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ЕЖЕМЕСЯЧНЫЙ НАУЧНЫЙ ЖУРНАЛ

Медицинские новости Грузии

საქართველოს სამედიცინო სიახლენი

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გამოიცემა თბილისის სახელმწიფო სამედიცინო უნივერსიტეტთან
თანამშრომლობითა და მისი პატრონაჟით

ЕЖЕМЕСЯЧНЫЙ НАУЧНЫЙ ЖУРНАЛ

ТБИЛИСИ - НЬЮ-ЙОРК

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GMN: Медицинские новости Грузии - ежемесячный рецензируемый научный журнал, издаётся Редакционной коллегией и Международной академией наук, образования, искусств и естествознания (IASEIA) США с 1994 года на русском и английском языках в целях поддержки медицинской науки и улучшения здравоохранения. В журнале публикуются оригинальные научные статьи в области медицины, биологии и фармации, статьи обзорного характера, научные сообщения, новости медицины и здравоохранения.

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GMN: Georgian Medical News – საქართველოს სამედიცინო სიახლენი – არის ყოველთვიური სამეცნიერო სამედიცინო რეცენზირებადი ჟურნალი, გამოიცემა 1994 წლიდან, წარმოადგენს სარედაქციო კოლეგიისა და აშშ-ის მეცნიერების, განათლების, ინდუსტრიის, ხელოვნებისა და ბუნებისმეტყველების საერთაშორისო აკადემიის ერთობლივ გამოცემას. GMN-ში რუსულ და ინგლისურ ენებზე ქვეყნდება ექსპერიმენტული, თეორიული და პრაქტიკული ხასიათის ორიგინალური სამეცნიერო სტატიები მედიცინის, ბიოლოგიისა და ფარმაციის სფეროში, მიმოხილვითი ხასიათის სტატიები.

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CONTACT ADDRESS IN TBILISI

GMN Editorial Board
7 Asatiani Street, 3th Floor
Tbilisi, Georgia 0177

Phone: 995 (32) 254-24-91
995 (32) 222-54-18
995 (32) 253-70-58
Fax: 995 (32) 253-70-58

CONTACT ADDRESS IN NEW YORK

NINITEX INTERNATIONAL, INC.
3 PINE DRIVE SOUTH
ROSLYN, NY 11576 U.S.A.

Phone: +1 (917) 327-7732

WEBSITE
www.geomednews.org

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1. Статья должна быть представлена в двух экземплярах, на русском или английском языках, напечатанная через **полтора интервала на одной стороне стандартного листа с шириной левого поля в три сантиметра**. Используемый компьютерный шрифт для текста на русском и английском языках - **Times New Roman** (**Кириллица**), для текста на грузинском языке следует использовать **AcadNusx.** Размер шрифта - **12**. К рукописи, напечатанной на компьютере, должен быть приложен CD со статьей.

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3. В статье должны быть освещены актуальность данного материала, методы и результаты исследования и их обсуждение.

При представлении в печать научных экспериментальных работ авторы должны указывать вид и количество экспериментальных животных, применявшиеся методы обезболивания и усыпления (в ходе острых опытов).

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2. Size of the article, including index and resume in English, Russian and Georgian languages must be at least 10 pages and not exceed the limit of 20 pages of typed or computer-printed text.

3. Submitted material must include a coverage of a topical subject, research methods, results, and review.

Authors of the scientific-research works must indicate the number of experimental biological species drawn in, list the employed methods of anesthetization and soporific means used during acute tests.

4. Articles must have a short (half page) abstract in English, Russian and Georgian (including the following sections: aim of study, material and methods, results and conclusions) and a list of key words.

5. Tables must be presented in an original typed or computer-printed form, instead of a photocopied version. **Numbers, totals, percentile data on the tables must coincide with those in the texts of the articles.** Tables and graphs must be headed.

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Accurately numbered subtitles for each illustration must be listed on a separate sheet of paper. In the subtitles for the microphotographs please indicate the ocular and objective lens magnification power, method of coloring or impregnation of the microscopic sections (preparations).

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In GMN style for each work cited in the text, a bibliographic reference is given, and this is located at the end of the article under the title "References". All references cited in the text must be listed. The list of references should be arranged alphabetically and then numbered. References are numbered in the text [numbers in square brackets] and in the reference list and numbers are repeated throughout the text as needed. The bibliographic description is given in the language of publication (citations in Georgian script are followed by Cyrillic and Latin).

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1. სტატია უნდა წარმოადგინოთ 2 ცალად, რუსულ ან ინგლისურ ენებზე,დაბეჭდილი სტანდარტული ფურცლის 1 გვერდზე, 3 სმ სიგანის მარცხენა ველისა და სტრიქონებს შორის 1,5 ინტერვალის დაცვით. გამოყენებული კომპიუტერული შრიფტი რუსულ და ინგლისურენოვან ტექსტებში - **Times New Roman (Кириллица)**, ხოლო ქართულენოვან ტექსტში საჭიროა გამოვიყენოთ **AcadNusx.** შრიფტის ზომა – 12. სტატიას თან უნდა ახლდეს CD სტატიით.

2. სტატიის მოცულობა არ უნდა შეადგენდეს 10 გვერდზე ნაკლებს და 20 გვერდზე მეტს ლიტერატურის სიის და რეზიუმეების (ინგლისურ, რუსულ და ქართულ ენებზე) ჩათვლით.

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6. ფოტოსურათები უნდა იყოს კონტრასტული; სურათები, ნახაზები, დიაგრამები - დასათაურებული, დანომრილი და სათანადო ადგილას ჩასმული. რენტგენოგრამების ფოტოასლები წარმოადგინეთ პოზიტიური გამოსახულებით **tiff** ფორმატში. მიკროფოტოსურათების წარწერებში საჭიროა მიუთითოთ ოკულარის ან ობიექტივის საშუალებით გადიდების ხარისხი, ანათალების შეღებვის ან იმპრეგნაციის მეთოდი და აღნიშნოთ სურათის ზედა და ქვედა ნაწილები.

7. სამამულო ავტორების გვარები სტატიაში აღინიშნება ინიციალების თანდართვით, უცხოურისა – უცხოური ტრანსკრიპციით.

8. სტატიას თან უნდა ახლდეს ავტორის მიერ გამოყენებული სამამულო და უცხოური შრომების ბიბლიოგრაფიული სია (ბოლო 5-8 წლის სიღრმით). ანბანური წყობით წარმოდგენილ ბიბლიოგრაფიულ სიაში მიუთითეთ ჯერ სამამულო, შემდეგ უცხოელი ავტორები (გვარი, ინიციალები, სტატიის სათაური, ჟურნალის დასახელება, გამოცემის ადგილი, წელი, ჟურნალის №, პირველი და ბოლო გვერდები). მონოგრაფიის შემთხვევაში მიუთითეთ გამოცემის წელი, ადგილი და გვერდების საერთო რაოდენობა. ტექსტში კვადრატულ ფჩხილებში უნდა მიუთითოთ ავტორის შესაბამისი N ლიტერატურის სიის მიხედვით. მიზანშეწონილია, რომ ციტირებული წყაროების უმეტესი ნაწილი იყოს 5-6 წლის სიღრმის.

9. სტატიას თან უნდა ახლდეს: ა) დაწესებულების ან სამეცნიერო ხელმძღვანელის წარდგინება, დამოწმებული ხელმოწერითა და ბეჭდით; ბ) დარგის სპეციალისტის დამოწმებული რეცენზია, რომელშიც მითითებული იქნება საკითხის აქტუალობა, მასალის საკმაობა, მეთოდის სანდოობა, შედეგების სამეცნიერო-პრაქტიკული მნიშვნელობა.

10. სტატიის ბოლოს საჭიროა ყველა ავტორის ხელმოწერა, რომელთა რაოდენობა არ უნდა აღემატებოდეს 5-ს.

11. რედაქცია იტოვებს უფლებას შეასწოროს სტატია. ტექსტზე მუშაობა და შეჯერება ხდება საავტორო ორიგინალის მიხედვით.

12. დაუშვებელია რედაქციაში ისეთი სტატიის წარდგენა, რომელიც დასაბეჭდად წარდგენილი იყო სხვა რედაქციაში ან გამოქვეყნებული იყო სხვა გამოცემებში.

აღნიშნული წესების დარღვევის შემთხვევაში სტატიები არ განიხილება.

Содержание:

RESULTS OF CORRECTION OF THE HEPATIC STEATOSIS ON THE BACKGROUND OF HYPERTENSION AND OVERWEIGHT WITH HELP OF ESSENTIAL PHOSPHOLIPID COMPLEX

Babak O., Bashkirova A.

Kharkiv National Medical University, Ukraine

Non-alcoholic fatty liver disease (NAFLD) is the most common liver disorder globally. The prevalence is 25% worldwide but is widely distributed in different population and regions. The highest rates are reported from South America (31%) and the Middle East (32%), followed by Asia (27%), the USA (24%) and Europe (23%), whereas NAFLD is less common in Africa (14%) [9]. NAFLD commonly associated with related metabolic diseases, leading to cardiovascular events as its leading cause of death. Individuals with metabolic disorders have a higher risk of developing NAFLD, whilst NAFLD confers an increased risk of developing MS-related disorders [7]. The typical phenotype of a NAFLD patient is primarily an obese or overweight individual. The metabolic disorders include abdominal obesity, hypertension, dyslipidemia and insulin resistance (IR) and further increase the risk of cardiovascular disease (CVD), type 2 diabetes mellitus (T2DM) and chronic kidney disease (CKD) [2]. The scenario of a higher overall mortality due to cardiovascular events as compared with controls has made it a critical global issue [9].

One of the unfavourable factors contributing to the formation of cardiovascular risk in the NAFLD on the background of hypertension is the low level of high-density lipoproteins (HDL) cholesterol, in the metabolism of which activity of endothelial lipase (EL) plays a leading role. This process is controlled by micro-RNA [5]. EL is identified as a new member of the family of triglycerides and is very similar to lipoprotein lipase and hepatic lipase but it is a more sensitive marker of phospholipid hydrolysis. EL is the only lipase synthesized by endothelial cells. Data from laboratory studies have shown that EL can play a key role in modulating the metabolism of high-density lipoprotein (HDL) and promoting the metabolism of atherogenic apoB-containing lipoproteins [14]. An increase in the plasma concentration of EL is associated with an increase in triglycerides and the concentration of apolipoprotein B in plasma. These facts indicate that EL is one of the key regulatory enzymes of lipid metabolism [12].

The liver plays an important role in the formation of dyslipidaemia and is a target for lipid metabolism disorders, representing one of the pathogenetic stages of the formation of NAFLD, which dictates the search for ways of drug support for hepatocytes. Therefore, drugs that contain essential polyunsaturated fatty acids (PUFAs) can be recommended. The use of essential phospholipids (EPL) as sources of structural elements of cellular membranes is pathogenetically grounded and confirmed by numerous studies. The main active substance is 1,2-dilinoleoyl phosphatidylcholine, the synthesis of which by the human body is impossible. The presence of two essential fatty acids causes the advantage of this special form of phospholipids compared with endogenous [4]. Membrane stabilizing and hepatoprotective action of EFL is achieved by direct embedding of their molecules into the phospholipid structure of damaged hepatic cells, filling defects and restoring the barrier function of the lipid layer. Unsaturated fatty acids of phospholipids contribute to increased activity and fluidity of membranes, activation of phospholipid-dependent enzymes and transport proteins, reduce the density of phospholipid structures, normalize the permeability of membranes, which in turn contributes to the improvement of the detoxification and excretory potentials of the liver [8]. The main therapeutic effect of phospholipids depends on the content of the preparation of phosphatidylcholine. In addition, being a good emulsifier, phosphatidylcholine increases the bioavailability of the nutrients it introduces reduces the deposition of cholesterol in the liver, contributing to inhibiting of cholesterol acyltransferase by phospholipids. EPLs have antioxidant effects that can slow down collagen synthesis by increasing collagenase activity [4]. Decreased cholesterol levels in the blood and increased excretion of it with bile is associated with EPL's ability to compete with cholesterol absorption in the intestine, to reduce cholesterol in membranes and to improve its solubility in bile in combination with bile acids. The effectiveness of polyunsaturated phosphatidylcholine in patients with fatty liver disease of various genesis is due to its ability to induce hepatocyte triglyceride lipase, contributing to the release of fatty acids into the bloodstream. The specific nature of the EPL allows them to substitute phospholipids of blood lipoproteins or chylomicrons (varies up to 80%), very low and low density lipoprotein (up to 15%), but mainly high-density lipoproteins (80%) and, thus, they are transported with blood and lymph flow [8].

Doses and duration of EPL treatment are individual and depend on clinical and laboratory and instrumental parameters. And in view of the increase in the activity of lipoprotein lipase, which increases intravascular disintegration of chylomicrons and VLDL, improvement of the function of insulin receptors, as well as increased activity of lecithin-cholesterol acyltransferase (LCAT), take part in the esterification of cholesterol in the composition of HDL, it is pathogenetically justified the use of EPL in NAFLD, especially in combination with metabolic disorders [13]. In a randomized placebo-controlled, double-blind, 6-month study in patients with fatty liver infiltration in combination with type 2 diabetes, an improvement in the histological picture of the liver was observed in 46.7% of cases in patients receiving Essentiale at a dose of 1800 mg/day (2 capsules 3 times a day) [8]. Also, Russia's first large-scale multicentral study of use of Essentiale Forte N LIDER, performed in accordance with current international standards, has shown a high level of satisfaction with clinical effectiveness of therapy and a good safety profile of Essentiale Forte N when used at recommended doses (1800 mg per day) and regimen 2 capsules 3 times a day) up to 12 weeks of admission in the conditions of real practice [1].

The aim of the study was to investigate the effectiveness of essential phospholipids in complex therapy of patients with NAFLD and hypertension and overweight, taking into account the dynamics of results of laboratory and instrumental examinations and blood EL levels.

Material and methods. The work has been performed on the basis of the National Institute of Therapy named by L.T. Malaya of National Academy of Medical Sciences of Ukraine within the department's research work of the department of internal medicine №1 of Kharkiv National Medical University "Clinical significance of markers of inflammation and metabolic disorders in patients with NAFLD taking into account comorbidity".

The research was approved by the Ethics Commission of the Kharkiv National Medical University and conducted in accor-

dance with the principles of the Helsinki Declaration. All patients signed an informed consent to participate in the study.

52 patients with NAFLD on the background of hypertension and overweight have been examined. The diagnosis of NAFLD was established on the basis of criteria of the American Association for the Study of Liver Diseases [3] and the European Guidelines for Diagnosis and Treatment of NAFLD [10]. Diagnosis of hypertension was established according to the clinical guidelines for hypertension (2013) of the European Society of Hypertension (ESH) and the European Society of Cardiology (ESC) [10]. The control group consisted of 20 practically healthy individuals. All patients were divided with accordance of age and sex.

The exclusion criteria were: acute and chronic inflammatory processes in the period of exacerbation of any localization; age over 60 and under 45 (excluding the non-informative age for comorbidity of these pathologies [11]; obesity of the third degree and above; diffuse connective tissue diseases; oncological diseases; symptomatic hypertension; viral (HBV-, HCV-, HDV), toxic and medicated hepatitis; alcohol abuse (more than 30g of ethanol or 3.75 alcohol units per day for men and 20 g or 2.5 alcoholic units for women); diabetes mellitus type I; hypertension of III stage and above; anamnesis data for Wilson-Konovalov's disease, idiopathic hemochromatosis and congenital failure of α1-antitrypsin; coronary heart disease with postinfarction cardiosclerosis; heart failure of stage III; hypothyroidism and hyperthyroidism; refusal of the patient at any stage of the study.

The body mass index (BMI) was calculated for all patients. Measurement of blood pressure (BP) was performed according to the standard of auscultation method (office measurement) using a sphygmomanometer No. 31304500 (Erka, Chemnitz, Germany). The ultrasound of the abdominal cavity was performed by using ultrasound diagnostic systems with Doppler LOGIQ 5 (No. 1822SU6, 2003) and Vivid 3 (No. 6009, 2004).

With the purpose of excluding of an alcoholic genesis of NAFLD all patients underwent questioning for definition of alcohol units by the formula:

Alcohol units = amount (liters) × alcoholic strength (%)×0,789

Alcohol abuse was eliminated by less than 30 g of ethanol or 3.75 alcohol units per day for men (or 14 units per week) and 20 g or 2.5 alcohol units for women (or 8 units per week).

Glucose concentration in venous blood was determined by photometric method using an automatic biochemical analyzer - general purpose photometer "Humalyzer 2000", (metrology No. 18300 - 5397, Germany). To assess long-term carbohydrate metabolism compensation, the concentration of glycated haemoglobin (HbA1c) was determined using the kit "Reagent" (Ukraine) by reaction with thiobarbituric acid. The concentration of insulin was determined by ELISA using the DRG reagent kit (USA).

For the quantitative assessment of the severity of insulin resistance, the mathematical model HOMA-IR was used:

HOMA-IR = (fasting insulin (U / mL) x fasting glucose (mmol / L))/22,5.

If HOMA-IR was ≥ 2,77 it was considered as the presence of insulin resistance.

Indicators of lipid profile were investigated by the enzymatic method on the biochemical analyzer "Humaläyzer 2000" (metrology № 18300-53997, Germany) using reagents of the firm "Human" and "Cormay" (Germany).

For the liver steatosis identification, the NAFLD liver fat score was used according to the formula:

NAFLD liver fat score= - 2,89+1,18×metabolic syndrome (yes=1/no=0)+ 0,45×type 2 diabetes (yes=2/no=0)+0,15× fasting serum Insulin (mU/L)+ 0,04 × fasting serum AST(U/L) – 0,94 × AST/ALT.

The concentration of EL serum was determined by ELISA using kits of reagents «Aviscera Bioscience INC» (USA).

Patients were recommended to eat diet meals with reduced simple carbohydrates and fats and were prescribed treatment with essential phospholipids for 6 months at a dose of 2 capsules 3 times a day for 6 months. Correction of hypertension was carried out by clinical guidelines for hypertension (2013) of the European Society of Hypertension (ESH) and the European Society of Cardiology (ESC) [10]. Complete compliance till the end of the course of treatment was shown by 16 patients from the main group.

In order to monitor the implementation of dietary recommendations, a questionnaire was used in which patients, in which patients were questioned about the use of 15 main «forbidden» foods. The suggested answers included options of frequency of intake of products - every day; several times a week; several times a month; several times a year; never - that had a gradation of points from 4 to 0, respectively. The sum of points was evaluated as: 0-15 - coefficient 0: dietary recommendations were observed almost without breaks; 15-30 - coefficient 1: dietary recommendations were followed by rare breaks; 30-45 - coefficient 2: dietary recommendations were followed by frequent breaks; 45-60 - coefficient 3: dietary recommendations were practically not respected.

Statistical processing of the results of the study was conducted using Microsoft Exel and Statistica 7.0 programs using standard methods of virological statistics.

Results and their discussion. The results of the anthropometric examination and questionnaire before and after treatment are presented in Table 1.

As it can be seen from the data presented, a significant decrease in weight during the observation did not occur. At the same time, systolic and diastolic blood pressure indicators have significantly decreased, reflecting the patient's complacency

Table 1. Dynamics of clinical and laboratory parameters in patients with liver steatosis on the background of hypertension and overweight during dynamic observation and correction

Parameter	Before correction		After correction	
	Mean	SD	Mean	SD
BMI, kg/m^2	28,93	3,99	27,21	3,84
SBP, mm Hg	159,00	19,29	119,00*	8,49
DBP, mm Hg	98,00	10,82	84,06*	7,23
Diet	2,73	0,98	2,00*	0,51
Alcohol units	6,37	2,99	4,50*	2,13

** - The difference in parameters is statistically significant (p<0,05)*

Table 2. Dynamics of insulin-sensitivity and expressiveness of fatty liver disease in patients with liver steatosis ion the background of hypertension and overweight during dynamic observation and correction

Parameter	Before correction		After correction	
	Mean	SD	Mean	SD
Fasting insulin, mU/l	32,06	14,57	13,58*	4,53
ALT, U/L	45,25	20,93	38,51*	19,94
AST, U/L	35,37	24,86	27,30*	21,01
AST/ALT, U	0,80	0,49	0,78	0,49
NAFLD liver fat score	3,43	3,21	1,00*	1,61

** - The difference in parameters is statistically significant (p<0,05)*

Table 3. Dynamics of lipid parameters in patients with liver steatosis on the background of hypertension and overweight during dynamic observation and correction

Parameter	Before correction		After correction	
	Mean	SD	Mean	SD
Cholesterol, mmol/l	6,26	1,46	5,15	1,06
Triglycerides, mmol/l	1,73	0,79	1,48*	0,53
LDL, mmol/l	4,00	1,17	3,09	0,77
HDL, mmol/l	1,16	0,28	1,38	0,27
Endothelial lipase, ng / ml	13,18	3,17	9,47*	2,27

** - The difference in parameters is statistically significant (p<0,05)*

with BP control by using antihypertensive measures. Indirectly, this may be a marker of therapeutic compliance at all.

Patients were significantly more compliant to diet and reduced alcohol consumption.

So within 6 months, patients controlled their diet more carefully, consumed the EPL complex regularly and used blood pressure monitoring drugs.

As we hypothesized that essential phospholipids added to dietary treatment may lead to correction of the patient's lipid profile and improvement of liver steatosis, we examined lipid status, insulin concentration, and parameters related to NAFLD (Table 2).

Thus, dietary control of nutrition with the additional use of the complex of essential phospholipids leads to improvement of insulin sensitivity even without weight reduction (Fig. 1).

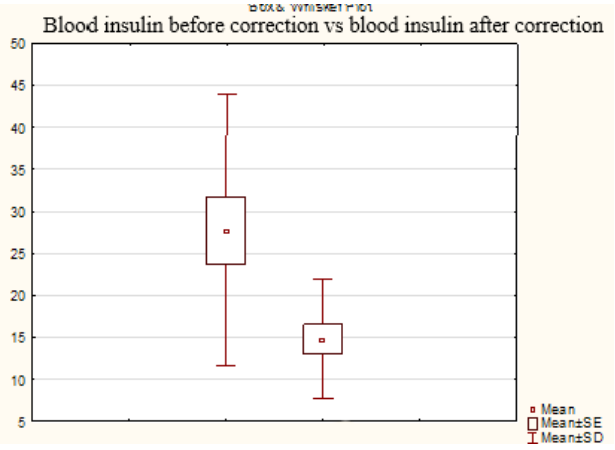

Fig. 1. Dynamics of concentration of fasting insulin in patients with liver steatosis in the background of hypertension and overweight during dynamic observation and correction

In the observed groups, the levels of liver transaminases significantly decreased, but reliable change in their ratios was not observed. However, the index of liver steatosis, which comprehensively reflects the dynamics of transaminases, insulin resistance, the presence of metabolic syndrome and diabetes, has significantly decreased. Consequently, the severity of NAFLD during the 6-month treatment period has become less severe.

The analysis of lipidogram parameters also showed some improvements in the form of decreasing of total cholesterol level, triglycerides level and increasing the high-density lipoprotein level (Table 3). However, the parameters of the lipidogram did not reach normal values, and HDL did not normalized to the protective level.

Thus, in spite of the positive dynamics, patients are at s are in the group of high metabolic risk according to mean values of assed parameters. So they require special attention especially due to the fact that they suffer from hypertension and in the aggregate of disorders they can be classified as high cardiovascular risk group. On the other hand, the level of EL has significantly decreased (Fig. 2).

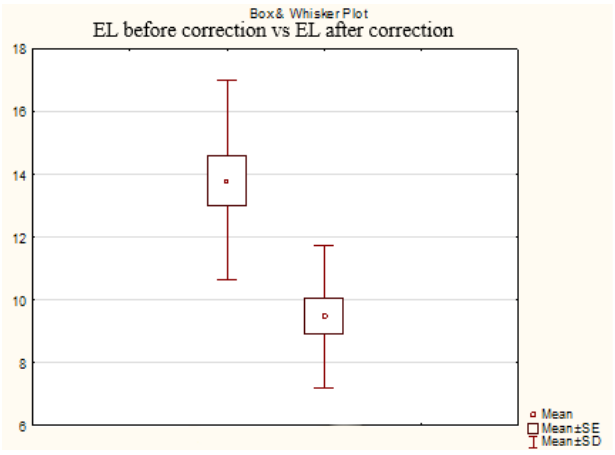

Fig. 2. Dynamics of EL concentration in patients with liver steatosis on the background of hypertension and overweight during dynamic observation and correction

Table 4. Dynamics of the correlation between EL and lipid-carbohydrates parameters, BMI and blood pressure in people with liver steatosis on the background of hypertension and overweight before and after correction

	EL before correction	EL after correction
Fasting insulin, mU/l	-0,08	0,13
Total cholesterol , mmol/l	0,38*	0,11
Triglycerides, mmol/l	0,02	0,57*
HDL, mmol/l	-0,04	-0,62 *
LDL, mmol/l	0,33*	-0,04
SBP	-0,10	-0,06
DBP	-0,21	-0,20
BMI	-0,16	0,14
NAFLD index	-0,06	0,32
Alcohol units	-0,02	0,29
Diet	-0,23	-0,04

** - The difference in parameters is statistically significant (p<0,05)*

Table 5. Results of Multiple Regression for liver steatosis in patients with hypertension and overweight after correction

	b*	t(9)	p-value
Intercept		-0,13423	0,896172
Fasting insulin, mU/l	0,975	7,911	0,000024
Triglycerides, mmol/l	0,606	3,518	0,006531
Total cholesterol, mmol/l	-0,445	-2,743	0,022733
HDL, mmol/l	-0,200	-1,552	0,154867
Endothelial lipase, ng/ml	-0,169	-1,130	0,287380

Due to the fact that EL plays a significant role in metabolism of defence HDL and we have observed the dynamics of both parameters, we have studied the dynamics of the correlation between the studied parameters before and after treatment (Table 4).

In patients with hypertension and steatosis of the liver on the background of insulin resistance endothelial lipase played a role of a participant in the metabolism of LDL before correction. Thus, it turns out that after correction, the correlation between the concentrations of endothelial lipase and HDL is restored. Moreover, the dynamics of changes in correlation is significant.

Multiple regression analysis shows a significant correlation between the severity of steatosis and the concentration of insulin, triglycerides and negative correlation with the level of total cholesterol after the correction (MR=0,95; F(5,9)-17,9; P<0,009). It should also be noted that the system consistently excluded anthropometric parameters, dietary regimen and alcohol consumption from the analysis, despite the significant changes in these parameters during treatment. At the same time, as indirect associates (partial correlations) HDL and EL were included to the model (Table 5).

Conclusions. Patients after the treatment have significantly lower blood pressure, but weight loss has not occurred. Reduced levels of total cholesterol, triglycerides, insulin levels, and increased HDL indicate reductions in insulin resistance and the restoration of normal pathogenetic functional relationships between lipid parameters. A decrease in the NAFLD's liver fat score and hepatic transaminases shows a decrease in NAFLD's severity over a 6-month course of treatment.

The increase in the serum endothelial lipase level is associated with the severity of steatosis and can be considered as an independent marker of cardiovascular risk, therefore, the treatment led to a decrease EL levels in blood. And changes in the lipid spectrum that took place had the most evident effect in dynamics of EL levels. Also, the correlation between the concentrations of EL and HDL is restored after correction.

Thus, the complex of essential phospholipids as an additional component for diet of patients with NAFLD on the background of hypertension and overweight showed high effectiveness and may be recommended for this comorbidity.

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SUMMARY

RESULTS OF CORRECTION OF THE HEPATIC STEATOSIS ON THE BACKGROUND OF HYPERTENSION AND OVERWEIGHT WITH HELP OF ESSENTIAL PHOSPHOLIPID COMPLEX

Babak O., Bashkirova A.

Kharkiv National Medical University, Ukraine

One of the unfavorable factors contributing to the formation of cardiovascular risk in non-alcoholic fatty liver disease (NAFLD) on the background of hypertension is the low level of HDL cholesterol, in the metabolism of which the activity of endothelial lipase (EL) plays a leading role. The liver plays an important role in the formation of dyslipidemia and is a target for lipid metabolism disorders, representing one of the pathogenetic stages of NAFLD formation, which dictates the search for ways of drug "support" of hepatocytes.

The aim of the research was to study the effectiveness of essential phospholipids in the complex therapy of patients with NAFLD, hypertension and overweight, taking into account the dynamics of laboratory and instrumental examinations and EL blood level.

52 patients with NAFLD on the background of hypertension and overweight have been examined. The control group consisted of 20 practically healthy people. All patients were divided with accordance of age and sex.

Dietary nutrition with reduction of simple carbohydrates and fats was recommended for patients and treatment with essential phospholipids for 6 months at a dose of 2 capsules 3 times a day was prescribed. 16 patients of the main group showed complete compliance till the end of the course of treatment. The concentration of EL was determined by the ELISA using the Aviscera Bioscience INC reagents kit (USA).

The complex of essential phospholipids as additional component for diet showed an effective decrease in the severity of hepatic steatosis in combination with the reduction of insulin resistance, as well as the restoration of normal pathogenetic functional links between HDL and endothelial lipase in patients with NAFLD on background of hypertension.

Thus essential phospholipids can be recommended to reduce CVD and comorbidity for all patient`s with these diseases, which was mentioned above, despite the range of steatosis.

Keywords: non-alcoholic fatty liver disease, hypertension, endothelial lipase, essential phospholipids.

РЕЗЮМЕ

РЕЗУЛЬТАТЫ КОРРЕКЦИИ СТЕАТОЗА ПЕЧЕНИ НА ФОНЕ ГИПЕРТОНИЧЕСКОЙ БОЛЕЗНИ И ИЗБЫТОЧНОЙ МАССЫ ТЕЛА С ПОМОЩЬЮ КОМПЛЕКСА ЭССЕНЦИАЛЬНЫХ ФОСФОЛИПИДОВ

Бабак О.Я., Башкирова А.Д.

Харьковский национальный медицинский университет, Украина

Одним из неблагоприятных факторов, способствующих формированию кардиоваскулярного риска при неалкогольной жировой болезни печени (НАЖБП) на фоне гипертонической болезни (ГБ), является низкий уровень холестерина ЛПВП, в метаболизме которого ведущую роль играет активность эндотелиальной липазы (ЭЛ). Печень выполняет значимую роль в формировании дислипидемии, являясь мишенью для нарушений липидного обмена и патогенетическим этапом формирования НАЖБП, что диктует поиск путей медикаментозной «поддержки» гепатоцитов.

Целью исследования было изучить эффективность эссенциальных фосфолипидов в составе комплексной терапии больных НАЖБП и ГБ с избыточной массой тела с учетом динамики лабораторно-инструментальных методов исследования и уровня ЭЛ крови.

Обследованы больные НАЖБП на фоне ГБ и избыточной массы тела (n=52). Группу контроля составили практически здоровые лица (n=20). Все больные были сопоставимы по полу и возрасту.

Пациентам было рекомендовано диетическое питание с ограничением потребления простых углеводов и жиров, назначено лечение эссенциальными фосфолипидами в течение 6 месяцев в дозе 2 капсулы 3 раза в сутки. Полную комплаентность к концу курса лечения проявили 16 пациентов основной группы. Концентрацию ЭЛ в сы-

воротке крови определяли иммуноферментным методом с использованием набора реактивов Aviscera Bioscience INC (США).

Дополнительное к диетическому питанию потребление комплекса эссенциальных фосфолипидов у пациентов с НАЖХП на фоне ГБ показало эффективное уменьшение выраженности стеатоза печени в сочетании с редукцией инсулинорезистентности, а также восстановлением нормальных патогенетических функциональных связей между ЛПВП и эндотелиальной липазой.

Таким образом, проведенная терапия эссенциальными фосфолипидами показала высокую эффективность при коморбидности НАЖБП с ГБ и избыточной массой тела и может быть рекомедована с целью уменьшения кардиоваскулярного риска вне зависимости от выраженности стеатоза печени у данной группы пациентов.

რეზიუმე

ღვიძლის სტეატოზის კორექციის შედეგები ესენციური ფოსფოლიპიდების გამოყენებით ჰიპერტონიული დაავადებისა და ჭარბი წონის მქონე პაციენტებში

ო. ბაბაკი, ა.ბაშკიროვა

ხარკოვის ეროვნული სამედიცინო უნივერსიტეტი, უკრაინა

კვლევის მიზანს წარმოადგენდა ესენციური ფოსფოლიპიდების ეფექტურობის შეფასება ღვიძლის არაალკოჰოლური ცხიმოვანი დაავადების კომპლექსურ მკურნალობაში ჰიპერტონიული დაავადების და სხეულის ჭარბი წონის ფონზე, ლაბორატორიულ–ინსტრუმენტული კვლევის მონაცემებისა და სისხლში ენდოთელური ლიპაზას დონის გათვალისწინებით.

გამოკვლევაში ჩართული იყო 52 პაციენტი ღვიძლის არაალკოჰოლური ცხიმოვანი დაავადებით, არტერიული ჰიპერტონიით და ჭარბი წონით. საკონტროლო ჯგუფი წარმოდგენილი იყო 20 პრაქტიკულად ჯანმრთელი ადამიანით. პაციენტები ჯგუფებში სქესისა და ასაკის მიხედვით განაწილებულნი იყვნენ თანაბრად.

კვლევაში მონაწილეებისთვის რეკომენდებული იყო დიეტური კვება მარტივი ნახშირწყლებისა და ცხიმების მოხმარების შემცირებით, დანიშნული იყო ესენციური ფოსფოლიპიდებით ექვსთვიანი მკურნალობა, დოზით 2 კაფსულა 3-ჯერ დღეში. სრული კომპლაენსი მკურნალობის კურსის ბოლოს გამოვლინდა ძირითადი ჯგუფის 16 პაციენტში. ენდოთელური ლიპაზას კონცენტრაცია სისხლის შრატში განისაზღვრებოდა იმუნოფერმენტული მეთოდით კომპანია Aviscera Bioscience INC რეაქტივების გამოყენებით.

ესენციური ფოსფოლიპიდების მიღებამ დიეტურ კვებასთან კომპლექსში ღვიძლის არაალკოჰოლური ცხიმოვანი დაავადების მქონე პაციენტებში არტერიული ჰიპერტონიის ფონზე ეფექტურად შეამცირა ღვიძლის სტეატოზის გამოხატვის ხარისხი, ასევე, გამოვლინდა ინსულინრეზისტენტობის რედუქცია, ნორმალური პათოგენეზური ფუნქციური კავშირის აღდგენა მაღალი სიმკვრივის ლიპოპროტეინებსა და ენდოთელურ ლიპაზას შორის.

ამრიგად, აღნიშნული დაავადებების მქონე პაციენტებში, ღვიძლის სტეატოზის ხარისხის მიუხედავად, კარდიოვასკულური რისკის და კომორბიდობის შესამცირებლად შესაძლებელია რეკომენდებულ იქნას მკურნალობა ესენციური ფოსფოლიპიდებით.

THE FORECAST OF LETHAL OUTCOME IN CHRONIC LEUKEMIA PATIENTS WITH PNEUMONIA

Pertseva T., Borysova I.

State Establishment "Dnipropetrovsk Medical Academy of the Ministry of Health of Ukraine", Dnipro, Ukraine

Many hematological diseases, including chronic leukemia (CL), have a significant improvement of the forecast in the last decades. For example, a complete remission can be achieved in 99% of patients with hairy cell leukemia [2]. Stem cells transplantation allows to improve the results of treatment in 1,5-2 times and provide patients' survival from 50 to 80% [3,4].

However, the main obstacle to modern intensive treatment that provides a long and full remission is infectious complications (IC) [11,12,14]. It is known that patients with oncohematological diseases have IC in almost 70% of cases [12]. Mortality from the IC takes second place after the tumor resistance [16]. The largest contribution to the mortality rate of the IC in patients with oncohematological diseases, especially with CL, makes the pneumonia mortality [13]. Moreover, the course of pneumonia in patients with oncohematological disease characterized by erased clinic and the rapid development of poor outcome [2,6]. According to scientific data, the mortality in such cases is quite high and it's about 28% [5]. The progressive increase in pneumonia poor outcome in patients with leukemia is determined even using modern antibiotic therapy (ABT). The mortality level in the intensive care units reaches 90% [3].

The forecast of pneumonia poor outcome in patients with CL determined by studying mortality predictors define the relevance of this study.

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The aim of the study - to create a mathematical model for forecasting of poor pneumonia outcome in patients with chronic leukemia in order to optimize treatment.