*Alicja Nasiłowska-Barud[1, 2], Mariola Żuk[2], Judyta Jabłońska-Brzozowska[1, 2], Andrzej Wysokiński[1], Wojciech Brzozowski[1]

Psychological problems in patients with atrial fibrillation

Problemy psychologiczne chorych z migotaniem przedsionków

[1]Chair and Department of Cardiology, Medical University, Lublin
Head of Department: prof. Andrzej Wysokiński, MD, PhD
[2]Department of Clinical Psychology, Medical University, Lublin
Head of Department: prof. Alicja Nasiłowska-Barud, MD, PhD

Key words

atrial fibrillation, anxiety, restlessness, psychological support, psychological therapy

Słowa kluczowe

migotanie przedsionków, niepokój, lęk, pomoc psychologiczna, terapia psychologiczna

Summary

Introduction. Atrial fibrillation is the most common cardiac arrhythmia. Epidemiological studies show that 1-2% of the global population of adults suffer from atrial fibrillation and the number is growing. Mortality among patients with atrial fibrillation is twice as high as in patients with normal sinus rhythm. Thromboembolic complications such as ischemic stroke are much more common too. Also transient cerebral ischemia is from two to seven times more frequent as in people who do not suffer from atrial fibrillation. This is the background which should be considered in analyzing psychological situation of patients suffering from atrial fibrillation.

Aim. Analysis of mental functioning of patients with atrial fibrillation.

Material and methods. A group of 137 patients was selected from 2337 patients who were treated for atrial fibrillation at the Cardiology Clinic of the Medical University of Lublin in 2014. Patients who were admitted to this study required psychological support. During the treatment the clinical data were obtained which allowed to analyse the mental functioning of patients provided with psychological therapy and support.

Results. Psychological therapy and support is required by patients with severe symptoms of anxiety, restlessness, insecurity and depressed mood. Special psychological therapy was also required by patients with complications of underlying disease. Special psychological therapy approach is required by a group of patients qualified for modern, invasive methods of atrial fibrillation treatment such as percutaneous ablation.

Conclusions. Psychological support provided to patients with atrial fibrillation should include: 1. controlling negative emotions experienced by patients in their illness, especially fear of pain, possible complications and fear of death, 2. psychoeducation of patients concerning methods of coping with pain, anxiety and other unpleasant experiences, 3. strengthening psychological resilience and patient's motivation to become involved in the treatment and cooperate with doctors and psychologists.

Streszczenie

Wstęp. Migotanie przedsionków (ang. *atrial fibrillation* – AF) jest najczęstszym zaburzeniem rytmu serca. Badania epidemiologiczne wskazują, że migotanie przedsionków występuje od 1-2% wśród światowej populacji dorosłych i liczba zachorowań stale wzrasta. Umieralność wśród osób z migotaniem przedsionków jest dwukrotnie większa niż u osób z prawidłowym zatokowym rytmem serca. Znacznie częściej również występują powikłania zatorowo-zakrzepowe, m.in. udary niedokrwienne mózgu. Także epizody przemijającego niedokrwienia mózgu są 2-7 razy częstsze niż u osób, u których nie występuje migotanie przedsionków. Tworzy to tło, na którym należy widzieć psychologiczną sytuację chorego z migotaniem przedsionków.

Cel pracy. Analiza funkcjonowania psychicznego chorych z migotaniem przedsionków.

Materiał i metody. Spośród 2337 pacjentów wyodrębniono grupę 137 chorych, którzy w 2014 roku byli leczeni z powodu migotania przedsionków w Klinice Kardiologii Uniwersytetu Medycznego w Lublinie i wymagali pomocy psychologicznej. Podczas jej udzielania uzyskano dane kliniczne pozwalające przeprowadzić analizę funkcjonowania psychicznego chorych objętych pomocą i terapią psychologiczną.

Wyniki. Pomocy psychologicznej wymagają chorzy z AF, u których występują nasilone objawy niepokoju, lęku, poczucie zagrożenia i obniżony nastrój. Specjalnego podejścia psychoterapeutycznego wymagają pacjenci z powikłaniami zasadniczej choroby. Pomocą psychologiczną należy objąć też chorych kwalifikowanych do leczenia migotania przedsionków z zastosowaniem nowoczesnych, inwazyjnych metod, jak przezskórna ablacja.

Wnioski. Pomoc psychologiczna udzielana chorym z migotaniem przedsionków winna obejmować: 1. opanowanie sfery negatywnych emocji doświadczanych w chorobie,

Address/adres:

*Alicja Nasiłowska-Barud
Chair of Clinical Psychology,
Medical University
ul. Jaczewskiego 8, 20-950 Lublin
tel. +48 (81) 724-43-27
fax +48 (81) 724-41-51
alicja.nasilowska-barud@umlub.pl

zwłaszcza lęku przed bólem, możliwymi powikłaniami i śmiercią, 2. psychoedukację pacjenta odnośnie metod radzenia sobie z bólem, lękiem i innymi nieprzyjemnymi doznaniami, 3. wzmocnienie odporności psychicznej i motywacji chorego do zaangażowania w proces leczenia i współpracy z zespołem terapeutycznym.

INTRODUCTION

Atrial fibrillation (AF) is the most common heart rhythm disorder. Epidemiological studies indicate that atrial fibrillation occurs from 1-2% of the world's population of adults and the number of cases is increasing. In Europe, about 6 million people suffer from this disorder. In Poland, atrial fibrillation concerns about 400 thousand people. Prognostic studies show that over the next twenty years, the number of cases will increase twice to 800 thousand. Therefore, atrial fibrillation is a major epidemiological problem and is one of the most serious risk factors for stroke (1).

Mortality among people with AF is twice higher than in patients with normal sinus rhythm of heart. There are also more often thromboembolic complications as ischemic strokes to the brain. The episodes of brain ischemia are 2-7 times more frequent than in people with no AF.

Atrial fibrillation is defined as the most common supraventricular tachyarytmia, which is characterized by fast (350-700/min) uncoordinated atrial activation, leading to a loss of efficiency, so ventricular irregularity is accompanied by a contraction of their hemodynamic rhythm.

These are the most common features of atrial fibrillation (AF):

- atrial fibrillation diagnosed for the first time,
- recurrent atrial fibrillation – if it occurred over two episodes,
- paroxysmal atrial fibrillation ishealed spontaneously or lasts less than 7 days,
- persistent – takes more than 7 days is not healed spontaneously,
- persisted – usually prolonged attempts of cardioversion were ineffective or there were no such trials (1).

The most common causes of occurrence of AF include: age, hypertension, symptomatic heart failure, tachycardiomyopathy, valvular heart diseases, cardiomyopathies, atrial septal defect, other congenital heart defects, coronary artery disease, symptomatic of thyroid function disorders, obesity, diabetes, chronic obstructive pulmonary disease, sleep apnea, chronic kidney disease (1, 2).

According to the recommendations of the European Society of Cardiology (ESC) the symptoms of atrial fibrillation are divided according to the 4-degree scale:

I – lack of feeling symptoms,
II – mild symptoms, causing no impairment of daily functioning,
III – severe symptoms, limiting daily activities,
IV – symptoms that prevent the daily functioning.

The most frequently occurring symptoms of atrial fibrillation include palpitations, chest pain, a feeling of breathlessness, tiredness, dizziness, fainting, sweating, the worse effort tolerance, feeling of anxiety, polyuria, irregular heart rate pulse deficit (3-5).

Patients with atrial fibrillation are submitted to cardiology clinics or departments of cardiology in different stages of advancement of the disease.

AIM

Analysis of mental functioning of patients with atrial fibrillation.

MATERIAL AND METHODS

The analysis of the mental functioning in patients with AF was performed on the basis of clinical data. It was collected during the psychotherapeutic support for 137 patients from a group of 2337, who in 2014 were hospitalized in the Department of Cardiology Medical University in Lublin with atrial fibrillation diagnosed. Among the 137 patients with AF, there were 52 (38%) women aged from 43 to 77 avg. 62.3 and 85 (62%) of men aged 51 to 74 avg. 63.4 years. In 28 (20.5%) people AF occurred for the first time, while in 109 (79.5%) AF recurred, and 14 (10.2%) patients were qualified for ablation.

Detailed psychological interview was conducted with patients, and then they were supported with a psychotherapeutic professional aid.

Analysis of psychotherapeutic aid to the patients with AF enabled presentation of the most important problems with mental functioning of the patients with AF.

Discussion on the mental functioning conditions of the patients with atrial fibrillation should be started from a situation where the diagnosis is given for the first time. Usually a patient suddenly, unexpectedly begins to feel uneven heartbeat, heartbeat is sometimes very fast. The patients may feel palpitations, in addition the patient may experience pain in the chest with a feeling of shortness of breath or excessive sweating. Uneven heartbeats, chest pain and shortness of breath cause anxiety and a sense of threat. The patient is frightened by his or her health condition. He or she knows that something is wrong with their heart. According to common knowledge the appearance of the chest pain usually means myocardial infarction. In result, the patient is convinced that he or she has a myocardial infarction. Myocardial infarction is a direct threat to life. Uneven heartbeats and chest pain intensifies anxiety and anxiety increases fast heart beat and pain. The sense of threat of their own life grows. In the early stage, when there is a rapid and uneven heartbeat, patients usually do not call for professional help. They try to seek the help in a family, take medications that are available at home such as herbal drops, drops or they go to bed to rest. When these methods fail, patients decide to call for help. After the patient is placed in the

emergency ward and EKG is performed, the patient receives the information that the cause of mood deterioration is atrial fibrillation, namely, abnormal heart action. The patient also receives information that there is a need to stay in the hospital and being treated to restore the normal sinus heart rhythm. The patient is usually does not know anything about his or her illness and may know nothing heart rhythm disorders.

Information about heart attacks is more common in everyday knowledge, rather than about abnormal heart rhythms. The patient is placed in a clinic or ward, and the team treating must rely on the existing guidelines of the European Society of Cardiology (ESC, European Society of Cardiology from 2010) and on their basis they must make a decision regarding the application of proper treatment, designed to restore normal sinus arrhythmia (1, 6, 7).

Among patients whose atrial fibrillation occurred for the first time there are people after myocardial infarction, after surgical treatment such as vascular arterial coronary bypass (CABG), after heart transplantation, after valvular heart diseases corrections, with heart failure, with hypertension, with cardiomyopathy, diabetes, hyperthyroidism, or chronic obstructive pulmonary disease. Patients with these diseases already have experience after a previous treatment.

Most patients need to take a decision about the treatment in the clinic or cardiology ward and it raises anxiety and insecurity of their own life. In addition, patients can also feel the anxiety from the family or loved ones. For many patients the necessity to stay in the clinic or ward is very difficult to accept, there is also a difficult adaptation to the new conditions. Patients admitted to the hospital in order to treat atrial fibrillation come from different social backgrounds. Very often there is a large distance from their place of residence to the clinic. There is also different condition of their mental functioning and the level of cognitive performance.

Usually at the time of presenting the information to the patients about the need to stay in the ward and using intensive treatment patients try to negotiate with the doctor. The patient very often gives the arguments that his or her health condition worsen due to the excessive physical excertion, limited hours of sleep, increased mental workload, etc. The patient uses the intrapsychic ways of coping in a difficult situation which are safeguard mechanisms of represive type (crowding, refuse) (8, 9).

When the doctor's decision concerning patient's stay in the ward cannot be changed, the patient accepts it and agrees to be in hospital, although one may not be entirely convinced that this is the best option. Usually the patient feels insecure, frightened and full of doubts. The patient says that three hours before he or she felt completely healthy and was able to complete his or her duties normally. What is more, the patient seeks for the reason of the illness in his or her previous behavior.

Once, the doctor recognised the first episode of atrial fibrillation on the basis of clinical symptoms and electrocardiographic examination the patient should be supported with professional psychological assistance.

The first phase of assistance and psychological intervention begins with the assessment of the mental state of the patient. Clinical psychologist looking after the patient performs an initial psychological diagnosis and conducts psychological therapy aimed at:

- helping the patient to control fear, distress, sometimes strong anxiety,
- ensuring the patient about his or her safety,
- reducing the mental tension,
- providing mental support (4, 10-14).

The psychological impact is mainly based on informing the patient about the place and the therapy conducted, explaining the peculiarities of treatment in a clinic/cardiology ward, informing the patient about the need to monitoring the electrical activities of the heart (EKG), and the need to monitoring blood pressure. Clinical psychologist activates and encourages the patient to talk about their own experiences and discuss all the doubts. Working with the patient, the psychologist conducts supporting therapy and psychoeducation concerning the understanding of the disease and the strengthening objective factors of recovery process. There are also gradually introduced selected relaxing exercises (15-17).

The second group are the patients with recurrent atrial fibrillation FA (if there were more than 2 episodes). Reoccurring symptoms which were once experienced, immediately evoke the anxiety and the sense of threat. Anxiety becomes more complex: it appears due to uneven heartbeats, and malaise. Anxiety is growing as a result of:

- inability to cope alone,
- the need to go to the hospital,
- concerns about the effectiveness of treatment,
- consideration of the possible complications, i.e. stroke,
- worries about the family,
- worries about patient's own life.

Anxiety usually takes two forms: an explicit and hidden. Public anxiety is characteristic for women not only burdened with atrial fibrillation, but also suffering from ischemic heart disease. The hidden anxiety often occurs in men with atrial fibrillation, and in men with coronary heart disease (3, 18).

Successive recurrences of atrial fibrillation makes that the patients react with fear, not only on the direct appearance of atrial fibrillation, but they await the recurrences of the illness with fear. This is so called anxiety to the alleged threat. In this situation it may take the character of neurotic anxiety. In addition, clearly lowered mood up to depressive mood is present in the patients (4, 19).

When used pharmacological treatment does not bring the desired effect and fails to restore the proper sinus heart rhythm, patients feel growing levels of anxiety, distress and low mood. The stay in a hospital is longer, or even after the sinus rhythm is obtained after a short time the atrial fibrillation reoccurs once again and the treatment at the clinic/cardiology ward must be repeated.

A separate problem for patients with atrial fibrillation is adapting to the ways of treatment. Methods and ways of treatment can be divided into three groups:

1. Temporary treatment of atrial fibrillation, includes drug therapy or electric cardioversion – restoring normal heart rhythm by using electric current.
2. Extended treatment of atrial fibrillation, includes two strategies:
   a) sinus rhythm restoration and its maintenance by using antiarrhythmic medicines,
   b) the fixation of atrial fibrillation and ventricular rate control.
3. Invasive treatment:
   a) percutaneous ablation involving the introduction of ablation lead to the heart and intentional damage – the destruction of places in the heart responsible for abnormal electrical impulses that cause atrial fibrillation,
   b) crioablation, similarly to the electric method shown above, it is the introduction of crioablation lead to the heart and by using a low temperature deliberately damaging heart muscle in a place which caused arrhythmia (1, 2, 20).

When drug therapy does not bring the expected results, the doctor offers performing of electrical cardioversion to the patient with atrial fibrillation. The most often, the patient does not have any knowledge what cardioversion is. When patients hear the word "electric" they connect it offered method with the use of electric current. Patients usually respond with an anxiety and often fear. In addition, symptoms of anxiety are intensified when patients receive the next information that there is additional pretreatment with anticoagulants necessary before the scheduled cardioversion may be performed with the use of anesthesia.

The information: "Anesthesia is necessary to perform cardioversion", "You are going to fall asleep for a while" immediately evokes the question "Am I going to wake up?" and "Am I going to be the same man when I wake up?", "Is cardioversion going to make any irreversible changes in my body and in my life?". The symptoms of low mood ale visibly stronger, depressive mood may also appear. The anxiety and fear reach a high level, very often tears appear in the patient's eyes (21, 22).

The doctor preparing the patient for cardioversion should explain the need for the application of this method, the merits of its application and the expected results. While the psychological help offered to the patients assigned to electrical cardioversion should be focused on:

- providing the patients with emotional support,
- ensuring a sense of security,
- reducing the level of concern and anxiety,
- helping the patient in understanding the disease,
- helping in accepting the disease and subsequent restrictions,
- assisting in the development of ways to defend against pessimism.

For many years, in the treatment of atrial fibrillation, prevention of thromboembolism is used. It primarily prevents strokes. Depending on the risk profile of the patient, it includes the application under the control of INR (international normalized ratio) of oral anticoagulants such as warfarin, acenocumarol, dabigatran, riwaroksaban or aspirin. During this therapy the patient must strictly obey doctor's recommendations, patients must take certain doses of medication and monitor INR regularly. Anticoagulant treatment is particularly difficult to apply in the elderly patients. The elderly are usually cared for by relatives who need to cooperate with the doctor. Application of anticoagulant treatment without strict control is connected with a very high risk of bleeding complications (21, 22).

It is possible that the patients who are informed by a doctor about possible treatment complications connected with anticoagulant therapy may excessively focus on the strict observance of the use of the necessary doses of the medicine. They sometimes control the rate of INR too often and observe their body too detailed. Such behavior connected with the need for long-term treatment of anticoagulant may take the form of obsessive-compulsive neurotic disorders. During the subsequent control visits patients report a problem of fatigue and tiredness due to being rigorous with taking anticoagulants doses appropriate. They are also tired of the constant monitoring of INR rate, which is necessary, to modify the dose of the drug, when the indicator turns out to be invalid (21-23).

Another group consist of patients with persistent or permanent atrial fibrillation. This is usually the case, that despite numerous attempts and methods to restore proper heart sinus rhythms and the effort of the specialists to help the patients, the therapy is unsuccessful. Patients are often admitted to the clinics/cardiology branches due to the malaise, uneven heartbeats, chest pain, feelings of breathlessness, mental and physical activities deterioration. Patients are informed about the need to accept unequal work of their hearts, less physical capacity and carrying a very regular lifestyle by a team of doctors. For many patients the information is very difficult to adopt and accept. It is often the cause of despair and mental crisis. Patients analyze their past life and try to find the parts when they worked really hard and so took up excessive effort and risked with overstrain. Patients recollect periods when he led an irregular eating style, smoked cigarettes and drank too much alcohol. In this way they justify their illness, experiencing a strong sense of guilt. The functioning of the patients is very close to the psychological crisis. Patients may not resolve the problem as it exceeds their possibilities and ways to cope.

Emotional crisis is the reaction of the man on the difficult situation, the problem of life temporarily exceeding its adaptive capabilities. The use of own existing problem solving skills is already becoming insufficient. The condition can last a few hours, a few days or weeks and aims to develop new ways to adapt (10, 14, 17). Mental illness can be a cause of the crisis, including heart disease such as atrial fibrillation.

The following phases may be distinguished in perception of mental crisis by the patient:

- rejection phase: denial of heart disease, and being ill,
- anxiety phase: anxiety reactions occur concerning the possibility of dangerous abnormal heart

rhythms, of the overall weakness, or event the possibility of sudden death,
- mood deterioration phase: symptoms of depression, impatience and gloom,
- anger, resentment, envy phase: that others are healthy,
- deals and negotiations with fate phase: the patient makes the decision to change the existing lifestyle, refers to God or other holiness,
- the acceptance of the disease phase: patient tries to adapt to difficult circumstances.

In the event of illness, particularly heart disease, patients use a whole range of defense mechanisms. The most commonly observed include:
- the repressive mechanisms (denial, attenuation, avoiding talks about the disease, rejecting the medical diagnosis, etc.),
- rationalization mechanisms – projection, transfer, fantasizing,
- a sensitive type mechanisms, intellectualization, conversations with experts,
- adaptive mechanisms – help in controlling the negative emotions and enabling the process of treatment (9).

Every ill person, especially suffering from heart disease shows the individual behavior. They are closely related to and dependent on the individual psychological resistance. In result, among the ways of behavior of patients with atrial fibrillation, we can distinguish adaptive and non-adaptive behavior.

In adaptive behaviour: patients try to viably evaluate their situation, they relieve emotional tension revealing negative emotions in dealing with the disease, they look for the help of doctors, recognize the complexity of the issue and try to resolve it in stages. They are aware of the fatigue and the need to rest. They are is active in selected areas of life and control their feelings, realistically assess the situation and choose the activities that can be carried out according to their health condition. They are motivated to make changes in their lives, they have confidence in themselves and others.

In non-adaptive behaviour: patients do not study the issue actively, denies the existence of the problem, deny negative feelings. They allow the illness to disorganize their everyday life, they cannot control themselves or cope with fatigue and exhaustion. Such patients do not look for help from qualified people or they look for her from the incompetent ones (i.e. a neighbor's tip). They do not accept offered help and feel overwhelmed by their own problems.

CONCLUSIONS

Psychological help and intervention in disease must consider:
- the degree of advancement of the disease, because the type of patient-provided psychological support depends on that,
- mastering the realm of negative emotions experienced in the disease,
- providing cognitive and informative support,
- strengthening the motivation of the patient to cooperate with the treatment team,
- strengthening healthy, adaptive defense mechanisms of the personality in dealing with the disease,
- teaching the patient's use of social support,
- education concerning changes in the style and philosophy of life.

BIBLIOGRAPHY

1. Wytyczne dotyczące postępowania u chorych z migotaniem przedsionków. Kard Pol 2010; 68 (supl. VII): 487-566.
2. Moukabary T, Gonzalez MD: Management of atrial fibrillation. Med Clin North Am 2015; 99: 781-794.
3. Kamrowska A: Anxiety and cardiac disorders. Half A Merk Drug 2008; 24: 481-483.
4. Watkins LI, Blumethal S, Davidsn JR et al.: Phobic anxiety, depression, and risk of ventricular arrhythmias in patients with coronary heart disease. Psychosom Med 2006; 68: 651-657.
5. Lane F, Langman CM, Lip GY et al.: Illness perceptions, affective response, and health-related quality of life in patients with atrial fibrillation. J Psychosom Res 2009; 66: 203-210.
6. Wytyczne ESC dotyczące rozpoznawania oraz leczenia ostrej i przewlekłej niewydolności serca. ESC (HFA) 2012: 137-145.
7. Kluk KM, Woźniakowska-Priest B: Niewydolność serca i migotanie przedsionków – zabójczy duet współczesnej kardiologii. Folia Cardiologica Excerpta 2014; 9: 67-73.
8. McCabe PJ, Barnason SA: Illness perceptions, coping strategies, and symptoms contribute to psychological distress in patients with recurrent symptomatic atrial fibrillation. J Cardiovasc Nurs 2012; 27: 431-444.
9. Kratochvil R: Podstawy psychoterapii. Zysk i S-ka, Poznań 2003: 1-387.
10. Nasiłowska-Barud A, Wysokiński A: Niewydolność serca i możliwości terapeutyczne pomocy psychologicznej. Kardioprofil 2008; 5: 389-394.
11. Thompson TS, Barksdale DJ, Sears SF et al.: The effect of anxiety and depression symptoms on this discourse titled atrial fibrillation. Pacing Clin Electrophysiol 2014; 37: 439-446.
12. Patel D, Mc Conkey ND, Sohaney R et al.: A systematic review of depression and anxiety in patients with atrial fibrillation: the mind-heart link. Cardiovasc Psychiatry Neurol 2013, 1-1.
13. James RK, Gilliland B: Strategie interwencji kryzysowej. Wyd. PARPA, Warszawa 2005, 15-804.
14. Pilecka B: Kryzys psychologiczny – wybrane zagadnienia. Wyd. UJ, Kraków 2004: 1-220.
15. Jacennik B, Hulewska A, Piasecka A: Komunikowanie o zdrowiu, chorobie i leczeniu. Między psychologią a medycyną. Vizja Press, London 2012: 1-220.
16. Maximin E, Stevic-Rust L, White-Kenyon S: Choroby serca – powrót do zdrowia. GWP, Gdańsk 2002: 1-278.
17. Nasiłowska-Barud A: Choroba jako kryzys psychologiczny. [W:] Kubacka-Jasiecka D, Mudyń K (red.): Kryzys, interwencja i pomoc psychologiczna. Nowe ujęcia i możliwości. Adam Marszalek, Toruń 2003: 17-28.
18. Trovato GM, Pace P, Cangemi E et al.: Gender, lifestyles, illness perception and stress in stable atrial fibrillation. Clin Ter 2012; 163: 281-286.
19. Lange HW, Herrmann-Lingen C: Depressive symptoms predict recurrence of atrial fibrillation after cardioversion. J Psychosom Res 2007; 63: 509-513.
20. Ferns SJ, Naccarelli GW: New Oral Anticoagulants: Their Roles in Stroke Prevention in High-Risk Patients with Atrial Fibrillation. Med Clin North Am 2015; 99: 759-780.
21. Lomper K, Rycombel A, Uchmanowicz Z: Przestrzeganie i zastosowanie się do leczenia antykoagulacyjnego oraz antyarytmicznego pacjentów z migotaniem przedsionków. Choroby Serca i Naczyń 2014; 11: 230-237.
22. Potpara TS, Larsen TB, Deharo JC et al.: Conducted by the Scientific Initiatives Committee of the European Heart Rhythm Association (EHRA); Conducted by the Scientific Initiatives Committee of the European Heart Rhythm Association EHRA. Oral anticoagulant therapy for stroke prevention in patients with atrial fibrillation undergoing ablation: results from the First European Snapshot Survey on Procedural Routines for Atrial Fibrillation Ablation (ESS-PRAFA). Europace 2015 Jun; 17: 93-98.
23. Gehi AK, Sears W, Goals N et al.: Psychopathology and symptoms of atrial fibrillation: implications for therapy. J Cardiovasc Electrophysiol 2012; 23: 473-478.

received/otrzymano: 08.06.2015
accepted/zaakceptowano: 09.07.2015