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Complex Assessment of Clinical Features and Internal Picture of the Disease in Various Forms of Coronary Heart Disease

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Abstract

Arterial hypertension and coronary heart disease cause huge damage to the health of the population, being the strongest risk factor for the excess mortality of the population. We must not forget that we diagnose, we provide therapeutic help primarily to a person suffering from a somatic or psychosomatic disease. At the same time, without going into the inner world of the patient, his mental status, self-perception, fears and hopes. At the same time, the personality, as an integral individuality, reacts at all levels to changes inside and outside the body (B.S. Merlin, 1986; V.V. Belous, 1999; I.V. Boyazitova, 2005).

Keywords: *clinical forms, AH/CHD, internal picture of the disease*

Introduction

Diseases of the cardiovascular system have a number of features that have determined the choice of them for our study. Excessive neuropsychiatric loads became the norm of life of the most able-bodied part of the population (Oganov R.G., 2002, Kobalava Zh.D., Gudkov K.M, 2002). Up-to-date is the further improvement of the quality of diagnostics and complex therapy of cardiac patients, and the acceleration of the development of a practical disease prevention system that takes into account the entire clinical complex and the internal picture of the disease. The clinical material of the data on the internal picture of the disease is of a completely new nature and allows one to look at the disease taking into account the interdisciplinary approach based on the best traditions of therapy. Previously, the scientific school of Professor Ananyev VA. began to develop this problem and the proposed materials are a continuation of those ideas that he laid down during his lifetime in the theory of adaptation and re-adaptation, disease and human health.

Methods

In the process of the study, the following clinical, clinical-epidemiological, sociological, psychometric, descriptive, statistical-mathematical methods were used as the main methods. The study is prospective, the duration of follow-up is 1 year. Patients were examined initially and after 1 year (quality of life, clinical and psychological status, ECG, echocardiography, lipid blood and glucose evaluation). In this case, patients receive basic therapy, recommended in practical public health institutions. Surveys were conducted on the basis of polyclinic №3 of Veliky Novgorod.

The study included 105 patients with angina pectoris, including 37 women (mean age 61.05 ± 8.17) and 68 men (55.0 ± 9.01). Women were older ($p < 0.001$). In a group of patients with a history of myocardial infarction, 105 patients were examined, including 36 women (mean age 63.0 ± 9.46) and 69 men (55.2 ± 10.9). Women were older ($p < 0.001$). In the group of patients with heart failure, 105 patients were examined, including 22 women (mean age 65.1 ± 6.7) and 83 men (mean age 58.3 ± 8.4). The significance of differences between groups was $p < 0.01$.

The psychological status was determined by means of personal questionnaires: HADS (Hospital Anxiety and Depression Scale), Stress interview, MMPI «mini-

cartoon» in the modification of V.P. Zaitseva, Freiburg personal questionnaire – FPI, Kettell questionnaire, attitude questionnaire (TOBOL), Toronto alexithymia assessment scale, Spielberger-Hanina self-assessment scale.

The quality of patients' life is estimated from the questionnaire: SF-36 (The Medical Outcome Study Short Form 36 Health Survey) (Davies A. R., Ware J.E., 1981); The MLHF (Minnesota Living with Heart Failure Questionnaire) questionnaire (Rector T.S., Kubo S.H., Cohn J.N., 1987).

Clinical and instrumental data are processed by classical for biomedical work methods using criteria for parametric and nonparametric statistics. Statistical and mathematical calculations were carried out with the help of statistical licensed program Statistica 10 in the Russian version (2012). License number AGAR207F394525FA-6.

Results

It was established that the group of patients with angina pectoris, transferred MI and heart failure did not have significant statistical differences in terms of medical and demographic indicators. At the same time, when comparing the groups by diagnosis, it was established that age differences were noted only when comparing patients with angina pectoris and heart failure at p> 0.05 due to a younger group of patients with angina pectoris. The proportion of working people is higher in the group of patients with angina and with myocardial infarction when compared with a group of patients with heart failure (p <0.05). The most significant differences were noted when assessing the proportion of patients with a disability group at the expense of a group of patients with heart failure (p <0.01 compared with a group of patients with angina and p <0.001 with a group of patients with MI).

According to the conjugacy table, according to the $\chi 2$ Mantel-Haenszel criterion, a negative relationship with the diagnosis was revealed from all risk factors: by gender ($\chi 2$ Mantel-Haenszel is equal to 6.604 with P = 0.037); age ($\chi 2$ Mantel-Haenszel is 4.61 at P = 0.032); frequency of hospitalization ($\chi 2$ Mantel-Haenszel is 9.078 at P = 0.003); satisfaction with work ($\chi 2$ Mantel-Haenszel is 8.98 at P = 0.016); the frequency of surgical interventions ($\chi 2$ Mantel-Haenszel is 19.557 at P = 0.001). The rest of the indicators have no connection.

The clinical picture of IHD in comparative perspective of all three forms of clinical complications had its own peculiarities in terms of lipid spectrum, level and type of cardiac remodeling. Comparative analysis of the normalization time of the pulse and blood pressure revealed faster normalization with MI within 2-3 times when compared with angina. At the same time, the duration of the VEM and its achieved power did not have statistically significant differences. A similar picture is noted when assessing gender differences in patients with angina pectoris. When assessing the duration of the VEM, it was found that among women it was twice as high as that of men. For the remaining parameters, no statistical differences were found.

However, the frequency of dyslipidemia in patients was within 80-90% regardless of diagnosis and sex (P>0.05). It was found that the level of OX content varies significantly depending on the diagnosis and sex. Thus, the content of OX has borderline values in men with angina pectoris and those who have had myocardial infarction. All other patients, regardless of gender and diagnosis, have a high OX content, which reaches a maximum in women with angina pectoris (P<0.05) and MI (P<0.1). Thus, with angina in women, the level of OX content was X med = 6.8 mmol / L with QR = 5.7 ÷ 7.5 mmol / l; in men, X med = 6.2 mmol / l with QR = 5.4 ÷ 6.6 mmol / l. With MI, respectively, in women - X med = 6.4 mmol / l with QR = 5.6 ÷ 7.2 mmol / l; in men - X med = 5.2 mmol / l with QR = 5.2 ÷ 6.7 mmol / l. In women with CH, the value of X med is equal to 6.35 for QR = 5.3 to 7.0 mmol / l, in men X med is 6.2 at QR = 5.5 to 7.0 mmol / l.

When assessing the lipid spectrum, a number of features have also been identified, depending on the clinical forms of IHD and gender. The level of OX in all patients irrespective of diagnosis and gender was in the high range with a maximum of 75% quartile in women with angina and MI (7.5-7.2 mmol / l) and 7.0 mmol / l in men with heart failure (CH). The content of LDL has common regularities. Thus, the level of LDL is referenced to a high level of content (4.6 mmol / l) with a maximum level (in the upper quartile) in women with angina pectoris (5.5 mmol / l). The remaining values are in the same statistical corridor for P>0.05.

The content of HDL has its own characteristic features due to a higher value in women with angina pectoris

who underwent MI (P <0.05). However, all groups of patients belong to the category of patients with a low content of HDL, which is an unfavorable factor.

When assessing the level of triglycerides, it is established that, regardless of gender and diagnosis, their level falls into the category above normal values. The highest values are noted among men regardless of the diagnosis. When assessing the coefficient of atherogenicity according to Klimov, it is shown that, regardless of gender and diagnosis, Ka values significantly exceed the recommended parameters (no more than 4.0).

Thus, the highest values are for heart failure, in the group of which the indicator, regardless of gender (P>0.05) exceeds the recommended parameters by 1.6 times. The maximum excess of Ka in terms of the magnitude of the upper quartile was noted among men with angina pectoris (7.13), circulatory insufficiency (7.56), and women in the same diagnostic group (8.1). We would like to note that the excess of the recommended parameters was noted even in terms of the lower quartile in men with MI (4.09) and CH (4.58) transferred. This indicates a high density of Gauss distribution, especially in the group of patients with heart failure.

The study of the internal picture of the disease included an assessment of the socio-psychological, mental status, quality of life of patients.

As a result of the analysis of the socio-psychological questionnaire, the percentage of subjects was obtained in accordance with one or another subdivision of the questionnaire. The analysis was carried out for each section of the questionnaire, the following percentages were obtained for the group of IHD patients:

Nature of Work: moderate physical activity - 45%, heavy physical work -5%, mental work routine - 50%.

Life Changes Before the First Exacerbation: insignificant 30%, moderate 35%, expressed 35%.

Dissatisfaction with the Material Situation: 5%, weak 25%, moderate 40%, expressed 30%.

Dissatisfaction with Official Position: 30%, weak 25%, moderate 40%, expressed 5%. Dissatisfaction with working conditions: 55%, weak 25%, moderate 10%, expressed 10%.

Dissatisfaction with Working Conditions: 55%, weak 25%, moderate 10%, expressed 10%.

Dissatisfaction with Attitudes at Work: there is no 45%, weak -, moderate 40%, expressed 15%.

Dissatisfaction with Relations in the Family: there is no 20%, weak 45%, moderate 20%, expressed 15%.

Attitude to the Disease in the Family: a harmonious 70%, an indifferent 15%, a negative 15%.

Harmful Habits: smoking 30%, alcohol 20%.

The Effect of the Disease on the Performance of Household Functions: 45% did not affect, 40% is not significant, 15% are hard to fulfill, many had to be abandoned.

The Effect of the Disease on Marital Functions (Sexual Activity): increased -, unchanged 35%, decreased 30%, a pronounced decrease of 35%.

Influence of the Disease on Parental Functions (Upbringing, Attitude Towards Children): the relationship improved 15%, did not affect 50%, not significantly 30%, hard to fulfill - many had to refuse 5%.

In General, the Psychological Climate in the Family: improved 20%, did not affect 45%, not significantly 15%, worsened 20%.

The Effect of the Disease on Production Relations: 15% had to be abandoned by many, 30% of the opportunities for professional growth were inhibited.

The Impact of the Disease on Attitudes Toward Interests, Hobbies: more often - not affected by 20%, not significantly 40%, less often engaged in 25%, refused completely 15%.

During the stress-interview, a strong anxiety of the respondents for their state of health was revealed. 30% of the respondents are disabled.

Thus, among patients with IHD 40% estimate their professional activity as responsible, tense. As a rule, these people were in leadership positions for a long time.

The majority of IHD patients noted the presence of pronounced life changes, most often it is a disease

of one of the family members, a change in the official position. More than 60% of patients are inclined to episodic return of experiences about the most difficult events in a past life. At the same time, these experiences are of a «secretive» nature: «I experience within myself so that no one can see».

The overwhelming number of patients had families. The average figures of family experience are 29.3 ± 11.1 years in the course of IHD disease, the average age of the examined is 56.3 years. More socially normative assessments of family relations are noted: «everything is fine with us». The attitude towards the disease in the family was estimated by the patients as adequate. 80% of patients with IHD characterize themselves as sociable people, therefore they have many good friends and acquaintances, have their own circle of communication both at work and at home. However, 40% of the surveyed noted a sharp restriction of social contacts in the development of the disease. Selected forms of compensation differed in the development of feminine traits. A small number of patients (10%) have pathological attachments: smoking (about a pack of cigarettes a day) and alcohol consumption (moderately). 20% of patients quit smoking due to the progression of the disease. When studying the anamnestic data, it was found that in 42% of cases, before the manifestation of the disease or its aggravation, there were psychological traumas (trauma as a crisis, chaos), such as loss of loved ones, causing significant material damage, shortage of time at work, a new term characterizing the domestic modern reality – «syndrome of information exhaustion», family problems. At the same time, there was a delayed reaction to stress. The manifestation did not follow immediately after experiencing a stressful situation, but was delayed in time from 3 to 12 months.

The conducted study demonstrated a significant representation of anxiety in the surveyed contingents of patients.

Thus, in 23% of patients with IHD, moderate and 76% have high personal anxiety. According to Spielberger-Khanin methods, patients with IHD have higher levels of both personal (57 points) and situational anxiety (51 points) compared to patients with MI, where personal anxiety has 43 points, and situational anxiety - 46 ($t = -2, 44$ at $P = 0.0174$).

The conducted study demonstrated a significant representation of anxiety in the patients examined. So, in 23% of patients with ischemic heart disease, moderate and 76% have high personal anxiety.

In Patients with IHD, It was Found that:

1. In 30% of patients with IHD, expressed anxiety-depressive features are found; 25% have a lower emotional background. These features hamper the socio-psychological adaptation of patients in the social environment.
2. 75% of patients have pronounced alexithymic traits. This is evidenced by the data obtained using the questionnaire Cattell. Indicators for the factors «I», «M» and «N» indicate a decreased emotional sensitivity, a tendency to calculating behavior. Patients are characterized as practical, realistic, oriented to reason, soberly assessing the circumstances and people and not trusting impressions, their emotions and sensations.
3. Analysis of the results of FPI showed an increase in the scales of neuroticism, depressiveness, and also rigid aggressiveness, the latter often restrained by increased self-control. Blocking aggressiveness negatively affects the course of the disease.
4. Patients with IHD can be characterized (Cattell's data) as conflict, more reserved, secretive and cautious. There are difficulties in controlling their emotions, i.e. patients are more impulsive in their drives. They are distinguished by a high sense of responsibility, are more obligatory. They are accurate and accurate in their activities, following moral principles, they try not to break the rules, even when the rules seem to be an empty formality. Patients actively seek social approval, act so that the results of their activity are regarded by the social environment as positive.
5. Patients have an increased sensitivity of the autonomic nervous system to a threat, which may be due to a high level of anxiety, anxiety.
6. Patients with IHD were found to have decreased social interpersonal support, there was a decrease in values on the scales of sociability, frankness (openness) and extroversion.

7. Survey of patients with MI according to the method of TOBOL indicates that at this stage of the disease the hypochondriac, apathic, obsessive-phobic, egocentric and harmonious types of relations to the disease are least likely.
8. With an inclination to an anxiety-depressive type of reaction, the patients develop a neurasthenic and apathetic type of attitude towards the disease. In patients with insufficient socialization, aggressiveness, explosivity, there is a decrease in the perception of pain, which creates prerequisites for the formation of an ergophatic, euphoric-nosognosic type of attitude towards the disease.
9. Patients have an increased sensitivity of the autonomic nervous system to a threat, which may be due to a high level of anxiety, anxiety.
10. Patients with IHD showed a decrease in social interpersonal support, there is a decrease in values on the scales of sociability, frankness (openness) and extroversion.
11. Survey of patients with myocardial infarction according to the method of TOBOL shows that at this stage of the disease the hypochondriac, apathic, obsessive-phobic, egocentric and harmonious types of relations to the disease are least likely.
12. With an inclination to an anxiety-depressive type of response, the patients develop a neurasthenic and apathetic type of attitude towards the disease. In patients with insufficient socialization, aggressiveness, explosivity, there is a decrease in the perception of pain, which creates prerequisites for the formation of an ergophatic, euphoric-nosognosic type of attitude towards the disease.
13. In the examined group of patients with MI there is a tendency to select a small number of descriptors (definitions) to describe their pain syndrome, which may be due to the presence of pronounced alexithymic traits.
14. The study shows the relationship between the personal characteristics of patients with IHD and risk factors. So the presence of high personal anxiety in patients entails an increase in the intensity of smoking, a violation in the food system.
15. A negative correlation between smoking and eating disorders has been identified. In 47% of patients with ischemic heart disease, excess body weight was recorded.

In Patients with Arterial Hypertension:

1. Patients with AH are characterized by clear personality traits with a predominance of internal anxiety, self-doubt.
2. Patients with AH and concomitant obesity differed in profile from compared patients without obesity with more pronounced personality disorders. This allows us to assume the role of psychological disorders in these patients not only in the formation of hypertension, but also in the development of obesity.
3. The data obtained suggest that in the case of a more pronounced participation of genetic factors in the development of hypertension, there is a clear tendency to reduce the role of psychological factors as the disease progresses. Where the genetic factor clearly does not manifest itself, the hyper-adrenergic variant of the disease may predominate, which, even at the P degree of the AH, gives a significant rise in the scales of the neurotic triad MMP1.
4. There are gender differences in the psychological profile of hypertension, in particular, a more significant rise in the scale of the neurotic triad in women compared with men.

In Patients with Heart Failure:

1. Cardiac insufficiency is reflected in almost all spheres of human life, reducing the quality of life of patients. The zones of the least resistance in social areas, which require strengthening compensatory opportunities for all patients, are material dissatisfaction.
2. The majority of the examined patients (67%) find a discrepancy between the type of activity (profession) and their internal, "innate" properties, which contribute to the formation of neuropsychic deep stress.
3. The results of socio-psychological research confirm the connection between the experiences

of crisis situations and the manifestation of the disease. The most dangerous in terms of "expression" of the disease is the period of the greatest burden on the adaptation-compensatory system.

4. Psychological disadaptation in patients with heart failure is most often manifested by emotional disorders in the form of anxiety and mood reduction, as well as their combination.

5. The main options for socio-psychological disadaptation of patients with heart failure are: anxiety-depressive, hypochondriac, affective-rigid, and hysteroid. All these variants of psychosomatic disadaptation were formed long before the debut of the disease and play a certain role in adaptation-compensatory processes.

6. At the stages of the development of the disease, signs of socio-psychological maladaptation are more pronounced in relation to chronic stages. In patients with severe variants of the course of the disease, the deviating features of the personality are leveled and the structure of relationships is formed in the likeness of a group of healthy individuals.

7. In the phase of remission of diseases, there is a decrease in the severity of signs of socio-psychological maladjustment in comparison with exacerbation. During the period of exacerbation, there is a sharpening of the dominant personality traits and a return to the primary representative system (the process of re-adaptation).

8. Analysis of the results of the study of personality characteristics of the examined patients testifies to the absence of a single specific profile for nosological forms.

9. The results of the study made it possible to single out a single psychosomatic type of personality - discrete, having similar features to the alexithymic type.

10. The disease develops on the basis of genetic prerequisites, which perform a "predisposing" function.

11. The dynamics of the development of the disease has a stage of latent, latent disease (pre-illness), the evaluation of this condition is carried out by excessive emotional tension of the donor-level level, which has a pronounced vegetative-somatic equivalent.

12. Variants of the development of the disease depend on the primary representative system of the patient. Proceeding from this criterion, the following are distinguished: behavioral, emotional and cognitive variants of the development of the disease.

The carried out analysis of the quality of life revealed significant changes in the scales of both the general condition and the self-assessment of mental health in patients with IHD.

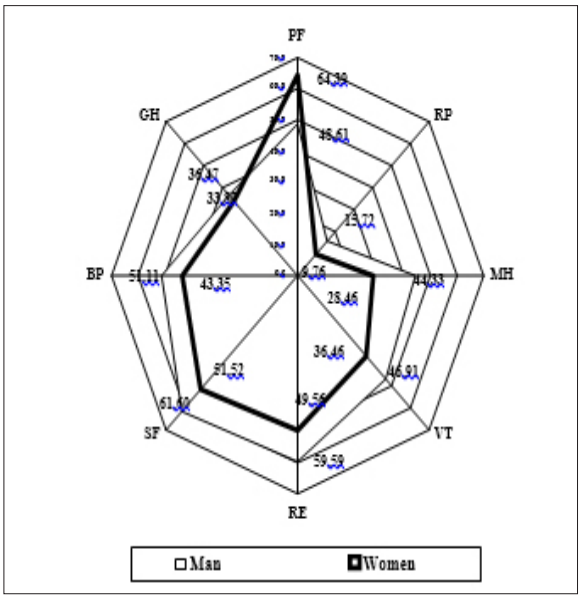

Figure 1. *Characteristics of the quality of patients life with IHD according to the SF-36 scale*

Note: General Health (GH) - general health; Physical Functioning (PF) - physical functioning; Role-Physical (RP) - the effect of the physical state on the role of functioning (work, doing everyday activities); Role-Emotional (RE) - the influence of the emotional state on role functioning; Social Functioning (SF) - social functioning; Bodily Pain (BP) - the intensity of pain; Vitality (VT) - vitality; Mental Health (MH) is a self-assessment of mental health.

Thus, the internal picture of the disease and its consequences determine a rather low quality of life. Comparing the clinical and psychological status of patients in clinical practice, it is necessary to revise the model of rendering assistance to cardiac patients,

which includes the whole complex of measures aimed not only at eliminating the symptoms of IHD and AH, but also taking into account the measures aimed at the cause of the disease at the earliest stages of atherosclerosis development. The definition of the quality of life allows for a more complete assessment of the general condition of patients, and its use in dynamics makes it possible to judge the results of rehabilitation and the degree of disadaptation.

Disclosures

All authors have not disclosed potential conflicts of interest regarding the content of this paper. The research was made in the frame of the work plan of Post Diploma Education and Polyclinic Therapy of NovSU and budget financing of city treatment and prevention institutions.

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