FATTY HEPATOSIS IS A GLOBAL EPIDEMIC PROBLEM IN THE MEDICAL PRACTICE

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Abstract

This article presents the results of the use of carnitine orotate as a method of treating fatty liver and non-alcoholic fatty liver disease, which shows the effectiveness of this drug in restoring hepatic syndromes and improving clinical data.

Keywords: fatty hepatosis, non-alcoholic fatty liver disease, carnitine orotate, biochemical blood parameters.

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Actuality

Fatty hepatosis or non-alcoholic fatty liver disease (hepatic steatosis, fatty infiltration, fatty degeneration of the liver) is a condition in which more than 5% of the mass of the liver is fat, mainly triglycerides. If the fat content exceeds 10% of the organ weight, then more than 50% of the liver cells contain fat and fat accumulations are distributed throughout the liver tissue[1,2].

Fatty liver disease(FLD), or fatty hepatosis, is the most common liver disease in our time around the world, in almost the vast majority of people over 40 years old, and recently a fairly common disease of young people and not only overweight, which is often found recently in the practice of a therapist [5-8].The problems of injuries of various etiologies do not cease to be relevant. There are three types of disease: alcoholic fatty liver disease (AFLD), non-alcoholic fatty liver disease (NAFLD), and drug-induced hepatitis, which often coexist.

In recent years, an increase in the incidence of NAFLDhas been observed. According to morphological studies, FLD is an excessive accumulation of triglycerides in the liver, which is accompanied by the activation of free radical oxidation processes, damage to cell membranes and other hepatocyte organelles , the onset of an inflammatory process, and stimulation of fibrosis up to liver cirrhosis.

Obesity, diabetes mellitus,dyslipidemia, rapid weight loss, lack of protein in the diet, congenital defects in β-oxidation of fatty acids, deficiency of α- antitrypsin , and some other factors are considered to be the causes of FLD. This pathology canbe both an independent disease and a manifestation of other diseases and thereforeItis not the result of bad behavior, wrong lifestyle, including nutrition and physical activity [6-9]. Fatty liver disease is a very dangerous disease that requires treatment. However, unlike many other liver diseases, FLD is difficult to treat, as hepatologists do not have a single standard of drug treatment for this pathology.

Many drugs that protect the liver from damage, the so-called hepatoprotectors, are of natural origin. But only a few of them also have therapeutic efficacy. An example of just such a drug of natural origin, which has an anti-inflammatory effect, iscarnitine orotate. Due to the wide spectrum of action on the body (antioxidant properties, the effect on the metabolism of fats, proteins, carbohydrates, the nitric oxide system), carnitine orotate has found wide application in hepatological practice in the treatment of gallbladder diseases, chronic hepatitis of various etiologies, especially in fatty hepatosis. Carnitine orotate improves the clinical condition of the patient, reduces the severity of steatosis and necrosis of hepatocytes, suppresses inflammation and the development of fibrosis, and also promotes cell regeneration [10].

To date, one of the most difficult issues in gastroenterological practice, in particular in hepatology, is the effective treatment of FLD. First of all, this concerns the most severe prognostic steatohepatitis - the outcome of which is very often an irreversible process - cirrhosis of the liver. The level of morbidity and mortality is constantly growing, as mainly young, able-bodied people are ill. In the treatment of steatohepatitis, antioxidants and metabolic regulators are used as pathogenetic agents along with hepatoprotectors. Given the biological properties of carnitine orotate, it has become widely used in this category of patients.

NAFLD is becoming more and more socially important, which is associated with a high incidence rate, mainly among young people of working age, a significant percentage of complications and deaths, and not always effective treatment. As part of the complex therapy of this pathology, carnitine orotate and carnitinealso finds reasonable use.

The purpose of this study was to evaluate the effectiveness of the use of carnitine orotate **(Godex , " Celltrion Pharm . Inc., Korea)** in patients with non-alcoholic fatty liver disease

1. Materials and research methods

Under our supervision there were 86 outpatients with non-alcoholic fatty liver disease (NAFLD), who applied to the consultative polyclinic of the multidisciplinary clinic of the Tashkent Medical Academy and the medical center “Akfamedline” and were observed for 2 months. All patients were aged 25 to 50 years (mean age 37.5 ± 12.5 years), including 46 women and 40 men. From the anamnesis, it was established that clinical manifestations bothered patients from 2 to 5 years, on average 1.5±1.8 years. The diagnosis was verified on the basis of clinical history, general clinical and laboratory studies, including bilirubin levels, aspartate aminotransferase and alanine aminotransferase activity , alkaline phosphatase, thymol test, GGT, triglycerides. All patients underwent ultrasound examination of the abdominal organs and sonoelastography of the liver, as well as other conventional instrumental methods. The clinical picture in the examined patients was dominated by fatigue, weakness, decreased performance, sleep disturbance,

headache, mood lability, heaviness and periodic aching, dull pain in the right hypochondrium, decreased appetite, belching, poor tolerance of fatty and fried foods, bitterness in the mouth. in the morning, periodically - nausea. Thus, 61 (90%) patients had dyspeptic and abdominal pain syndromes; 69 (80%) patients had astheno - vegetative syndrome, which was manifested by psycho-emotional instability, insomnia, headache, cardialgia . In 20 (24%) of the examined, mainly with CHB, hemorrhagic syndrome occurred in the form of periodic nosebleeds. In 67 (78%) patients, cholestatic syndrome was noted, manifested by icterus of the soft palate, skin and mucous membranes, scratching, as well as palmar erythema, "crimson" tongue and spider veins, increased concentration.

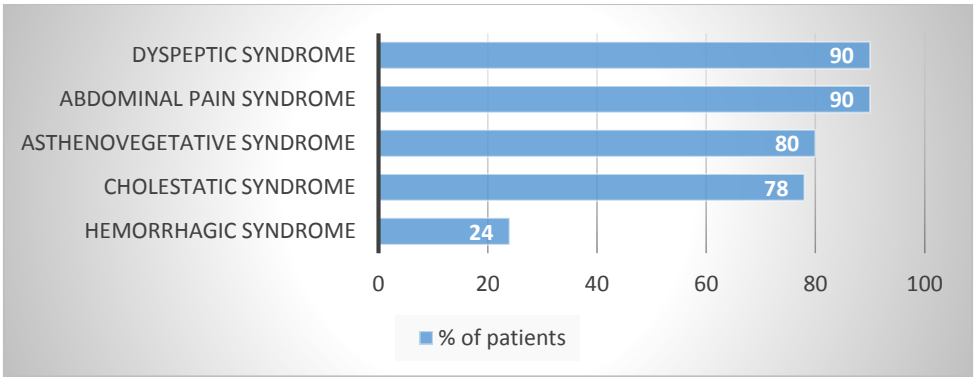


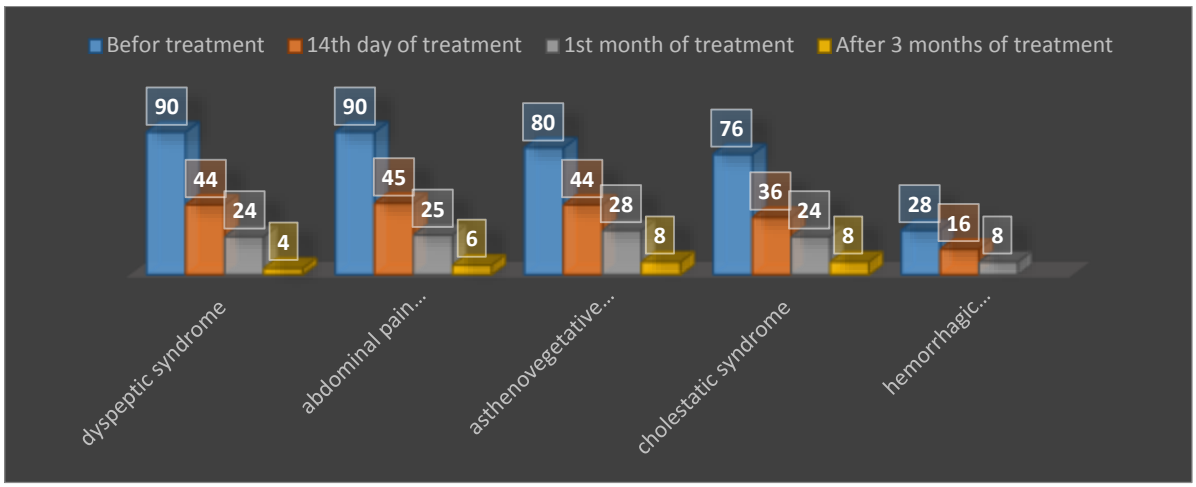
Fig.1. The main clinical syndromes in the examined patients (n= 86).

The patients were divided into 2 groups of 43 people: the 1st - the main group and the 2nd - the comparison group. All patients received standard basic therapy: intravenous administration of a complex of vitamins in a 5% glucose solution, enzyme therapy , lactulose, etc. The effect of hepatotoxic substances on patients was completely excluded. In addition to standard therapy, patients of the 1st group received **a capsule of Godex inside -** 2 capsules 2 times a day for 2 months after a meal.

Statistical data processing was carried out using the MS Excel application . To assess the reliability of the results, Student's t-test was used. Changes were considered significant at $P < 0.05$.

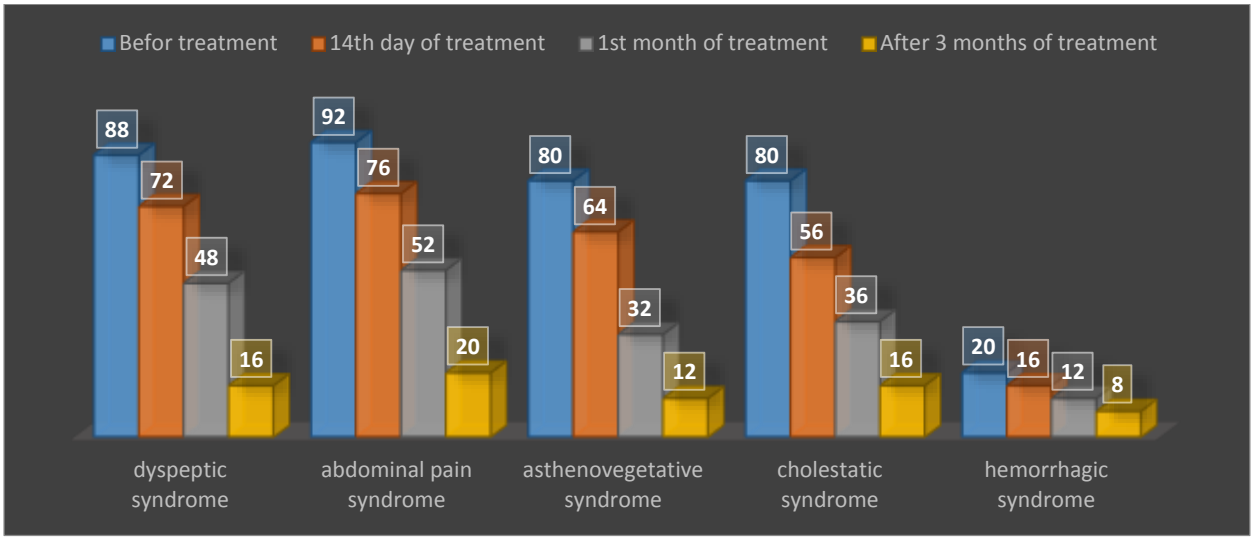
2. Results of the study and their discussion

The analysis of the data obtained showed that during the treatment **with Godex**in patients of the 1st group, already on the 10-14th day, the abdominal pain syndrome decreased in 21 (50%), dyspeptic in 23 (52.2%), asthenovegetative syndrome - in 19 (45%), cases, hemorrhagic - in 18 (42.9%) patients. 1 month after the start of therapy, the functional state of the liver improved even more. Clinically, there was a significant improvement in the general condition: weakness decreased in patients, sleep improved, appetite recovered, heaviness in the right hypochondrium, nausea and bitterness in the mouth disappeared. By the end of the course of gradual therapy with Godeks, the clinical condition of most patients returned to normal - dyspepsia and pain in the right hypochondrium no longer bothered them, they significantly expanded the diet **(Figure 2).**



Rice. 2. Dynamics of clinical manifestations in subjects treated with Godex(1st group of patients: n = 43) .

In patients of the 2nd group, against the background of standard therapy, all clinical manifestations of the syndromes also decreased over the specified period of time, but to a much lesser extent than in patients of the 1st group (Figure 3).



Rice. Fig. 3. Dynamics of clinical syndromes in patients with CHB and CAH who received standard therapy (2nd group of patients: n=25).

It should be noted that the biochemical study revealed Rice. 3. Dynamics of clinical manifestations in the examined, the 2nd group of patients (n =43) . The dynamics of changes in the functional parameters of the liver (bilirubin, alkaline phosphatase, ALT, ACT, GGT) in the vast majority of patients treated with Godex (37 (88%)), \]

after a 2-month course of treatment, while in patients of the control group for this period time, these figures remained above normal values (table 1) . Tolerability of oral therapy with Godexwas good in most patients. Side effects were observed in 4 (8%) patients treated with Gdex in the form of skin rashes, however, their severity did not require discontinuation of treatment with the drug.

Table 1 Dynamics of changes in biochemical parameters in the examined

Index	Groups	Before treatment	After 1 month of treatment	2 months after treatment
Bilirubin, mmol/l	1st group	30.5±1.8	21.6 ± 1.9*	**18.2 ± 1.5***
	2nd group	29.8±1.5	26.1 ± 1.8*	**24.5 ± 1.3***
Alkaline phosphatase, me /l	1st group	145.2±5.1	126.5 ± 5.2*	**103.6 ± 4.9***
	2nd group	144.8 ± 4.8	136.4 ± 5.0*	**13 1.7 ± 4.6***
ALT, mkat / l	1st group	1.32±0.05	0.98 ± 0.04*	**0.45 ± 0.08***
	2nd group	1.31 ± 0.08	1.19 ± 0.08*	**0.91 ± 0.06***
AST, mkat / l	1st group	1.24±0.06	0.91 ± 0.07*	**0.42 ± 0.05***
	2nd group	1.25±0.07	1.16 ± 0.09*	**0.89 ± 0.04***
GGT	1st group	99.1±0.5	65.3 ± 0.6**	**51.4 ± 0.3***
	2nd group	**99.2±0.6**	**86.9±0.5***	**68.2±0.8***

Note: * - reliability of indicators in relation to the initial data P <0.05 ;

3. Conclusions

1. The study showed the positive effect of Godex(carnitine orotate and carnitine) in patients with non-alcoholic fatty liver disease as part of the complex treatment of these diseases.
2. 2-month therapy with Godexcontributed to the regression of clinical manifestations and the normalization of biochemical blood parameters in the vast majority of patients.
3. The high safety of the use of Godex was noted , which is confirmed by a small number of side effects.
4. The data obtained allow us to recommend the widespread use of Godexin patients with non-alcoholic fatty liver disease.

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