



THE QUALITY OF LIFE OF PATIENTS WITH CIRRHOSIS OF THE LIVER DEPENDING ON THE TONE OF THE AUTONOMIC NERVOUS SYSTEM

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Abstract

Currently, much attention is paid in medicine to the study of the quality of life (QOL) of patients. Being investigated the relationship between QOL and the course of the disease, the characteristics of the patient's personality. The presented study involved 139 patients with cirrhosis of the liver (CP). With the help of questionnaires independently filled out by patients, QOL was assessed depending on the tone of the autonomic nervous system. As a result of observation, it was found that vegetative imbalance in patients with cirrhosis of the liver with a predominance of parasympathetic influences worsens QOL indicators in the areas of energy, pain and emotional reactions.

Keywords: cirrhosis of the liver, quality of life, autonomic tone of the nervous system.

Introduction

In medical practice, the negative impact of the symptoms of cirrhosis of the liver (CP) on the patient is often underestimated, since only the frequency and severity of symptoms are analyzed, and for the patient, the limitations that the disease imposes on him may be crucial. As a result, in recent years, generally accepted approaches and methods of observation of patients with various diseases have been supplemented with a new research methodology, which consists in assessing the quality of life (QOL) of patients. Quality of life of patients – integral a characteristic that includes physical, mental, emotional and social health, based on subjective perception. According to the WHO definition, "health is the complete physical, social and psychological well-being of a person," and not just the absence of a disease. Due to the fact that in recent decades there has been a tendency to increase the life expectancy of patients with cirrhosis of the liver, improving their quality of life has become one of the main tasks of clinicians.

Publications devoted to this issue, which are of an overview nature, recommend using to assess the quality of life of gastroenterological patients, a combination of general





and special questionnaires or general questionnaires and scales reflecting the features of the clinical course of a certain nosological form. Studies are being conducted on the effect on the quality of life of patients with CP of the severity of hepatic encephalopathy, etiology, stage of the disease, psychological characteristics of personality.

In many studies, deterioration has been shown QOL in patients with chronic liver diseases, but the factors affecting it are not known. There were no data on the influence of the autonomic nervous system on the quality of life of patients with cirrhosis of the liver.

The aim of the study was to assess the quality of life in chronic liver diseases and the effect of the tone of the autonomic nervous system in patients with cirrhosis of the liver on QOL.

Material and Methods

283 people were examined. The group of patients with CP of various etiologies consisted of 139 people (average age (49.8 ± 11.2) years): viral - 36 (26%), alcoholic – 68 (49%), combined – 35 (25%) and Child–Pugh severity: class A – 50(36.0%), Class B – 44 (31.6%), Class C – 45 (32.4%); of these, 68 were men (48.9%) and 71 were women (51.1%). 104 people were included in the group of chronic hepatitis (HCG) (average age (36.2 ± 12.9) years), including viral – 27 (26%), alcoholic – 51 (49%) and combined – 26 (25%) etiology, of which 54 (52%) men and 50 (48%) women. The control group included 40 healthy people, comparable in gender and age.

All patients from the group of patients with cirrhosis of the liver were divided into subgroups depending on the tone of the autonomic nervous system: 1st - patients with CP with a predominance of parasympathetic vegetative tone (70 people; 50.4%) and 2nd – patients with cirrhosis of the liver with a predominance of sympathetic vegetative tone (69 people; 49.6%). In chronic viral hepatitis, the predominance of parasympathetic vegetative tone was noted in 52% of cases (54 people), sympathetic vegetative tone - in 44.2% (46 people), hypertension was observed only in 3.8% of cases (4 people). In healthy subjects, eitonía was detected in 15% of cases (6people), parasympathetic tone prevailed in 14 people (35%) and sympathetic tone – in 20 people (50%).

The diagnosis was made on the basis of anamnestic data, the results of an objective study, general clinical and biochemical indicators characterizing the functional state of the liver, ultrasound examination of the abdominal organs, esophagogastroduodenoscopy, determination of serological markers of viral hepatitis by IFA, the replicative phase of virus development by reverse transcription –





polymerase chain reaction. In a number of cases, a pathomorphological study was carried out liver biopsies with determination of the histological activity index of hepatitis and the stage of liver fibrosis.

The study of the autonomic nervous system (ANS) was carried out to determine the initial vegetative tone by calculating the vegetative index of Kerdo (VIC), index of minute blood volume (AND MO), minute blood volume (IOC). The calculation was carried out according to the formulas proposed by A.M. Vane. Taking into account all indicators (VIC, IMMO, MOG), a conclusion was made about the predominance of sympathetic (sympathicotonia), parasympathetic (vagotonia) influences or about relative vegetative equilibrium (eitonía).

To study QOL, a medical and social questionnaire (MSA) of the Cardiology Research Center (KNC) of the Russian Academy of Medical Sciences, modified by Y.N. Rutgizer, was used. It is aimed at assessing the patient's attitude to life changes related to the disease, in which, in accordance with the specifics of gastroenterological patients, an additional 11th school is included – the need to follow a diet, limit the intake of certain foods. Based on the results of filling out the questionnaire, two integral indicators were calculated: the index of the selected scales (IVS) - the sum of the scales with The positive response is also the quality of life index (QIQ) – the algebraic sum of the points scored. Taking into account subjective disorders (pain, gastric and intestinal dyspeptic phenomena, stool disorders, asthenic complaints) and the frequency of exacerbations, the severity index of the disease (and SO on) was calculated.

Additionally, to assess the quality of life was used "Nottingham Health Profile", which allows you to evaluate six areas of feeling –pain, physical activity, sleep, emotional reactions, energy, social isolation (part 1) and seven areas of life – work, housework, relationships with people, personal life, sex, hobbies, vacation (part 2). Part 1 provides for a quantitative characterization of QL indicators, which is a weighted value: an amount equal to 100 corresponds to the worst level of QL according to this parameter. In part 2, a qualitative assessment of the indicators, the number of positive and negative responses was carried out.

Results and Discussion

The factors that worsen the quality of life of patients with CP were judged by the number of scales they selected in the questionnaire "Quality of Life" of the KNC RAMS. When analyzing the quality of life indicators, the results were obtained indicating a significant ($p < 0.005$) decrease in parameters on all scales of the QL questionnaire in patients with HCG and CP of various etiologies in contrast to the examined control group. Patients with CP most often (in 80-90% of cases) they were



concerned about the need for long-term treatment, taking medications and limiting their work activities. In 60-70% of cases patients suffering from CP chose schools concerning the need to systematically follow a diet, limit themselves in physical activity and mental work, as well as in leisure activities, contact with relatives and sexual life. Less often, in 40-50% of cases, patients with CP of various etiologies indicated that a decrease in QOL caused them to be demoted and related reduced wages. And only one scale – the prohibition of smoking in connection with the disease – did not cause a negative assessment, most of the examined patients indicated that they were happy about it, or reacted it doesn't matter. Less than 30% of patients with CP were worried about this. In patients with cirrhosis of the liver, there were no significant differences in QOL scales depending on the etiology of the disease.

According to the results of filling out the QOL questionnaire of the subjects in the control group, comparison groups and CP of various etiologies were calculated integral indicators of IV, ID, IC. These indicators of quality of life with CP were statistically significantly different from those in the control and comparison groups. According to the results obtained, in patients with CP, the IQ was equal to -11.0; -15.0 : -7.0; IVS 1.0; 0 : 3.0, which indicates a marked decrease in the quality of life in this pathology. Also, high rates of TB (9.0; 6.0: 11.0) were observed with CPU. Thus, cirrhosis of the liver worsens the quality of life of patients. There were no significant differences in the indicators of IVF and QOL in patients with CP of various etiologies. Only ITB in patients with viral cirrhosis is significantly higher ($p = 0.01$), which indicates a more severe course of the disease.

Studying quality of life indicators using the "Nottingham Health Profile" (Part 1 questionnaire) it was found that the health status of patients with both HCG and CP of various etiologies it worsened the quantitative characteristics of all six parameters of QOL in the main spheres of human activity. In patients with hepatitis and cirrhosis, to a greater extent, the disease caused disturbances in the field of sleep, energy and emotional reactions. Less often, the causes of QOL deterioration were pain, decreased physical activity and social isolation. Indicators for all of the above areas of feeling were statistically significantly higher in patients with CP, which is naturally, given the more severe course of the disease. Depending on the etiology of the CPU, there are significant differences with a tendency to decrease energy ($p = 0.01$) and increased pain ($p = 0.04$) were observed in patients with viral cirrhosis.

Examining the quality of life indicators of the "Nottingham Health Profile" (part 2 of the questionnaire), the influence of the disease on the main aspects of the daily life of patients was established. In 70-85% of cases, the influence of the state of health of patients with HC and CP on labor activity, participation in public life, full rest and





sexual life was noted; in 50-60% of cases - on household management, love activities and family relationships. Depending on the etiology of CP, the effect of the disease in patients with alcoholic CP was significantly ($p < 0.05$) noted for work, and in patients with viral CP on family relationships.

The influence of the autonomic tone of the nervous system on the quality of life of patients with cirrhosis of the liver of various etiologies and severity was studied. There were no significant differences in the influence of parasympathetic and sympathetic tone of the nervous system on quality of life indicators, with the exception of the parameter "restriction of physical education", to which a negative attitude was mainly in patients with a predominance of sympathetic tone ($p = 0.006$). However, when studying the main integral indicators of this test (ICJ, IVS, ITB), it was statistically significant ($p = 0.035$) that decreased heart rate in the CP group with a predominance of parasympathetic tone. When studying the quality of life indicators using the "Nottingham Health Profile" (part 1 of the questionnaire), it was found that the health status of patients with CP of various etiologies with a predominance of parasympathetic tone worsened the characteristics of three parameters of QOL in the main areas human vital activity: energy, pain, emotional reactions. When the predominance of sympathetic tone affects the sphere of sleep more. There were no significant differences in the areas of social isolation and physical activity depending on the vegetative tone of patients with CP.

In the study of groups of patients with parasympathetic and sympathetic tone of the autonomic nervous system by gender, the following changes were revealed. Women in both the sympathetic tone group and the parasympathetic tone group evaluate their quality of life significantly worse in the main areas. Higher rates were noted in women in the group with a predominance of parasympathetic tone. Thus, in women suffering from cirrhosis of the liver of various etiologies and severity, the predominance of parasympathetic tone of the ANS worsens the quality of life. At there were no statistically significant differences in the indicators of QOL in men depending on the vegetative tone.

Studying quality of life indicators using the "Nottingham Health Profile" (part 2 questionnaire), it was found that for patients with CP with a predominance of parasympathetic and sympathetic tone of the nervous system, the general pattern characteristic of patients with CP persists. More often, patients indicated that their state of health had an impact on work, social life and full rest, less often on sexual life. Patients with a predominance of sympathetic tone less often they noted that their health condition was reflected at work, social, home, sexual life, favorite activities and full rest.





Conclusions

1. The quality of life in patients with cirrhosis of the liver, assessed by integral indicators, is lower than in chronic hepatitis, regardless of their etiology.
2. The quality of life in patients with cirrhosis of the liver decreases with the predominance of parasympathetic tone of the nervous system in the areas of energy, pain, emotional reactions.
3. A decrease in the parameters of quality of life correlates with the gender of patients with cirrhosis of the liver. Women have a worse assessment of their quality of life in the main spheres of life. At in women with cirrhosis of the liver, in whom parasympathetic tone prevails, the lowest quality of life indicators.
4. In men with cirrhosis of the liver, there were no differences in quality of life indicators depending on vegetative tone.

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