

THE INFLUENCE OF ANGINA PECTORIS ON THE QUALITY OF LIFE OF PATIENTS ONE MONTH AND TWELVE MONTHS AFTER MYOCARDIAL INFARCTION

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The appearance of angina pectoris in patients after myocardial infarction has got a negative influence on their quality of life. The aim of the paper was to assess the influence of angina pectoris on the quality of life of patients one month and twelve months after myocardial infarction. Prospective cohort study involved 240 patients from the city of Niš, aged 30–79 years, who suffered from the first myocardial infarction in 2007. The quality of life was assessed with the Serbian version of these questionnaires: EuroQol5Dimension and EuroQolVAS. Angina pectoris was ranked according to the classification of Canadian Cardiovascular Society. Multivariate logistic regression analysis was used. A total of 240 patients (160 males and 80 females) filled in the questionnaires one month after the myocardial infarction. They were aged 61.37 ± 8.87 years on average. All the patients had the significantly lower average scores in EuroQolVAS compared with the scores twelve months after the myocardial infarction (60.50 ± 12.03 vs 69.83 ± 12.06 , $p < 0.001$). The average grades of all the examined dimensions in EuroQol 5 Dimension questionnaire were significantly higher after twelve months after myocardial infarction 1.41 ± 0.26 vs 1.53 ± 0.26 , $p < 0.001$ compared with the values obtained one month after the myocardial infarction. The average range of angina pectoris twelve months after the MI was significantly lower compared with the value one month after the MI (0.78 ± 0.51 vs 0.91 ± 0.44 , $p < 0.001$). The presence of angina pectoris in patients who survived myocardial infarction is associated with their lower HRQoL. Twelve months after myocardial infarction patients assessed their health condition significantly better compared with the condition one month after the myocardial infarction. As past research has demonstrated that angina pectoris is a risk factor for mortality in patients with established heart disease, it is important to evaluate its impact on the patient's quality of life. *Acta Medica Medianae* 2015;54(1):7-11.

Key words: angina pectoris, myocardial infarction, quality of life

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Introduction

Ischemic heart disease (IHD) is the leading cause of morbidity and mortality in the developed world, and places a heavy burden on society in terms of personal disability and health care costs (1,2). Survivors of a myocardial infarction (MI) remain vulnerable to poor health-related quality of life (HRQoL), further cardiac events, and increased morbidity due to a progression of CHD (3-5).

In Serbia, MI is the first cause of death in males and the second cause, after stroke, in females, aged 55-64 years (6).

In general, the quality of life is everything that makes life worth living (7). Quantitatively, the quality of life is the duration of the remaining life without disability and incapability (8).

Health-Related Quality of Life (HRQoL) comprises only those factors which are a part of someone's health (9-11).

Angina pectoris is a symptom complex of IHD characterized by paroxysmal attacks of chest pain, usually substernal or precordial, caused by myocardial ischemia that falls short of inducing infarction (12).

Angina pectoris and lower physical capacity after MI decrease HRQoL the most (13-15). The association of chronic pain, anxiety and depression leads to a significant decrease in the overall

physical capacity and significant disruption of the functionality of the organism as well as to the increase of the HRQoL (16-18).

Depressive symptoms are known to be associated with worse health status among patients with coronary artery disease (19-22). Anxiety and depression have the greatest impact on the lowering of HRQoL after MI(23-26).

Aim

The aim of the paper was to assess the influence of the angina pectoris on the quality of life of patients one month and twelve months after MI.

Material and methods

Data about patients were obtained from the national registry of acute coronary syndrome by random sampling, when 380 newly diagnosed patients with a diagnosis of MI selected the.

The diagnosis of MI was set by the cardiologist on the admission of patients in the Coronary Care Unit (CCU) according to the diagnostic criteria for MI in 2007 (13).

For the investigation of the HRQoL we used: Serbian versions of generic questionnaires EuroQoL VAS (EQVAS) and EurQoL 5 Dimension (EQ5D) (27). Angina pectoris was assessed by the classification of the Canadian Cardiovascular Society (CCS) (28).

Questionnaires

Visual analogue scale (EQVAS) is the generic questionnaire for the self-assessment of health condition. This scale is limited to zero (0), which would correspond to the most imaginable assessment of a health condition or to death, and on the other side is 100, the best imaginable health. A higher score in EQVAS indicates higher HRQoL; the lower score in EQVAS indicates a lower HRQoL (17,18).

EQ5D is a standardised generic questionnaire and EQ-5D is designed for self-completion by respondents. The following dimensions of HRQoL were examined: mobility, self-care, usual daily activities, pain/discomfort and anxiety/depression. Each dimension has three levels: no problems, some problems, severe problems. The respondent is asked to indicate his/her health state by ticking (or placing a cross) in the box before the most appropriate statement in each of the five dimensions. This decision results in a 1-digit number expressing the level selected for that dimension. The digits for 5 dimensions can be combined in a 5-digit number describing the respondent's health state. It should be noted that the numerals 1-3 have no arithmetic properties and should not be used as a cardinal score (19-23).

The chest pain was graded according to the

CCS classification (24).

Angina pectoris according to this classification is ranged from 0 to 4: 0 -without pains, 1-daily physical activities, such as walking and climbing the stairs, that do not cause pain in the chest; 2-chest pain appears during walking, walking up and down the stairs, after meal; 3-passing a long distance, which causes the chest pain, e.g. walking or climbing the stairs by more than one floor, and 4-if the chest pain is permanently present during any physical activity or rest (24).

Statistical analysis

Multiple regression analysis was applied. Statistical significance was set at 5% ($p < 0.05$). Results of statistical analysis are shown in tables and graphs. The calculations were performed using the SPSS software package, version 10.0 and S-PLUS programme, version 2000.

Results

A total number of 240 patients (160 male and 80 female) filled in the questionnaires. There were two times more males compared to females ($p < 0.001$). The mean age of males was 61.13 ± 8.63 , and 61.86 ± 9.39 years for females.

The results about health status were obtained by EQVAS; assessment of HRQoL was obtained by EQ5D, whereas angina pectoris was estimated using the CCS classification.

According to the presented results the average score in EQVAS one month after MI was significantly lower compared to the average score twelve months after the MI (60.50 ± 12.0 vs 69.83 ± 12.06 ; $p < 0.001$).

There was a statistically significant decrease in the grade of angina pectoris according to the CCS (0.91 ± 0.44 vs 0.78 ± 0.51 , $p < 0.001$).

The HRQoL was significantly higher in the patients twelve months after MI compared with the level of HRQoL one month after MI (1.53 ± 0.26 vs 1.41 ± 0.26 ; $p < 0.001$).

There was a statistically significant increase in each dimension of HRQoL assessed by EQ5D. A smaller improvement was detected in dimension Pain/Discomfort.

According to the chart one month after MI, 23 (9.6%) patients had chest pain of grade 1. Chest pain of grade 2 was found in 127 (53.3%) patients and chest pain of grade 3 was found in 89 (37.1%) patients.

Twelve months after MI, there were 64 (26.7%) patients with chest pain of grade 1, which is 2.8 times more compared with the number one month after MI. The number of patients with the grade 2 chest pain was 165 (68.8%). The number of patients with grade 2 chest pain is higher by 29% compared with value one month after MI. The difference is statistically significant ($p < 0.001$).

Table 1: Results in EQVAS, EQ5D questionnaire and CCS scale

Characteristics	The time of assessing HRQoL		p
	1 month after MI	12 months after MI	
EQVAS p<0.001	60.50±12.03	69.83±12.06	p<0.001
Rang AP according to the CCS	0.91±0.44	78±0.51	p<0.001
EQ5D	1.53±0.26	1.41±0.26	p<0.001
Mobility			
I have no problems in walking about	88(55.0%)	119(74.4%)	p<0.05
I have some problems in walking about	72(45.0%)	41(25.6%)	p<0.05
I am confined to bed	-	-	-
Self-care			
I have no problems with self-care	127(79.4%)	130(81.2%)	p<0.001
I have some problems washing or dressing myself	33(20.6%)	30(18.8%)	p<0.001
I am unable to wash or dress myself	-	-	-
Usual Activities (e.g. work, study, housework, family or leisure activities)			
I have no problems with performing my usual activities	72(42.0%)	98(61.2%)	p<0.01
I have some problems with performing my usual activities	81(50.6%)	62(38.8%)	p<0.01
I am unable to perform my usual activities	7(4.4%)	-	-
Pain/Discomfort			
I have no pain or discomfort	51(31.9%)	60(37.5%)	p<0.05
I have moderate pain or discomfort	109(68.1%)	100(62.5%)	p<0.05
I have extreme pain or discomfort	-	-	-
Anxiety/Depression			
I am not anxious or depressed	49(30.6%)	66(41.2%)	p<0.01
I am moderately anxious or depressed	108(67.5%)	94(58.8%)	p<0.01
I am extremely anxious or depressed	3(1.9%)	-	n.s.

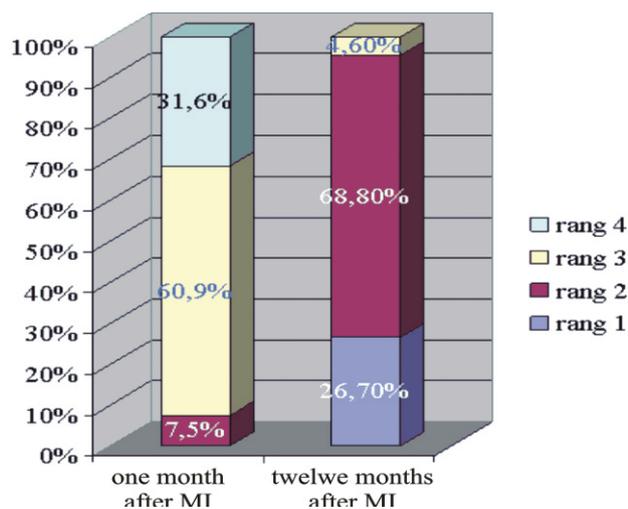


Chart 1. Grades of angina pectoris one and twelve months after MI

Discussion

The appearance of angina pectoris one month after MI is associated with high mortality and significant reducing of their HRQoL (25).

Spertus et al. (2006) found that more than 25% of the patients who survived MI got angina pectoris one month after this event. Previous angina pectoris had the greatest impact on the appearance of angina one month after the MI.

According to those investigators, angina pectoris after MI was common in females, in patients under 60 years of age, in current smokers and in those who had earlier cardiac events or had revascularisation of the myocardium (25).

Eradication of angina pectoris is a primary goal after MI (26). One month after MI, the quality of life is significantly impaired. The appearance of angina pectoris significantly decreased the HRQoL in all the patients who survived MI.

The HRQoL was statistically significantly reduced in all the patients one month after MI. In this period the most patients assessed their health condition as bad. They were anxious, frightened and complained of chest pain or discomfort.

All the patients assessed their health condition as better twelve months after MI. Reduction of the range of angina pectoris had significant impact on the increasing and improving the HRQoL.

However, the prevalence of angina one year after MI and factors associated with it are unknown (26). In this study all the patients had some pain or discomfort in the chest. One month after MI there were 60.9% of all the patients with angina pectoris grade 3. Twelve months after MI there was the highest percent (68.8%) of patients with grade 2 angina pectoris. The number of patients with grade 3 angina pectoris was lower by 30%. Angina occurs in nearly 1 out of 5 patients one year after MI (1,2,26). It is associated with

several modifiable factors, including persistent smoking and depressive symptoms (26).

Conclusion

The presence of angina pectoris in patients who survived MI is associated with impaired and

reduced HRQoL. Twelve months after myocardial infarction patients assessed their health condition and HRQoL significantly higher compared with the condition one month after MI. Reduction in angina pectoris grades was important in improving the health condition and increasing HRQoL.

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UTICAJ ANGINE PEKTORIS NA KVALITET ŽIVOTA BOLESNIKA MESEC I DVANAEST MESECI POSLE INFARKTA MIOKARDA

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Pojava angine pektoris kod bolesnika posle infarkta miokarda ima negativan uticaj na njihov kvalitet života. Cilj rada bio je da se proceni uticaj angine pektoris na kvalitet života bolesnika jedan mesec i dvanaest meseci posle infarkta miokarda. Prospektivnom kohortnom studijom obuhvaćeno je 240 bolesnika starosti od 30 do 79 godina sa teritorije grada Niša, koji su prvi AIM doživeli 2007. godine. Za procenu kvaliteta života korišćeni su: generički upitnici EuroQuol 5 Dimension (EuroQuol5D) i EuroQuolVAS (EQVAS). Angina pektoris rangirana je prema klasifikaciji Kanadskog kardiološkog društva. Primenjena je multivarijantna regresiona analiza. Ukupno 240 bolesnika (160 muškaraca i 80 žena) prosečne starosti od 61.37±8.87, popunilo je upitnike. Mesec dana posle AIM bolesnici su imali značajno manji prosečni skor u EQVAS u odnosu na dvanaest meseci posle AIM (60.50±12.03 vs 69.83±12.06, p<0.001). Prosečan rang za anginu pektoris dvanaest meseci posle IM bio je značajno manji od ranga AP koji su bolesnici imali u prvom mesecu posle AIM (0.78±0.51 vs 0.91±0.44, p<0.001). Svi bolesnici su svoje zdravstveno stanje ocenili značajno bolje dvanaest meseci posle infarkta miokarda nego mesec dana posle obolevanja. Bolesnici koji su imali manje prosečne rangove anginoznog bola imali su viši kvalitet života. *Acta Medica Medianae 2015;54(1):7-11.*

Ključne reči: angina pectoris, infarkt miokarda, kvalitet života