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*Selected psychological problems of patients with cardiac
transplantation on a permanent pacing treatment*

A cardiac transplantation is a widely recognized method of treating an extreme phase of heart failure. It is a complex process. It involves somatic and mental changes. A developing heart failure forces the medical team to suggest the patient the last resort in treatment – a cardiac transplantation. Suggesting this ultimate treatment causes the patient awaiting a cardiac transplantation to feel extremely tense inside, very anxious and nervous with symptoms of depression and doubt likely to appear (4). Anxiety appears complex in nature: 1) anxiety of making a very serious decision about a complicated operation that a cardiac transplantation is, 2) consciousness of an unceasing life hazard, 3) anxiety gets further intensified if the patient's health condition worsens while awaiting the operation, 4) if the time before a donor is found extends, 5) when the chance is insecure that the appropriate donor is found. In this situation a regular psychological and therapeutic assistance for the patient is essential.

A successful cardiac transplantation is typically followed by the following stages: surgical and intensive care phase, post-operational phase, the discharge and ambulatory phase (3). After a successful cardiac transplantation the patient has to remain under constant medical control and assistance. The patient is obliged to take immunosuppressive medicines and periodically also antibiotics, steroids and antiarrhythmic drugs. Therefore, the problem has a complex nature and gets further complicated when pharmacological treatment turns out to be ineffective and permanent pacing by means of a pacemaker implantation proves necessary (2,10,12). At that point it should be realized that a cardiac transplantation procedure involves a number of factors likely to become responsible for mental changes: 1) First of all a serious heart illness with only one, last resort therapy – cardiac transplantation. 2) The period of awaiting the transplantation. 3) Anxiety of an unsuccessful operation. 4) Anxiety of a possibility of transplant rejection. 5) Necessity of remaining under constant medical control and undergoing a nonstop pharmacological treatment. 6) The requirement of being treated by means of permanent pacing as a result of recurring cases of arrhythmia (11).

The purpose of this work is to evaluate the mental functioning of patients after cardiac transplantation treated with permanent pacing.

MATERIAL AND METHODS

The research was performed on a group of 8 male patients aged 19–60 with the mean age of 46, all of whom had undergone cardiac transplantations. Transplantations were performed in 3 patients as a result of post infarction cardiomyopathy, while in the other 5 due to congestive

cardiomyopathy. Post transplantation survival rate varied from 5 to 10 years. Owing to continual heart rhythm disorder pacemakers were implanted in all patients. Of the total number of patients, 2 had university education, 4 secondary and 2 vocational education. One of the observed patients returned to work, 6 patients remained on disability pension and the youngest patient, a 19-year-old was a secondary school student. In order to evaluate the mental condition of the surveyed patients authorized translations of the following works were used: C.D. Spielberg's 'Inventory of State of Trait of Anxiety' by J. Strelau, M. Tyskarczyk and K. Wrześniewski, J.C. Crumbaugh and L.T. Maholick's Purpose in Life Test PIL by Z. Płużek and H.G. Gough and Heilbrun's The Adjective Check List ACL by Z. Płużek. An ACL test was used twice for a real and ideal self-concept evaluation (5,6,14).

RESULTS

Psychological test results obtained through C.D. Spielberg's Inventory State and Trait show (Fig. 1) that the examined patients are characterized by a high level of the anxiety of state ($M=8$) and as high a level of the anxiety of trait ($M=7.43$), the anxiety of state being clearly greater. Thus, it can be concluded that post cardiac transplantation patients under permanent pacing react to difficult and stressful situations with a higher level of the anxiety of state. They experience subjective tension and anxiety accompanied by the autonomous nervous system being stimulated.

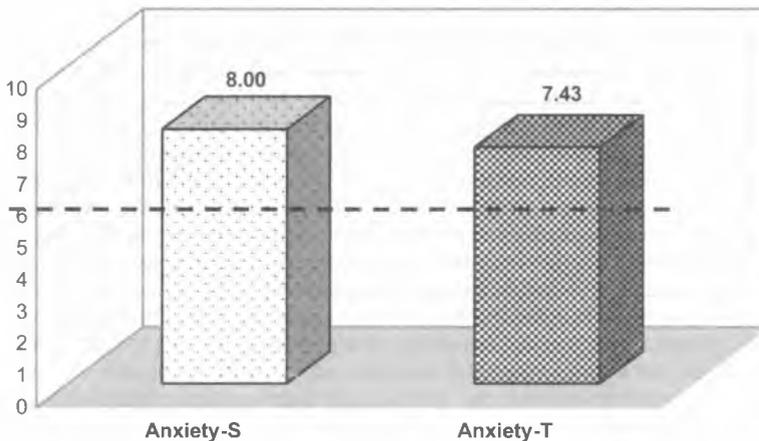


Fig. 1. State-Trait Anxiety Inventory by C.D. Spielberg, J. Strelau, M. Tyskarczyk, K. Wrześniewski. Average tests results in post-cardiac transplantation patients treated with permanent pacing $N=8$

A characteristic feature of the anxiety of state is its high changeability under the influence of various stressful factors. However, a high level of the anxiety of trait is evidence that the patients with cardiac transplantations are characterized by constant dispositions and susceptibility to experiencing and reacting with strong anxiety to danger situations. It can be concluded from the test results obtained with the help of 'Purpose in Life Test PIL' by J.C. Crumbaugh

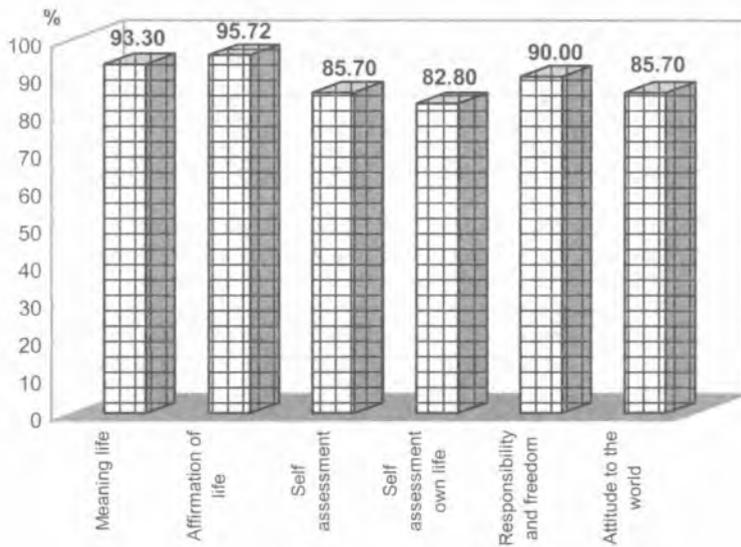


Fig. 2. Purpose in Life Test PIL by J.C. Crumbaugh and L.T. Maholick. Categorization of tests results in post-cardiac transplantation patients treated with permanent pacing N=8

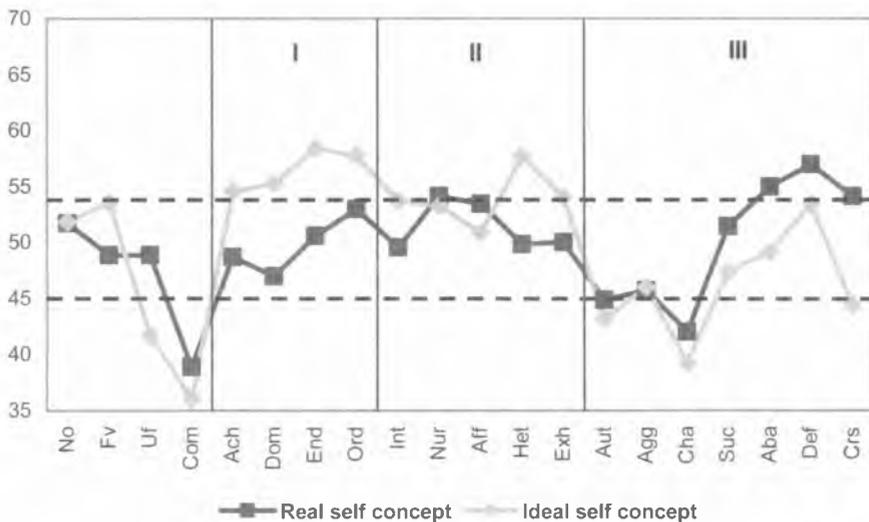


Fig. 3. The Adjective Check List ACL by H.G. Gough and Heilbrun. Average results of real and ideal self interpretation in post-cardiac transplantation patients treated with permanent pacing N=8

and L.T. Maholick the patients after cardiac transplantations achieved a high level of sense of value and life affirmation ($M=120.6$). The analyzed group value life as the highest principle and they do not reveal any symptoms of existential neurosis. Despite a high level of anxiety they do not show any signs of resigning themselves to developing their natural aspirations to maturity of personality. They do not avoid guiding themselves in life with creativity and responsibility. They fill their existence with positive contents. They focus their actions on the future and in spite of obstacles they never give up but find the meaning of life and the importance of their existence.

Having categorized the results (Fig. 2), the highest category appears to be the approval and affirmation of life, and then the meaning of life, responsibility and freedom, self-assessment and attitude to the world. The lowest category but still relatively high remains self-assessment of the patient's own life. The researched group try to give meaning to their life. They feel responsible for the endowment of life, they are conscious of their freedom to choose between values.

The third part of the PIL test gives the researched group an opportunity to talk freely about their life, plans, their aspirations and intentions. The patients with cardiac transplantation describing their life said: 1. Life is very lively and full of satisfaction. 2. They need health most in life. 3. They want to live a happy life and be able to maintain their families. 4. They consider death a part of the course of life, a natural end of earthly existence. 5. They find resorting to alcohol or drugs for oblivion a case of utter stupidity. 6. Life is full of riddles and surprises for them. 7. They never thought of suicide. 8. In their life other people's support is very important.

Figure 3 shows test results of patients with cardiac transplantations treated with permanent pacing obtained with the help of The Adjective Check List ACL by H.G. Gough and Heilbrun. Out of 37 ACL test scales, 15 mental needs scales were selected for analysis. The needs were divided into three categories:

Category I: Needs aiding at creative realization of achievements. In the realistic vision of oneself on an average level the following needs were shaped: a need for achievements (Ach) and aspirations for the completion of personal goals, a need for domination (Dom), assuming a leading role, a need of endurance (End) in struggling with difficulties. Out of these needs, the strongest one seems to be a need for order (Ord) and organization of life with which strict self-control (S-cn) and self-evaluation are related.

Category II: Social needs facilitating contacts with another person or a group of people. A need of self-interpretation (Int) and understanding other people as well as a need for nursing and being of help to other people (Nur) remain moderate. A need for affiliation (Aff) that is a wish to be part of a community, a group, a wish to be with other people are also average. The need for heterosexual contact (Het) and exhibiting (Exh) the patient's own sensations and feelings in front of others as well as a need for experiencing support (Suc) from others are moderate too.

Category III: Needs associated with attitudes to life. In the third category the two needs: for autonomy (Aut) and independent actions as well as a need for making changes (Cha) are characteristically low. Patients with cardiac transplantations do not reveal a need to act autonomously which could be a result of the anxiety of making any decisions. However, autonomous behaviour gives them more sense of security. By trying to achieve stability they become consolidated in their former positions, hence little interest on their part in new solutions. The need to demean oneself and abate one's own value (Aba) and a need to defer (Def) and assume subordinate roles in interpersonal relations which provides the patients with a feeling of security remain on an average level. As low as these is a need for readiness to convert the structure of one's own personality (Crs). A low status of this need may also mean the anxiety of change. The researched patients are characterized by high self-control (S-cn) but average personal adaptation (Pa). In the ideal self-interpretation a set of needs and categories connected with achievements clearly increases. Patients reveal ambitions and aspirations for accomplishments (Ach). They aspire to assuming responsibility and domination (Dom). The level of endurance

and dealing with difficulties (End). A need for order and organization (Ord) in one's own life became stronger. A tendency to dominate, endure and be perfectionist clearly rose too.

In Category II a need for heterosexual contact (Het), a need to exhibit and share with others the patient's own feelings and sensations visibly increased. In Category III a need for more self-abatement (Aba), a need to defer to others in interpersonal relations (Def) and openness and readiness to ask for psychotherapeutic help (CrS) rose. Self-control (Scn), self-confidence together with personal adaptation (Pa) clearly increased.

DISCUSSION

Among the mental disorders most frequently written about in patients with cardiac transplantations are consciousness disturbance, even ones of psychotic character, variations of mood, emotional disorders, shifts in self-assessment and anxiety (7,8)

One of the reasons for anxiety is believed by Wolcott to be heart control biopsies. Other authors like Surman, Freeman and House think post-cardiac transplantation mental changes in patients may be caused by administering immunosuppressors (1,2,10,12,13). This research results show that a high level of anxiety persists not just immediately after the operation but also within the many years of rehabilitation. A high level of the anxiety of trait indicates some permanent predispositions in the researched patients to react with a strong anxiety to situations of danger. Living with someone else's heart, having to remain under constant medical care, consciousness of possibility of transplant rejection, and a necessary continuing immunosuppressor therapy create chronic situations of threat and distress. In the real self-concept interpretation the achievement needs as well as the needs of social contacts and the ones associated with building an attitude to life remain on the moderate level. However, in the ideal self-concept interpretation there was a noticeable increase in needs supporting creative completion of the researched patients' achievements and aspirations as well as a clear increase in the needs connected with building an attitude to life.

The results of Siwińska and co-authors' research emphasize that the post-cardiac transplantation patients retain a feeling of their own value and confidence in their abilities. The quoted authors conclude that the illness and its consequences did not significantly violate the structure of the patients' concept of themselves. They only resulted in diminished self-assessment, which is probably an outcome of the somatic condition (9).

My research results show that post-cardiac transplantation patients treated with permanent pacing have a strong sense of the meaning of life, life affirmation and they are aware of their responsibility for their saved life.

CONCLUSIONS

1. Post-cardiac transplantation patients treated with permanent pacing are characterized by a high level of both the anxiety of State and the anxiety of Trait.
2. No symptoms of existential neurosis were found and a high level of a sense of the meaning of life together with the proper assessment of the value of life, life affirmation, responsibility and freedom made themselves evident.
3. In the real self-interpretation the patients are characterized by moderate needs determining the completion of their aspirations and achievements, average needs conditioning social functioning in the direct interpersonal contact as well as moderate needs associated with building an attitude to life.

4. A much stronger status of the set of needs connected with achievements is observed in the ideal self-interpretation. A need for heterosexual contacts and a need to share the patient's own sensations and feelings visibly increase. Also, self-control, self-confidence and personal adaptation get enhanced.

5. Assessment of the mental condition of post-cardiac transplantation patients treated with permanent pacing is absolutely necessary for the appropriate pharmacological and psychotherapeutic treatment. It is indispensable in the process of rehabilitation and prevention.

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SUMMARY

The aim of the study was to evaluate the psychological condition (psychological functioning) of patients after cardiac transplantation who were treated with permanent pacing. The study group consisted of 8 men, aged 19–60, after cardiac transplantation. Due to persistent disorders of cardiac

rhythm the patients were implanted a pacemaker. Besides the basic clinical tests the patients underwent the following psychological tests: State-Trait Anxiety Inventory (STAI) by C.D. Spielberger, Scale PIL by J.C. Crumbaugh and L.T. Maholick and The Adjective Check List ACL by H.G. Gough and Heilbrun. The applied methods allowed to define the structure and level of anxiety. They also made it possible to analyze the subjects' acceptance of life and their perception of the sense of life as well as determination of a characteristic set of mental needs. The studied subjects presented a high level of anxiety both as a condition and as a feature. No symptoms of existential neurosis were confirmed, but a high level of perception of the sense of life with correct evaluation of the value of life were revealed. Comparison of the real and the ideal concept of oneself allowed to select a set of psychological needs. The real concept of oneself was characterized by moderate needs determining the realization of the desire to succeed, moderate needs characteristic of social functioning in the direct interpersonal contacts, and moderate needs connected with the attitude towards life. In the ideal concept of oneself considerably higher intensity was noted concerning the set of needs connected with success. Clearly the need for contacts with the opposite sex was increased as well as the need for sharing one's own experiences and feeling with others. Self-control, self confidence and personal adaptation were also found to be greater.

Niektóre problemy psychologiczne pacjentów po transplantacji serca, leczonych stałą elektrostymulacją

Celem pracy była ocena stanu psychicznego (funkcjonowania psychicznego) pacjentów po transplantacji serca, leczonych stałą elektrostymulacją. Grupę badaną stanowiło 8 mężczyzn w wieku od 19 do 60 lat, u których dokonano transplantacji serca. Z powodu utrzymujących się zaburzeń rytmu serca pacjentom implantowano elektrostymulator. Oprócz podstawowych badań klinicznych chorym wykonano badanie psychologiczne Inwentarzem Stanu i Cechy Lęku C.D. Spielberga, Skalą PIL J.C. Crumbaugh i L.T. Maholicka i Testem Przymiotników ACL H.G. Gougha i Heilbruna. Zastosowane metody pozwoliły na określenie struktury i poziomu lęku, dokonanie analizy poczucia sensu i afirmacji życia oraz na wyodrębnienie charakterystycznego zespołu potrzeb psychicznych. Badani uzyskali wysoki poziom zarówno lęku jako stanu, jak i lęku jako cechy. Nie stwierdzono objawów nerwicy egzystencjalnej, a ujawnił się wysoki poziom poczucia sensu życia z prawidłową oceną wartości życia. Porównanie realnego i idealnego obrazu siebie pozwoliło na wyodrębnienie zespołu potrzeb psychicznych. W realnym obrazie siebie pacjentów charakteryzują umiarkowane potrzeby warunkujące realizację dążeń do osiągnięć, umiarkowane potrzeby charakteryzujące funkcjonowanie społeczne w bezpośrednim kontakcie interpersonalnym oraz umiarkowane potrzeby związane z ustosunkowaniem się do życia. W idealnym obrazie siebie znacznie wyższe nasilenie przyjął zespół potrzeb związanych z osiągnięciami. Wyraźnie wzrosła potrzeba kontaktów z osobami przeciwnej płci oraz potrzeba dzielenia się z innymi własnymi przeżyciami i doznaniem, a także wyraźnie wzrosły samokontrola, zaufanie do siebie i przystosowanie osobiste.