%	Rather too narrow 8.7%	Hard to say 8.7%	Adequate 69.3%	Too extensive 0.6%	No answer 12%
How do you assess the quality of work of physiotherapists as part of the KOS-Zawał program?	Very low 0%	Low 0.7%	Hard to say 2.7%	High 32.6%	Very high 50%	No answer 14%
Do you think that healthy lifestyle advice given by a clinical dietitian is needed?	Definitely no 0%	Rather no 1.3%	Hard to say 3.3%	Rather yes 26.7%	Definitely yes 63.4%	No answer 5.3%
Do you think that the amount of advice on healthy lifestyle provided by a clinical dietitian is sufficient?	Insufficient 0%	Rather too small 3.3%	Hard to say 2%	Adequate 77.4%	Excessive 2%	No answer 15.3%
How do you assess the quality of work of a clinical dietitian?	Very low 0%	Low 0.7%	Hard to say 2%	High 34.6%	Very high 44%	No answer 18.7%
Do you think that psychological advice is needed? (14% of patients decided to receive psychological advice)	Definitely no 1.3%	Rather no 6.7%	Hard to say 33.3%	Rather yes 36%	Definitely yes 15.4%	No answer 7.3%
Do you think that the opportunity to get telephone advice is needed? (12% of patients used the telephone advice option)	Definitely no 2.7%	Rather no 5.3%	Hard to say 16.7%	Rather yes 40.7%	Definitely yes 32.6%	No answer 2%
If you have had a heart attack in the past (51% of respondents) and have already been under the care of cardiologists, how do you assess the current cardiac care as part of the KOS-Zawał program?	Definitely worse 0%	Worse 9.1%	Hard to say 31.2%	Better 59.7%	Definitely better 0%	

had been designed, comprising 20 questions covering self-assessment of patients' health status and evaluation of individual KOS-Zawał modules (outpatient care and rehabilitation). Moreover, the questionnaire allowed patients to comment on what should be changed or improved in the program from their point of view. The original Polish version of the questionnaire is available online in Supplementary material. Participation in the survey was voluntary and was preceded by signing a written informed consent form. The survey was conducted during outpatient follow-up visits. The system of answers to the questions in the survey was based on the 5-point Likert scale,⁵ commonly used in sociological research. The questionnaire was also discussed with a psychologist. The study was approved by the Bioethics Committee of the Opole Medical Chamber.

Results and discussion From June 22, 2018, to August 31, 2018, a total of 150 consecutive patients entered the study. All patients agreed to participate in the survey. The characteristics of participants are presented in Supplementary material, *Table S1*. The mean age of patients was 65 years (range, 38–92 years). For half of the patients, the current myocardial infarction was not the first acute coronary syndrome. All patients underwent coronary angiography, and almost all patients subsequently underwent revascularization by percutaneous coronary intervention (96%) or coronary artery bypass grafting (1.5%). Most patients (79%) participated in an ambulatory rehabilitation program, and 18% of patients, in an inpatient program. In 5 patients (3%), rehabilitation was not applied due to medical contraindications (3 patients) or disability (2 patients).

The answers to selected survey questions are presented in *TABLE 1*. The KOS-Zawał program was rated as very good. According to a vast majority of patients, participation in the program contributed to improvement of their health and increased the feeling of safety after a myocardial infarction. Importantly, among patients for whom the current myocardial infarction was not the first one, 60% considered the quality of care within the KOS-Zawał program as better than the previous one. Most patients believed that all components of the program (outpatient cardiac care, rehabilitation, and secondary prevention advice) are necessary and were rated well or very well. Two-thirds of the patients did not report problems related to the program. The remaining patients reported difficulties in reaching rehabilitation and control visits (19%), limited availability of the prescribed medication due to their high cost (17%), and unsatisfactory interactions with other doctors (6%). Many patients would like the post-myocardial infarction care proposed by the KOS-Zawał program to be continued also beyond the 12 months since the event.

The study presents for the first time the opinion of patients on ambulatory care, rehabilitation, and secondary prevention advice after myocardial infarction provided within the KOS-Zawał program. In the opinion of the vast majority of patients, participation in the KOS-Zawał program contributed to improvement of their health and increased the sense of safety after myocardial infarction. However, as it is a single-center study, the results cannot be generalized to the entire KOS-Zawał program itself but only to its presented implementation in the authors' cardiology center.

SUPPLEMENTARY MATERIAL

Supplementary material is available at www.mp.pl/kardiologiapolska.

ARTICLE INFORMATION

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