

Cardiac disorders with psychosomatic background

Zaburzenia kardiologiczne o podłożu psychosomatycznym

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Abstract

Psychosomatic disorders can be described as psychosocial-derived organic disorders. The influence of depression, sleep disorders, quality of life, addictions, work environment, family situation, and stress on atrial fibrillation, palpitations, syncope, chest pain, coronary heart disease, and heart failure has been analysed in this paper. The correlation between psychosomatic disorders and the cardiovascular system has been shown. It allows us to conclude that an attending physician, while taking medical history of cardiac patients, should take into consideration factors that may have a negative impact on their mental health, which can be risk factors in the development or aggravation of an already present cardiovascular disease.

Streszczenie

Zaburzenia psychosomatyczne to zaburzenia organiczne, w których etiopatogenezie znaczący udział mają czynniki psychospołeczne. W niniejszej pracy przeanalizowano wpływ depresji, zaburzeń snu, samopoczucia, zadowolenia z jakości życia, stosowania substancji uzależniających, sytuacji w miejscu pracy, sytuacji rodzinnej i stresu na występowanie migotania przedsionków, kołatania serca, omdleń, bólów w klatce piersiowej, a także choroby wieńcowej i niewydolności serca. Stwierdzono istnienie korelacji między zaburzeniami psychosomatycznymi a występowaniem wybranych schorzeń układu sercowo-naczyniowego. Pozwala to na wysunięcie wniosku, że podczas zbierania wywiadów u pacjentów kardiologicznych należy uwzględnić również czynniki mające potencjalnie negatywny wpływ na ich zdrowie psychiczne, będące jednocześnie czynnikami ryzyka wystąpienia lub zaostrzenia już istniejących chorób układu sercowo-naczyniowego.

Introduction

Psychosomatic disorders can be described as psychosocial-derived organic disorders. They are often associated with anxiety caused by stress, acute infections, poisoning, ischaemia, side-effects of some medications, vitamin deficiency, starvation and cachexia, pain, noise and vibrations, hyper- and hypothermia, sensory deprivation, electrical shock, radiation, surgeries, and systemic diseases [1].

The aim of the paper is to evaluate some cardiovascular dysfunctions, at the bottom of which are commonly known psychosomatic disorders.

Psychosomatic disorders

Progress in diagnostics of psychosomatic disorders in cardiology, as well as the growth in importance of

psychosocial issues in the clinician's everyday work, inspired the Clinical Commission of the German Heart Society (DGK) to update data published in 2008 [2].

Cardiovascular diseases are the most common cause of death in both sexes, but among women between 35 and 75 years old the risk of psychosomatic factors can be underestimated. It is due to the fact that the majority of women's deaths caused by cardiovascular diseases occur in women over 75 years old, who are not considered in most large population studies. Moreover, psychosomatic disorders occur more often among women than among men [2].

Psychosocial factors such as depression, anxiety, lowered quality of life, and low social status are associated with higher risk of development of a cardiovascular disease, along with worse prognosis after its manifestation. They can also influence 'classic' risk factors, i.e.:

hypercholesterolaemia, smoking cigarettes, diabetes, obesity, malnutrition, and lack of physical activity [2, 3].

Patients with chronic heart failure or coronary heart disease should be diagnosed for depression (also known as major depressive disorder), and, in the case of a positive diagnosis, they should be treated properly because even mild depressive symptoms significantly increase the risk of hospitalisation and death. Selective serotonin reuptake inhibitors are preferred (after evaluation of contraindications and side effects). Using tri- and tetracyclic antidepressants is not advised, but in exceptional cases, after thorough analysis of risks and benefits, they can be prescribed. Patients responding correctly to pharmacotherapy tend to have better cardiological prognosis [2, 3].

It has been proven that in order to prevent cardiovascular diseases, hospitalisations, and death among the patients, as well as proper diet and physical activity, psychotherapy and psychosocial intervention should be offered [2, 4]. These methods are more effective among men [2].

General practitioners, internists, and cardiologists, who conduct long-term patients' follow-up, also have an opportunity to raise the issue of psychosocial factors, and they should use it. While taking the medical interview, they should ask not only about the classic risk factors, but also about personal and environmental factors, such as stress at work or family situation. The main goal is to reduce the number of undiagnosed concomitant diseases among cardiac patients, improving their quality of life and their prognosis [2, 5].

Mental disorders and palpitations

Palpitation is described as perceiving a strong, accelerated, and irregular heart function [6]. Also, it is one of the most common reason for patients' visits to cardiology clinics. However, in some cases palpitations do not have a cardiac aetiology [7].

In 2014, Alijaniha *et al.* carried out research about the occurrence of palpitations associated with concomitance of mental disorders [7].

The aim of this research was to prove the correlation between mental health and occurrence of palpitations by comparing two groups: people suffering from mild palpitations and healthy people.

The group consisted of 110 people – 55 were sick (the main criteria were: palpitations as the main symptom lasting at least 3 months and proper age. The exclusion criteria were: intellectual disability, extensive chronic diseases, psychosis or other major mental disorders confirmed by a psychiatrist, cardiac diseases confirmed by a cardiologist. Fifty-five were healthy with matching sex, age, and education [7]. The Iranian version of 28-GHQ (28-item general health questionnaire) was used to evaluate mental disorders, such as: anxiety, depression, social disorders, insomnia, and somatic symptoms. The method

used the Likert scale, in which the patient can receive 0 to 84 points (mental disorders are found in patients who received 23 or more points). The survey showed that 24 (43.6%) of 55 healthy patients and 47 (85.4%) of 55 sick patients suffered from mental disorders, of which the most common were social disorders and the least common was depression [7]. Moreover, other research showed a high degree of correlation between palpitations and psychiatric disorders [8].

The results of both studies allow us to believe that one should search for mental rather than organic causes of palpitations in a significant number of patients complaining about palpitations [7, 8].

Atrial fibrillation in patients with depressive disorders

In 2013, von Eisenhart Rothe *et al.* published the results of a comparison study between the frequency of occurrence of paroxysmal and chronic atrial fibrillation dependent on occurrence of depressive disorders of various degree of severity in patients [9].

The study was carried out in two simultaneous clinical trials, assuming that the degree of depressive mood would be determined with Major Depression Inventory (MDI) scale and the type of atrial fibrillation would be determined with 7-day observation using ECG. In the MDI scale a patient can receive 0 to 50 points; at 20–24 points mild range of the disorder is diagnosed, at 25–28 points – medium, and at 30 or more points the disease is severe [9, 10]. The paroxysmal atrial fibrillation was diagnosed when fragments of both correct sinus rhythm as well as arrhythmia in the ECG during the seven-day observation were observed. The chronic atrial fibrillation was diagnosed when the observation with Holter ECG show persistent arrhythmia. Out of the people initially admitted to the study 392 patients were diagnosed with chronic and 310 with paroxysmal atrial fibrillation. Amongst examined patients, 38.8% experienced mild, 19% medium, and 14.8% severe depressive disorders [9].

A statistically significant correlation between occurrence of chronic atrial fibrillation and more severe forms of depression was proven. Simultaneously, any other factors that could influence the results, such as heart failure in NYHA scale, were ruled out [9].

The obtained results allow us to draw conclusions about association of the occurrence of chronic atrial fibrillation with concomitance of severe or clinical depressive disorders. It should become an important diagnostic clue for physicians treating these patients, and they should expect this type of heart disorder when the patient suffers from depression.

Correlation between sleep disturbances and occurrence of circulatory system diseases

In 2014, Michal *et al.* published an article about correlation between sleep disturbances (described as

difficulty in falling asleep, staying asleep, or sleeping too much) and cardiovascular and metabolic diseases, inflammatory processes, and others. A total of 10,000 German citizens who enrolled in the Gutenberg Health Study filled in the PHQ-9 (Public Health Questionnaire) sections concerning impairment of sleep [11]. According to the Likert scale, the patients were diagnosed with sleep disturbances when they reported problems at least a few times in the preceding 2 weeks. The data on the history of the disease (inter alia, coronary heart disease, myocardial infarction, and stroke as well as cardiovascular risk factors, such as smoking, drinking alcohol in excessive doses, obesity, and diabetes) and socioeconomic status were collected by using personalised, computer-assisted interviews. C-reactive protein and fibrinogen data were collected based on laboratory analysis of blood samples. The study showed that almost 65% of the examined were diagnosed with sleep disturbances [11].

Clinically noteworthy impairment of sleep (diagnosed in 19% of the patients) showed significant correlation between occurrence of coronary heart disease, myocardial infarction, or dyslipidaemia. The association of these sleep disturbances with heart failure, diabetes, and increased C-reactive protein and fibrinogen level was suspected. However, factors such as clinically significant depression and anxiety, obesity, smoking, excessive consumption of alcohol, and living without a partner seemed to correlate with them more strongly [11].

This may lead to the conclusion that sleep disturbances, especially clinically significant ones, should be taken into consideration as a risk factor of coronary heart disease, myocardial infarction, as well as dyslipidaemia. Also, mental disorders such as clinically significant depression and anxiety could suggest a possibility of occurrence of heart failure.

Syncope as a result of mental disorders

A syncope is a temporary loss of consciousness caused by decreased cerebral perfusion. A syncope has a sudden beginning and usually subsides spontaneously and rapidly [12]. In the general population syncope constitute 1–3% of hospitalisations and 3–5% of outpatient advice [13].

Such consciousness disorders can be caused by various pathologies, including serious neurological and cardiological diseases. It leads to a multistage, and consequently expensive, diagnostic process. It is estimated that, despite full evaluation of patients' health, 20–30% of the causes of syncope remain unexplained [14].

Facing this problem, in 2009 French researchers from the Interdisciplinary Centre of Unexplained Faintness and Syncope (Centre Interdisciplinaire des Malaises Inexpliqués et des Syncopes, C.I.M.I.S), created by the wards of cardiology, neurology, otolaryngology (vestibulology), and psychiatry (psychoso-

matic medicine), diagnosed patients with syncope or unexplained obtundations and evaluated their health by mutual consultations and collegial discussions.

Out of 91 patients consulted by C.I.M.I.S, 22 (24%) were referred to diagnosis for psychosomatic disorders. Fifteen (68%) of these met the criteria of anxiety, 6 (27%) – severe depressive disorders, and 5 (22%) faced problems of addiction [15].

The diagnostics of psychogenic-derived syncope should be based on both rejecting other aetiologies, as well as detailed analysis of patient's mental health, in order to avoid the of ignoring other symptoms that may point towards a correct diagnosis. Moreover, even if the organic disorder is undeniable, stress and anxiety play an important role and can intensify the primary disorder and lead to recurrence of syncope. Emphasis has been placed on a problem that has not been analysed sufficiently: using addictive substances [15].

Non-cardiogenic chest pains in panic disorder

Fleet *et al.* suggest that even half of the cases of chest pain cases can have psychosomatic aetiology that is not related to cardiac disorders. Moreover, such location of pain factor repeatedly aggravates stress and panic associated with fear that the cause of pressure and discomfort in the chest could be a myocardial infarction. Anxiety induced in this way usually leads to exacerbation of the pain in the mediastinum through so-called panic disorder [8, 16].

It is indicated that 30–70% of patients with the above-described symptoms suffer from mental disorders, such as chronic anxiety or social mismatch. Direct non-cardiac causes of discomfort in the chest include: peristalsis disorders, gastroesophageal reflux disease, and excessive sensitivity to visceral pain. Almost all of these symptoms can have psychosomatic aetiology [16].

A set of physical symptoms resulting from mental causes is called a panic disorder. It is described as a sudden, overwhelming anxiety and as an episode of overpowering fear or discomfort associated with occurrence of organic or cognitive symptoms. It is proven that panic disorder results in autonomic nervous system disorders, which could lead to development of psychosomatic pain stimuli [16, 17].

Somatic and cognitive symptoms caused by a panic disorder constitute a phenomenon that is encountered quite often. Its most common symptom is chest pain of unspecified aetiology (75% of patients with panic disorder, who had visited the emergency department, were diagnosed with non-cardiac chest pain). Undiagnosed and untreated panic disorder can lead to exacerbation of already existing diseases of social mismatch (e.g. agoraphobia) or cause them. These often lead to depression, which can lead to the development of an actual cardiovascular disease (coronary

artery disease was present in 44% of patients with panic disorder) [16].

Handling of psychosomatic disorders in cardiac patients

The treatment of psychosomatic disorders should be matched individually to each patient and should include elimination or downscaling of stressors [18], psychotherapy or psychopharmacologic treatment in case of severe, clinically significant depressive disorders and anxiety [19, 20], as well as regulation of diet and lifestyle [21], so that it becomes the least overwhelming both physically and mentally for the patient. When treating the mentioned depressive and anxiety disorders, pharmacological treatment, especially using tricyclic antidepressants, should be restricted (due to side effects) to psychiatrically severe cases [20]. None of the methods tested in large population studies has shown clear evidence of its effectiveness in decreasing the risk of induction of cardiovascular disease by psychosomatic disorders or all-cause mortality or hospitalisation [19–22]. However, psychotherapy and psychopharmacological treatment in patients with at least moderate depression or anxiety seem to improve not only mental, but also physical health [19, 20]. Therefore, the problem with treatment of psychosomatic disorders in cardiology remains unresolved and awaits new trials to develop an appropriate therapy.

Summary

Despite unquestioned progress of medicine, the diagnostic process and treatment of patients suffering from cardiac disorders still creates many problems and doubts as far as determining factors predisposing to their development goes. However, they should undoubtedly include environmental and psychosocial factors, which has been demonstrated in many studies.

Even though there are more and more therapeutic methods, they mostly focus on handling the effects of cardiovascular diseases caused by psychosomatic disorders, not their prevention. The prophylaxis of these disorders should include reduction of factors aggravating mental health, such as social mismatch, sociological problems, depression, anxiety, panic disorder, and others.

Given the fact that cardiac disorders have become one of the most common causes of death in highly developed countries and have been given the name 'diseases of affluence', it seems that a lot can be done to improve their prevention.

Described symptoms may also be an important diagnostic clue for cardiologists in ambiguous situations or at early stage of the disease. For that exact reason, it seems relevant to obtain information not only about the physical, but also mental state of pa-

tients' health, which, in some cases, may prove to be just as valuable.

Conflict of interest

The authors declare no conflict of interest.

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