

Psychological support for patients following myocardial infarction

Anna Mierzyńska, Monika Kowalska, Monika Stepnowska, Ryszard Piotrowicz

Department of Cardiac Rehabilitation and Non-Invasive Electrocardiology,
Institute of Cardiology, Warsaw, Poland

Abstract

The paper presents the principal psychological problems in patients following myocardial infarction. Particular emphasis has been placed on anxiety and depression following myocardial infarction and behavioural patterns adversely affecting health. A proposal of actions during cardiac rehabilitation has been presented in accordance with the severity of psychological problems encountered in the patients. (Cardiol J 2010; 17, 3: 319–324)

Key words: myocardial infarction, psychological

Introduction

Abnormalities of cardiovascular function (coronary artery disease caused by atherosclerosis) are referred to as diseases of major public health importance and their development and course are strongly related to the patient's psychosocial functioning, lifestyle and behavioural patterns. The high mortality rate, serious health consequences and the necessity to introduce numerous changes in everyday functioning after the diagnosis and hospitalization are the reasons why cardiovascular disease is perceived by patients as one of the most serious and threatening life experiences.

For these reasons the psychological care of cardiac patients is a very important element of treatment and should include a wide scope of functions performed by the patient, mainly understood as supporting the adjustment to the new conditions of life associated with the consequences of becoming ill.

We address the issues related to myocardial infarction and its consequences for the psychological functioning of the patient.

Psychological responses of patients following myocardial infarction

The risk factors of myocardial infarction are divided into several categories with an important role being played by psychosocial factors, such as chronic stress, fast-paced life, type A behavioral pattern (TABP), having too many responsibilities, inability to cope, a considerable accumulation of important life events, depression, anxiety and social isolation.

The warning signs are often ignored or misinterpreted by the patients, which makes the onset of myocardial infarction a big surprise for them. Myocardial infarction is associated with a high level of anxiety, the fear of impending death and deep frustration resulting from the sudden and serious changes in functioning. The feeling of danger additionally exacerbates the need for hospitalization and its consequences reach deep into the future and significantly affect the patient's quality of life (Table 1).

Address for correspondence: Anna Mierzyńska, MA, Department of Cardiac Rehabilitation and Non-Invasive Electrocardiology, Institute of Cardiology, ul. Alpejska 42, 04–628 Warszawa, Poland, e-mail: anna.mierzynska@ikard.pl

Received: 19.03.2010

Accepted: 8.04.2010

Table 1. Psychological responses to experiencing myocardial infarction.

• Anxiety	• Sadness
• Depressed mood	• Anger
• Depression	• Surprise
• Agoraphobia	• Disgust
• Exhaustion	• Social withdrawal
• Hostility	

Anxiety reactions

Intense anxiety is often listed as the major psychological response to myocardial infarction and is one of the symptoms associated with this condition. Anxiety is described as an unpleasant emotional state coincident with the fear of danger and a number of cognitive changes (e.g. impaired concentration, impaired memory, impaired ability of logical thinking) and somatic changes (e.g. rapid heart rate, dry mouth, agitation). Soon after the cardiovascular event the level of anxiety is elevated in about two thirds of the patients and reaches clinical levels in 20–30%.

The high level of anxiety observed following myocardial infarction should be considered from two perspectives. On the one hand, it is a response to a condition which reduces the quality of life, while on the other hand, it coexists with a number of factors increasing the risk of reinfarction in the future, as anxiety disorders have been proved to coexist with hypertension, high cholesterol levels, smoking (including nicotine dependence), alcohol and drug abuse and with obesity [1–3].

Some patients cope with anxiety by denying the presence of the disease and ignoring endangering signals. In the first stage following myocardial infarction this mechanism reduces the level of negative emotions and may positively affect the patient's functioning. In the long run, however, it impedes the patient's confrontation with the consequences of the disease. Such patients are less motivated to undergo treatment and rehabilitation and to comply with the doctor's directions [4]. The likelihood of medical complications in the future is therefore increased.

Depressed mood and depression

Depressed mood is a common response to myocardial infarction. Between 20% and 30% of the patients hospitalized for myocardial infarction manifest mild to severe depressive symptoms. As many as 60% of patients referred for coronary angiogra-

phy show symptoms of depression, which, coupled with ischemic heart disease, considerably impairs their functioning, the chances of recovering and the prognosis [5]. Coexistence of depression and a somatic disorder affect the patient's health to a much greater degree than coexistence of two somatic disorders [6]. In addition a considerable percentage of patients following acute myocardial infarction (38–48%) report a depressive episode shortly before the infarction [7].

Other psychological responses following myocardial infarction

In addition to anxiety and depression the psychological responses following myocardial infarction may include agoraphobia (triggered by catastrophic thinking), exhaustion, hostility and health-related sadness, anger, the feeling of surprise and disgust [8].

Post-myocardial infarction patients may also show a tendency to social withdrawal. Studies indicate that one third (31–35%) of patients following myocardial infarction show limited participation in social activities during the first year after infarction. A similar percentage of patients (27–33% of women and 22–28% of men) show a low level of social anchoring [9] described as participation in formal and informal social groups [10].

Psychological functioning following myocardial infarction

The physical and psychological consequences of ischemic heart disease contribute to a considerable impairment of the quality of life in all dimensions, both physical and mental ones [5, 9]. The experience of myocardial infarction also affects the ability to achieve life goals. The obstacles interfering with the attainment of these life goals are associated with a higher level of stress and a lower health-related quality of life after hospitalization [11].

Gender-related differences are essential to coping with the consequences of myocardial infarction. Men manifest a higher level of anxiety about their health, while women show a more pronounced tendency to manifest avoidance behaviors [8].

The time factor is extremely important in coping with the consequences of ischemic heart disease. Within the first year following myocardial infarction patients show an increasing effectiveness of coping with the physical consequences [9]. Also, with time, the health-related quality of life increases. However, about 20% of the patients show signs of reduced quality of life related to emotional func-

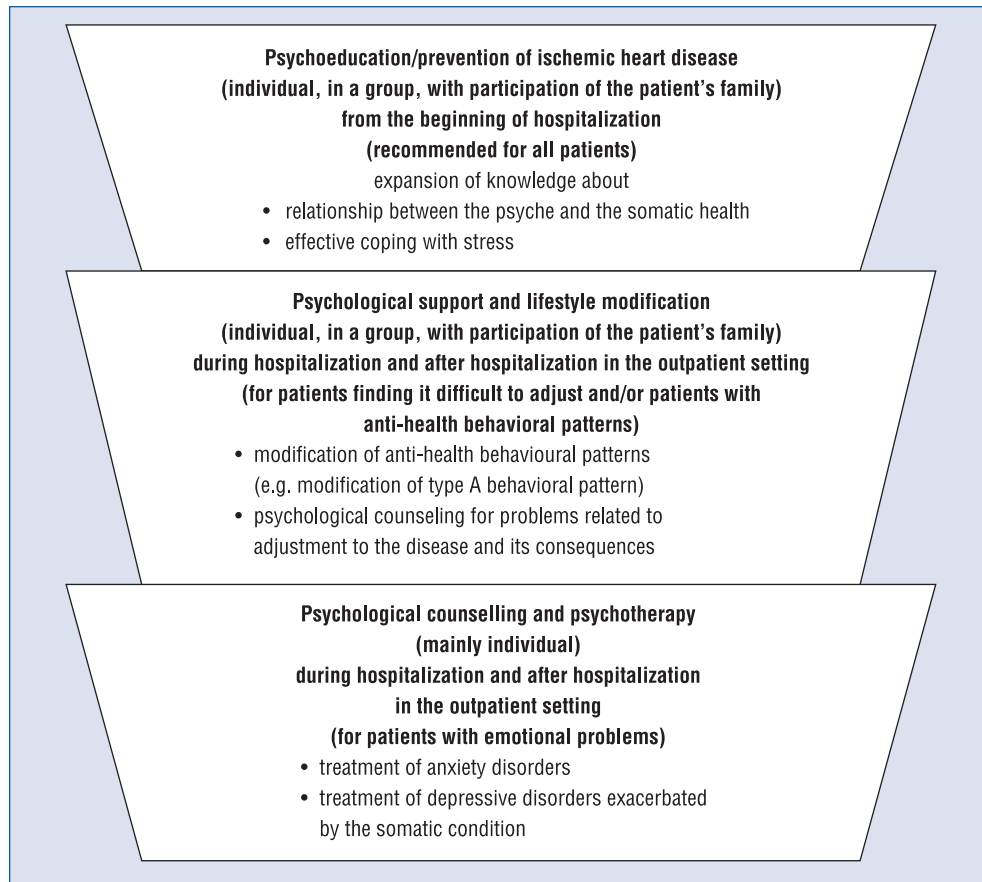


Figure 1. A hierarchy of psychological influences on patients following myocardial infarction according to the severity of psychological problems related to the somatic status and treatment stage.

tioning even 3–5 years after their infarction. The high level of anxiety and stress following myocardial infarction coexists with the difficulties to make the necessary life changes.

It is estimated that the highest quality of life in the first year following myocardial infarction is reported by patients who had the ability to take advantage of various forms of social support: children, partners, friends, grandchildren. Patients who received support from their closest ones at the time of the illness and strengthened their family relations, reported a better functioning and health-related quality of life during the first year following myocardial infarction. In addition, a significant improvement in the quality of life was also noticed by patient who completed a full cardiac rehabilitation programme and returned to work or other forms of activity carried out before the infarction [9]. For this reason it is very important to strengthen the feeling of control over one's own health, believing in oneself and see the benefits of rehabilitation.

Goals of psychological support following myocardial infarction

Psychological support for patients following myocardial infarction is focused on several areas: secondary prevention of ischemic heart disease, support in the adjustment to the disease, to its consequences and to its treatment, modification of behavioral patterns that are harmful for health and reduction of the level of anxiety and stress caused by this experience (Fig. 1).

Secondary prevention of ischemic heart disease

Secondary prevention aims to change the patient's lifestyle and health habits with the view to minimizing the risk of health deterioration. It involves a number of areas of patient activity. Collaboration of the patient with the psychologist concentrates on forming a favorable attitude towards the disease or forming an adequate image of the

disease and of its treatment. The amount of knowledge about the disease, its causes, its consequences and expectations regarding treatment outcomes is the cognitive representation of the disease. The cognitive representation refers to giving the meaning to the symptoms of the disease, predicting its course, duration and consequences and predicting the ways in which it can be controlled and treated [12]. Having an adequate knowledge about the disease is essential for behaviors related to treatment and experience of the cardiac episode. These behaviours include, among other things, the promptness of decision to call for an ambulance, the propensity to make changes in one's lifestyle (diet and physical activity) and the readiness to return to work. An adequate perception of the consequences of the disease and the control over the recovery process contributes to the motivation to comply with the doctor's directions and completion of a full cardiac rehabilitation program [13].

Reducing the level of anxiety

In the process of providing psychological support to patients following myocardial infarction a particular emphasis is placed on interventions reducing the severity of anxiety symptoms. Patients with severe symptoms of anxiety and depression are more prone to look for the causes of their disease in the sphere of mental functioning. This affects the possibilities of coping with the consequences of myocardial infarction [14]. Studies show that the severity of anxiety may be the reason why patients give up participation in prevention and rehabilitation programs [13]. On the other hand, taking advantage of psychological support (for instance, in the form of psychoeducation and psychological counseling for the patient and his or her family) considerably reduces the severity of anxiety and depressive symptoms [15], contributes to increased motivation to undergo rehabilitation and increases the level of physical activity.

Modification of behavioral patterns

Modifying behavioral patterns is a very important aspect of work with cardiac patients. Some of the important risk factors for ischemic heart disease include type A behavioral pattern and type D personality.

Type A behavioral pattern is characterized by a readiness to extreme competitiveness in the fight for achievements, the feeling of excessive responsibility, aggressiveness and hostility (usually hidden hostility), impatience, excessive excitability and constant rush in speaking and behaving (Fig. 2).

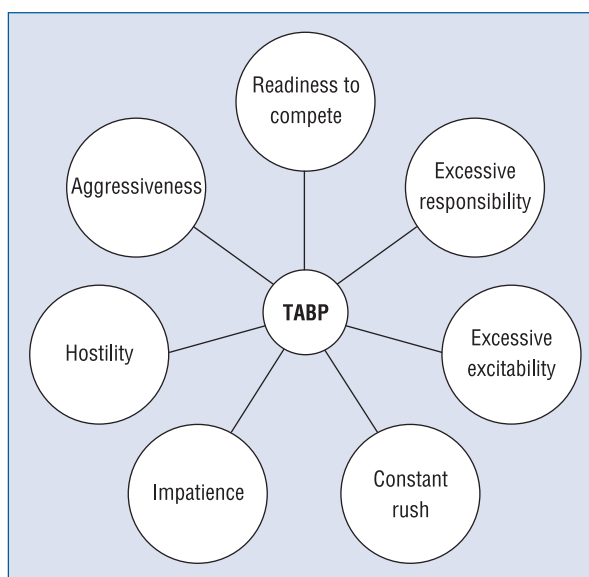


Figure 2. Type A behavioral pattern (TABP).

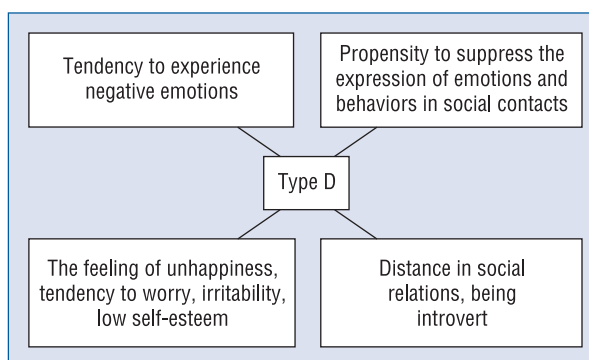


Figure 3. Characteristics of type D personality.

The mechanisms linking TABP and ischemic heart disease are of behavioral and pathophysiological nature [16]. The behavioral mechanisms include behaviors harmful for health, such as smoking, alcohol abuse, and inappropriate diet. The direct pathophysiological mechanisms include increased heart rate, significantly increased blood pressure in response to stimuli, elevated cortisol levels and elevated catecholamine levels.

Type D personality is characterized by a tendency to experience negative emotions in different types of situation along with a propensity to suppress the expression of emotions and behaviors in social contacts (Fig. 3). Patients with this type of personality often feel unhappy, tend to worry, are easy to irritate, have low self-esteem, create distance in social relations and are introvert. Numer-

ous studies suggest a significant effect of type D personality on mortality related to ischemic heart disease and on the severity of cardiovascular symptoms [17]. Working with automatic negative thoughts and behavioral patterns leading to the suppression of the expression of emotions and needs may positively affect psychosocial functioning and prognosis in patients with ischemic heart disease.

Other goals of psychological support

Psychological interventions are also aimed to increase the possibility of recognizing one's own difficulties and coping strategies and to increase the awareness of signals sent by the body, which may help the patient to more rapidly respond to potential health-threatening situations. At the same time the patient undergoes training of abilities to cope with the physiological symptoms of stress, express emotions and needs in interpersonal relations, reduce the level of hostility, the feeling of identity in the illness (self-picture of a patient). In situations where the patient finds it difficult to cease smoking, collaboration with the psychologist involves fighting the tobacco dependence.

In order to increase the quality of life at the time of illness and to achieve positive effects of coping with the consequences of myocardial infarction it is important to create or enhance coping based on confronting one's current health situation, optimism and belief in oneself and one's possibilities [9]. It is important that the patient learns to reduce the stress by controlling its physiological aspects. Studies show that relaxation exercises (progressive relaxation or qigong) improve mental functioning (reduces the level of anxiety and improves the self-perceived quality of life) and somatic functioning (by reducing blood pressure and heart rate, for instance) [18].

Conclusions

Patients following myocardial infarction may find it difficult to adjust to their new health situation. These difficulties may take the form of depressive or anxiety reactions and impaired social functioning. The psychological problems encountered during cardiac rehabilitation may considerably interfere with recovery and reduce the motivation to undergo treatment and comply with the doctor's directions. For this reason it is important that the patients are provided with psychological support. Getting to know the patient's individual traits (e.g. personality type, level of anxiety) and his or her life situation (e.g. level of social support) helps to se-

lect the most effective form of psychological intervention. Patients following myocardial infarction who are provided with psychological support during and after hospitalization have a higher quality of life and significantly lower risk of reinfarction in the future.

Acknowledgements

The author appreciate help of Paweł Baka with preparation of the authorized English version of the manuscript.

The authors do not report any conflict of interest regarding this work.

References

1. Barger SD, Sydeman SJ. Does generalized anxiety disorder predict coronary heart disease risk factors independently of major depressive disorder. *J Affect Disord*, 2005; 88: 87–91.
2. Gomez-Caminero A, Blumentals WA, Russo LJ, Brown RR, Castilla-Puentes R. Does panic disorder increase the risk of coronary heart disease? A cohort study of a national managed care database. *Psychosom Med*, 2005; 67: 688–691.
3. Patten SB, Liu MF. Anxiety disorders and cardiovascular disease determinants in a population sample. *Int J Ment Health*, (serial online), 2007; 4: 2 (Available from: Academic Search Complete, Ipswich, MA).
4. Levine J, Warrenburg S, Kerns R et al. The role of denial in recovery from coronary heart disease. *Psychosom Med*, 1987; 49: 109–117.
5. Sawicka J, Jurkowska G, Bachórzewska-Gajewska H, Dobrzycki S. Evaluation of the quality of life and frequency of depressive symptoms in patients with coronary heart disease before planned coronarography. *Przeegl Kardiadiabet*, 2008; 3: 23–27.
6. Moussavi S, Chatterji S, Verdes E et al. Depression chronic diseases, and decrements in health: results from the World Health Surveys. *Lancet*, 2007; 370: 851–858.
7. Fiedling R. Cognition, control, and mood during recovery from AMI. *Abstr Int Conf Health Psychol B. P. S. UK* 1998.
8. Bowman G, Watson R, Trotman-Beasty A. Primary emotions in patients after myocardial infarction. *J Adv Nurs*, 2006; 53: 636–645.
9. Kristofferzon M-L, Löfmark R, Carlsson M. Coping, social support and quality of life over time after myocardial infarction. *J Adv Nurs*, 2005; 52: 113–124.
10. Hanson BS, Östergren P-O, Elmståhl S, Isacson S-O, Ranstam J. Reliability and validity assessments of measures of social networks, social support and control — results from the Malmö Shoulder and Neck Study. *Scand J Soc Med*, 1997; 25: 249–257.
11. Boersma SN, Maes S, Joeke K. Goal disturbance in relation to anxiety, depression, and health-related quality of life after myocardial infarction. *Qual Life Res*, 2005; 14: 2265–2275.
12. Leventhal H, Benyamini Y, Brownlee S, Diefenbach M, Leventhal E, Patric-Miller L. Illness representation: Theoretical foundations. In: Wienman PKJ ed. *Perceptions of health and illness*. Harwood Academic Publishers, Singapore 19–46.
13. Yohannes AM, Yalfani A, Doherty P, Bundy C. Predictors of drop-out from an outpatient cardiac rehabilitation programme. *Clin Rehabil*, 2007; 21: 222–229.

14. Day RC, Freedland KE, Carney RM. Effects of anxiety and depression on heart disease attributions. *Int J Behav Med*, 2005; 12: 24–29.
15. Yoshida T, Kohzuki M, Yoshida K et al. Physical and psychological improvements after phase II cardiac rehabilitation in patients with myocardial infarction. *Nurs Health Sci*, 1999; 1: 163–170.
16. Rozanski A, Blumenthal JA, Kaplan J. Impact of psychological factors on the pathogenesis of cardiovascular disease and implications for therapy. *Circulation*, 1999; 99: 2192–2217.
17. Pedersen SS, Denollet J. Is type D personality here to stay? Emerging evidence across cardiovascular disease patient groups. *Curr Cardiol Rev*, 2006; 2, 205–213.
18. Ngor Hui P, Wan M, Kwong Chan W, Man Bun Yung P. An evaluation of two behavioral rehabilitation programs, qigong versus progressive relaxation, in improving the quality of life in cardiac patients. *J Altern Complement Med*, 2006; 12: 373–378.