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Character and Frequency of the Syntropic Extrahepatic Lesions in Cirrhotic Patients with Hepatopulmonary Syndrome of Various Severity Degree

Introduction. In recent years worldwide and in Ukraine particularly the incidence of liver diseases is steadily increasing. According to the information provided by the World Health Organization, damage to the hepatobiliary system has been diagnosed in more than 2 billion people. Due to an unsatisfactory environmental situation, excessive alcohol consumption, uncontrolled use of a large number of drugs, as well as the involvement of various organs and systems in the pathological process, severe and fatal cases of liver cirrhosis (LC) are recorded more often [4, 5, 8].

Changes in systemic blood circulation caused by LC with portal hypertension lead to impaired blood flow in almost all organs, including the lungs, which provokes severe pathological changes, connected by a cause-and-effect relationship with the degree of pressure increase in the liver portal system [5, 8, 10]. As a result of these changes in the vascular bed of the lungs, hepatopulmonary syndrome (HPS) occurs, happening in 45.4 % of all lesions of the respiratory system and is an urgent problem of modern clinical medicine [6, 7, 9].

Practicing the most effective individualized appointment of complex treatment, it should be taken into consideration the involvement of various organs and systems to the pathological process in the cirrhotic patients; we defined such elements as syntropic lesions, meaning those, that have common etiological and/or pathogenetic mechanisms of occurrence [1, 2]. Despite the important, and sometimes decisive influence on the course of LC, such studies depending on the severity of HPS have not been conducted so far.

The aim of the study. To investigate the character and frequency of the syntropic extrahepatic lesions in the cirrhotic patients with hepatopulmonary syndrome (HPS) of various severity degree.

Materials and methods. After it was received the written consent to conduct a comprehensive examination in accordance with the principles of Helsinki Declaration of Human Rights, European Convention on Human Rights and Biomedicine and the relevant laws of Ukraine in a randomized way with the preliminary stratification by the presence of LC with HPS 93 patients [26 women (28.0 %) and 67 men (72.0 %) aged 27 to 67 years] which were treated in the Lviv Regional Hepatological Center during the period 2012-2015 were involved into the study. The diagnosis of LC was set in the accordance with the Order of the Ministry of Health of Ukraine N 1051 dated December 28, 2009 "On providing medical care to patients of the gastroenterological profile", Orders N 826 dated November 6, 2004, N 433 dated July 3, 2006, N 128 dated March 19, 2007, N 593 dated December 12, 2004, N 271 dated June 13, 2005, N 436 dated July 03, 2006, N 647 dated June 30, 2010, N 280 dated May 11, 2011, "Liver Cirrhosis" guideline 00215 dated February 19, 2018). HPS was identified according to the adapted clinical guideline "Pulmonary Hypertension" dated 2016. Also there were diagnosed the other syntropic [1-3] lesions of organs and systems (skin, its appendages, mucous membranes - dyschromia (jaundice), localized skin lesions (telangiectasia, "jellyfish head" and "crimson tongue"), systemic lesions of the skin and nails (itching, "lacquered nails"); condition of the bone and joint system - osteopenia, osteoporosis; arterial hypotension, cirrhotic cardiomyopathy (CCMP), heart rhythm disorders (sinus tachycardia, atrial fibrillation); hematopoiesis, leukocytosis, and coagulopathy; varicose veins of the esophagus (VVE), cirrhotic gastropathy (CG), varicose hemorrhoidal veins (VHV) and ureteral varices system - hepatorenal syndrome (HRS) of type I and II; central nervous system (CNS) - hepatic (cirrhotic) encephalopathy (HE)).

Diagnosis of HPS and degree of its severity were estimated according to the "Method of the Diagnosis of Hepatopulmonary Syndrome Severity Degree in the Cirrhotic Patients" (Patent N 112378 Ukraine, IPC A61B 5/0205 A61B 6/00 G 01 N 33/50) taking into account clinical signs and symptoms, indices of oxygen saturation of capillary blood in standing and lying positions, minute blood volume, indices of blood gas composition, results of spirometry, chest X-ray and computed tomography of the lungs.

Our proposal of diagnosing the severity of LC with the introduction into the protocol of simultaneous determination of qualitative and quantitative indices make it possible the optimization of the respiratory system lesions diagnosis in patients with LC. However, the verification of HPS severity degree needs the summary of points to be calculated. In order to optimize this time consuming protocol, we elaborated a computer program "Hepatopulmonary syndrome", which involves the selection of indices with the calculation of corresponding points and determination of the HPS severity degree in automatic manner.

According to this principle, all patients were stratified into three groups: 28 patients (30.1 %) were included to

the first group (I severity degree HPS), 44 (47.3 % patients) to the second group (II severity degree HPS), and 21 (22.6 %) in the third (III severity degree HPS).

The research was carried out in two steps. The first step included estimation of the nature and frequency of affected body systems in patients with LC, associated with HPS of various severity degrees. The second step included estimation of the nature and frequency of syntropic syndromes and nosological units in this category of patients.

The actual material was processed on a personal computer in the Excel 2010 program, the z-criterion and the method of comparing two proportions were used to compare two relative values. The obtained results were presented in the form of M (m), n - the number of examined patients in the group. The difference was considered statistically significant when $p < 0.05$, $p < 0.01$ and $p < 0.001$.

Results. The results of the first step towards achieving the goal, which involved determining the nature and frequency of affected body systems in patients with HPS of varying degrees of severity, are shown in table 1.

Table 1

Character and frequency of syntropic extrahepatic lesions of body systems in cirrhotic patients with the hepatopulmonary syndrome severity degree (n; %; p)

Lesions of body systems	Cirrhotic patients with HPS; n = 93, %		HPS severity degree						Reliability, p		
			I; n = 28, %		II; n = 44, %		III; n = 21, %				
	n	%	n	%	n	%	n	%	I vs II	I vs III	II vs III
Skin, its appendages and mucous membranes	73	78.5	11	39.3	41	93.2	21	100.0	<0.001	<0.001	>0.05
Osteoarticular	63	67.7	12	42.9	30	68.2	21	100.0	<0.05	<0.001	<0.01
Circulatory	71	76.3	14	50.0	37	84.1	20	95.2	<0.01	<0.001	<0.05
Hemopoietic	79	84.9	18	64.3	40	90.9	21	100.0	<0.01	<0.01	<0.05
Digestive	93	100.0	28	100.0	44	100.0	21	100.0	>0.05	>0.05	>0.05
Urinary	21	22.6	0	0.0	11	25.0	10	47.6	-	-	<0.05
Nervous	76	81.7	14	50.0	41	93.2	21	100.0	<0.001	<0.001	>0.05

As shown in table 1, the lesions of the skin, its appendages and mucous membranes were found in 78.5 % of the patients with HPS, 100.0 % of which - patients with HPS of the III severity degree, that was significantly more common than in patients with the II (93.2 %) and I (39.3 %; $p < 0.001$) severity degrees, with a significant difference between the latter groups ($p < 0.001$).

Osteoarticular system was affected in 67.7 % of the examined patients. However, the most of such lesions were identified in the patients with the III degree HPS (100.0 %)

compared to the II (68.2 %; $p < 0.01$) and the I (42.9 %; $p < 0.001$), the frequency of which also significantly varied between themselves ($p < 0.05$).

The disorders of the circulatory system were identified in 76.3 % of the individuals with syntropic HPS, among which significantly more often in patients with HPS of the III (95.2 %) than with HPS of the II (84.1 %; $p < 0.05$) and the I (50.0 %; $p < 0.001$) severity degrees, with a significant difference between the latter ($p < 0.01$).

Almost all examined patients (84.9 %) had signs of hemopoietic system disorders. And again, the greatest

damage was detected in the patients with the III severity degree HPS (100.0%), slightly lower - with the II (90.9%; $p < 0.05$) and the I (64.3%; $p < 0.01$) severity degrees. 100.0% of patients with HPS had disorders of the digestive system.

In a much smaller number of patients (22.6 %) were diagnosed the syntropic lesions of the urinary system, the majority (47.6 %) of which were the persons with HPS of the III severity degree, which was significantly

more common than in case of HPS of the II degree (25.0%, $p < 0.05$). 81.7 % of the patients had lesions of the nervous system.

The most damage to the central nervous system experienced patients with severe (III degree) HPS - in 100.0 % cases, which is significantly more than in the other two groups - with the I (50.0%, $p < 0.001$) and the II (93.2 %) degrees, frequency between the latter, as seen in fig. 1 has also significantly ($p < 0.001$) differed.

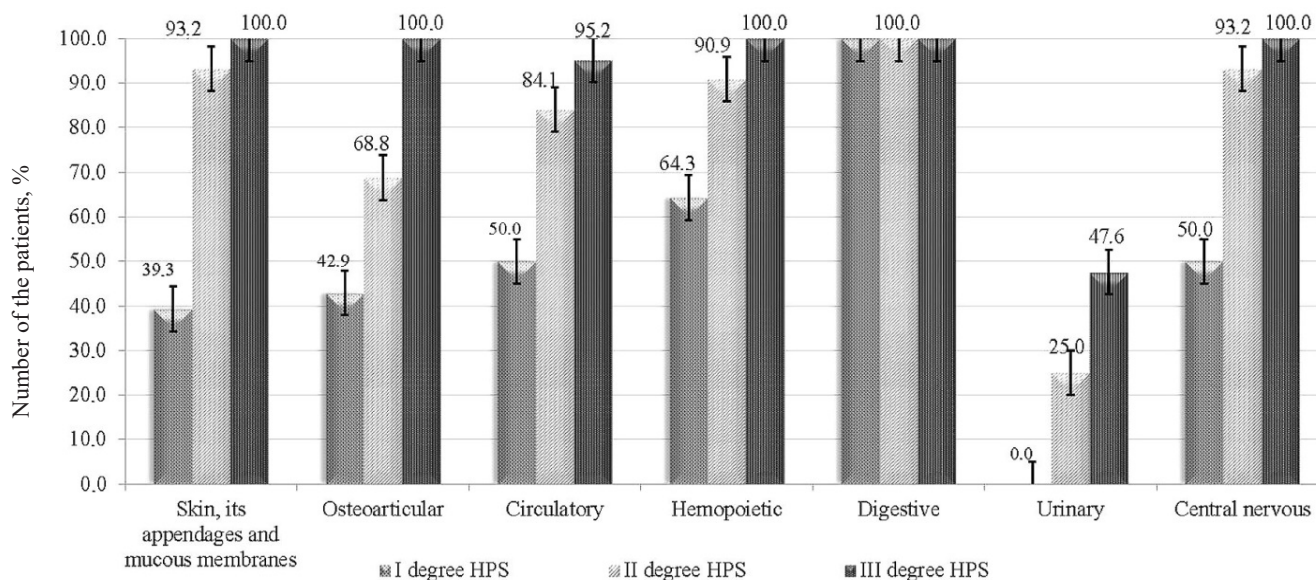


Fig. 1. The nature and frequency of the syntropic comorbid lesions in cirrhotic patients with the various hepatopulmonary syndrome severity degree.

The results of the second step towards achieving the goal, which involved determining the nature and frequency of syntropic syndromes and nosological units in patients with HPS of various severity degrees, are presented in fig. 2.

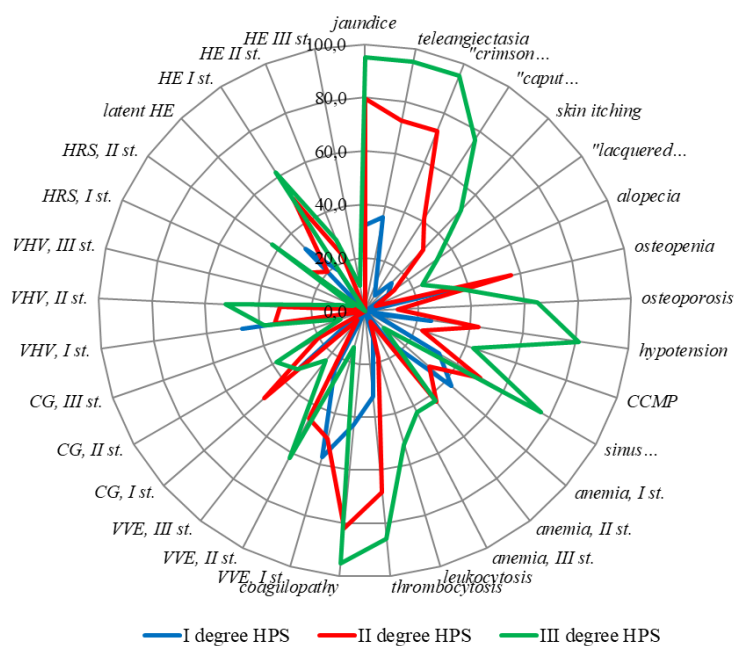


Fig. 2. Syntropic extrahepatic syndromes and nosological units in cirrhotic patients with the various severity degree hepatopulmonary syndrome.

Studying the syntropic comorbid lesions of the skin, its appendages and mucous membranes, we found that the incidence of skin dyschromia (jaundice) in patients with HPS of the I severity degree equaled 32.1 % and has been significantly ($p < 0.001$) increasing with the increasing of the lung injury severity. It was found in 79.5 % of the cirrhotic patients with HPS of the II severity degree and in most of the patients with the III severity degree - in 95.2 %, that significantly differed ($p < 0.05$). In 35.7 % of those with HPS of the I degree there were found telangiectasias, which was significantly ($p < 0.001$) more likely than in those with the II (72.7 %) and the III (95.2 %) severity degrees, values between them differed ($p < 0.05$).

The incidence of the detection of "crimson tongue" in patients with HPS of the III severity degree was 57.1 %, which is more than in other two groups - the II (29.5 %; $p < 0.05$) and the I (10.7 %) degree HPS. Skin lesions with the appearance of "caput medusae" were encountered in 40.9 % of those from the II and in 76.2 % of those from the III degree HPS, which differs from such frequency in the individuals with the I degree HPS (7.1 %, $p < 0.001$).

Somewhat less were found such systemic syntropic skin lesions as itching and "lacquered nails". Complaints about the appearance of skin itching were expressed by a half of the patients with severe (III degree) HPS (52.4 %) and by 31.8 % of the patients with HPS of the II and by 14.3 % of patients with HPS of the I degree. Their frequency significantly ($p < 0.05$) changed with the increasing of the severity of pulmonary disorders. 33.3 % of the patients with HPS of the III degree had "lacquered nails" that was significantly more likely than in the patients of the other two groups: the I (10.7 %; $p < 0.05$) and the II (13.6 %; $p < 0.05$) degree HPS. The appearance of alopecia was noted in five patients (23.8 %) with HPS of the III and in two patients (4.5 %) with HPS of the II degree, with a significant difference between the values in the patients with II and III degree HPS ($p < 0.01$).

Continuing to study the lesions of other organs and systems in patients with HPS, we assessed the state of their bones, highlighting two nosological units - osteopenia and osteoporosis. Osteopenia was most often defined in patients with the II degree HPS (56.3 %), which was significantly higher than the rates in two other groups - with the I (42.9 %; $p < 0.05$) and the III (35.3 %; $p < 0.05$) degree. However, reduced frequency of osteopenia in patients with the III degree HPS was accompanied by the increased frequency of osteoporosis (64.7 %), which was significantly higher compared with patients from the II degree HPS (12.5 %, $p < 0.001$). So, all patients with III and most patients of the II degree HPS possessed damaged bone tissue.

For the following research, we have selected patients with mild syntropic diseases of the circulatory system that did not impede pulmonary vascular symptoms and did not hide their clinical signs. Hypotension was the most frequently found in patients with HPS of the III degree (81.0 %) being significantly more common than in the patients with the II (43.2 %; $p < 0.01$) and the I

(25.0 %; $p < 0.001$) degrees. Between the examined groups of patients with the I and the II degree HPS the frequency of the patients with low blood pressure also significantly ($p < 0.05$) differed. CCMP was diagnosed in 42.9 % of patients with the III degree HPS, that was significantly more often than in the patients with the II (22.7 %; $p < 0.05$) and the I (3.6 %; $p < 0.001$) degree HPS, values between which were significantly different ($p < 0.05$).

In 81.0 % of patients with of the III degree HPS were found heart rhythm disorders, among which the most frequent - sinus tachycardia (76.2 % of cohort patients). It is significantly more often than in patients with the II (heart rhythm disorders in 52.3 % of the patients; $p < 0.05$) and the I (32.1 %; $p < 0.05$) degrees with the significant difference between them ($p < 0.05$). Sinus tachycardia was diagnosed in 50.0 % of patients with the II and in 32.1 % - with the I degree HPS. The frequency of its manifestation significantly differed in groups: between the I and the II ($p < 0.05$), the I and the III ($p < 0.05$), the II and the III ($p < 0.05$) degree HPS.

Anemia was often found in the patients with the III degree HPS (95.2 %), which was significantly more than in the patients of other two groups - the II (79.5 %, $p < 0.05$) and the I (57.1 %; $p < 0.01$) degrees. The reliable difference in the incidence of anemia was between the indices in the patients with the I and II severity degree HPS ($p < 0.05$). In most people with HPS of the I degree (42.9 %), anemia was mild, in 14.3 % - moderate and no patient had severe. Somewhat different results were observed in the patients with the II degree HPS: in 31.8 % - mild anemia, in 43.2 % - moderate and in 4.5 % - severe. Among the patients with the III degree HPS the frequency of moderate and severe anemia was the same (42.9 % each) and only in two patients (9.5 %) - mild.

We have found that the majority (46.2 %) of the patients with HPS of the I degree has normochromal anemia, 10.7 % - hypochromal. Similar results were found in patients with the II degree HPS: in 52.3 % of patients - normochromal, in 25.0 % - hypochromal, and only one patient (2.3 %) had hyperchromal anemia. The incidence of normochromal anemia in patients with the III degree HPS was 42.9 %, in 47.6 % - hypochromal, and in 4.8 % - hyperchromal.

The incidence of the normoregeneratory anemia has been decreasing and the incidence of hyperregeneratory anemia - increasing in the accordance with growing of the severity of vasopulmonary lung complication. Normoregeneratory anemia was identified in 32.1 % of patients with the I degree HPS, that was significantly more common than in the patients with the II (18.2 %; $p < 0.05$) and the III (4.8 %; $p < 0.01$) degrees, with a significant difference in their values in patients with II and III degree HPS ($p < 0.05$). The incidence of the hyperregeneratory anemia in patients with HPS of the I degree was 25.0 %, the II degree - 61.4 %, and the III degree - 90.5 %. Between the indices in groups it was found reliable difference: patients with the I and the II ($p < 0.01$), the I and the III ($p < 0.001$), the II and the III ($p < 0.01$) degree HPS.

In 52.4 % of the patients with severe (III degree) HPS it was diagnosed leukocytosis, which was significantly more likely than in those with the I (10.7 %; $p < 0.001$) and the II (18.2 %, $p < 0.01$) degrees.

The disorders of platelets' hemostasis we have often found in the patients with the III degree HPS (85.7 %), which was significantly more likely than in those with the II (68.2 %; $p < 0.05$) and I (32.1 %; $p < 0.001$) degrees. The incidence of the thrombocytopenia in groups of patients with the I and II degree HPS also differed significantly ($p < 0.01$).

Hemostatic disorder due to the coagulopathy was also detected in a large number of patients. Its frequency was highest in patients with the III severity degree HPS (95.2 %), slightly lower - in those with the II (81.8 %; $p < 0.05$) and the I (42.9 %, $p < 0.001$) degree HPS, with the statistical difference between the last two values ($p < 0.001$).

Evaluating the results of esofagogastroduodenofibroskopy in the patients with the different degrees of HPS severity, we determined that 100.0 % of the individuals with the II and the III degree HPS had VVE that was significantly ($p < 0.05$) more likely than in the patients with the I degree HPS (82.1 %). The frequency of the I degree VVE has been decreasing with the increasing of the HPS severity, which was compensated by the increase of the rate of their more severe forms. Thus, in patients with HPS of the I degree the frequency of the I degree VVE was 57.1 %, which was more common than in the patients with the II (50.0 %) and the III (14.3 %; $p < 0.05$) degrees of HPS. The difference between the frequency of the I degree VVE also significantly ($p < 0.01$) differed in two latter groups.

While studying the frequency of the II degree VVE they were detected in 25.0 % of the patients with the I degree HPS, which was much less compared to the II (45.5 %; $p < 0.05$) and the III (61.9 %; $p < 0.01$) HPS severity degree. VVE of the III degree was determined in two patients (4.5 %) with HPS of the II degree and in five (23.8 %) - with the III degree HPS, with the statistically significant difference in these values ($p < 0.01$).

Studying the frequency of CG made possible to obtain the following results: it was found in 35.7 % of those with the I degree HPS, in 70.5 % - with the II and in 81.0 % - with the III degree HPS. Moreover its frequency significantly differed in groups of the patients with the I and the II ($p < 0.01$), the I and the III ($p < 0.001$) degree HPS. In the patients with the I degree HPS the frequency of CG was as follows: the I degree - in 32.1 %, the II degree - in 3.6 % and no patients with the III degree CG. In a study of patients with the II degree HPS, the presence of CG was determined with the following frequency: the I - in 50.0 %, the II - in 20.5 %. It was almost equally diagnosed CG of the I and the II (33.3 % and 38.1 % respectively) and in 9.5 % of the individuals with the III degree CG in patients with the III degree HPS. The results of the statistical processing of the received information are as follows: the frequency of CG of the I degree was significantly ($p < 0.05$) higher in people with the II compared

to the I and the III degree HPS, the rate of CG of the II degree was the highest in persons with the III degree HPS compared to the I ($p < 0.01$) and the II ($p < 0.05$), with the significant differences between the latest values ($p < 0.05$).

HVV were met in all 100.0 % patients with HPS of the III degree, which was significantly more common than in the patients with the II (68.2 %; $p < 0.01$) and the I ($p < 0.001$) degree HPS, the difference between their values - $p < 0.05$. HVV of the I degree was found in 46.4% of those with the I, in 34.1 % - with the II and in 38.1 % - with the III degree HPS. HVV of the II and the III degree were not detected in any patient with HPS of the I degree. VVE of the II degree were found in the patients with HPS of the II and the III degree HPS - in 31.8 % and 52.4 % of patients respectively. HHV of the III degree were found in 2.3 % and 9.5 % of the patients from the same groups. Between the frequency of VVE of the II and the III degree in the last two groups it was found the statistical difference ($p < 0.05$).

Syntropic urinary tract lesions also occurred in cirrhotic patients with HPS because their origin caused by the violation of the regulation of the vascular tone of the capillars. However, their frequency was not high: HRS type I was found in only one examined patient (1.1 %) and type II - in 21.5 % of the patients. One patient with type I HRS had the III degree HPS and the combination of these nosologies was prognostically unfavorable for him. HRS type II was diagnosed in 25.0 % of the individuals with HPS of the 2nd degree, that was less frequent than in the patients with the III degree HPS (42.9 %; $p < 0.05$).

Continuing to study other syntropic lesions of the body systems in cirrhotic patients with vasopulmonary complications, we came to the last one - central nervous system, because the development of the HE in such patients, as already shown [3], is dependent on the severity of their condition.

The incidence of HE has been significantly growing with the severity of HPS: the patients with the 1st degree HPS have HE in a half (50.0 %) of the cases, with the 2nd degree - in 93.2 % and with the 3rd degree HPS - in 100.0 %. It was found the statistical pattern ($p < 0.001$) between the values in groups compared to the patients with the 1st degree HPS. Latent HE we found in 32.1 % of the patients with HPS of the 1st degree and in 20.5 % - in case of the 2nd degree HPS. In 17.9 % of those with HPS of the 1st degree HE was of the 1st degree. Also it was found in 50.0 % and in 61.9 % of the patients with HPS of the 2nd and the 3rd degree respectively, with significantly ($p < 0.001$) higher rates in the patients with the 3rd compared to the 1st degree HPS and in patients with the 2nd in comparison with the 1st ($p < 0.01$) degree HPS. HE of the 2nd degree was diagnosed in 22.7 % of those with HPS of the 1st degree and in 28.6 % - with the 3rd degree HPS. HE of the 3rd degree was found only in 9.5 % of the patients with HPS of the 3rd degree.

The frequency of extrahepatic syntropic syndromes and nosological units, as well as the affected systems, changed significantly ($p < 0.05$) with increasing severity

ty of LC vasopulmonary complications (see fig. 2), which may indicate the common pathogenetic mechanisms of occurrence, and the study will enable a comprehensive assessment the severity of the patient's condition, prescribe complex pathogenetically justified treatment and determine the prognosis of the course of the disease in this category of patients.

Conclusions. In cirrhotic patients with HPS disorders of the digestive system were diagnosed in 100.0 % cases under investigation; hemopoietic and nervous systems injuries were characteristic respectively for 84.9 % and 81.7 % of patients; skin, its appendages and mucous membranes were damaged in 78.5 %, as well as cardiovascular (76.3 %), osteoarticular (67.7 %) and urinary (22.6 %) system pathologies were diagnosed. Increased HPS severity significantly correlated ($p < 0.05$) with the increased incidence of the above pathologies.

Among the syntropic polymorbid lesions of the skin, its appendages, mucous membranes, in 68.8 % of cirrhotic

patients with HPS exposed jaundice, 66.7 % - telangiectasias. Among the lesions of osteoarticular system - in 44.7 % of patients was detected osteopenia, and in 27.7 % - osteoporosis. Among the disorders of the cardiovascular system arrhythmias were diagnosed in 52.7 % of patients, arterial hypotension - in 49.5 %, cirrhotic cardiomyopathy - in 20.4 % of cases; among the lesions of the hemopoietic system most often findings were anemia (76.3 %), coagulopathy (73.1 %) and thrombocytopenia (61.3 %). Among the lesions of the digestive system prevailed oesophageal veins varicosities (94.6 % of patients), hemorrhoidal veins varicosities (68.8 %) and cirrhotic gastropathy (62.4 %). Among the lesions of the urinary system type II hepatorenal syndrome was detected in 21.5 % cases. Among central nervous system lesions predominated hepatic encephalopathy - 81.7 % cases. The frequency of the abovementioned syndromes and nosological units was significantly higher ($p < 0.05$) in patients with HPS increased severity.

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Conflict of interests

The authors declare no conflicts of interest.

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Introduction. All over the world, and in Ukraine in particular, the incidence of liver diseases is constantly increasing. By practicing the most effective individualized appointment of complex treatment, it should be taken into consideration the involvement of different organ systems to the pathological processes of the cirrhotic patients, which we define as syntropic polymorbid lesions.

The aim of the study. To determine the frequency and character of syntropic extrahepatic lesions in cirrhotic patients depending on the hepatopulmonary syndrome severity degree.

Materials and methods. In a randomized manner with preliminary stratification by the presence of hepatopulmonary syndrome were studied 93 patients with liver cirrhosis, who underwent the comprehensive clinical-laboratory and instrumental examination.

Results. According to the obtained results, most often in patients with liver cirrhosis associated with hepatopulmonary syndrome syntropic extrahepatic lesions affected other organ systems as follows: digestive system - 100.0 % patients under investigation; hematopoietic system - 84.9 %; nervous system - 81.7 %; integumentary system and mucous membranes - 78.5 %; blood circulatory system - 76.3 %; osteoarticular system - 67.7 %; urinary system - 22.6 %. Increased severity of hepatopulmonary syndrome significantly ($p < 0.05$) correlated with their creased frequency of lesions.

Among syntropic polymorbid lesions of the integumentary system and mucous membranes, 68.8 % patients with hepatopulmonary syndrome had jaundice, 66.7 % - telangiectasia. Among lesions of the osteoarticular system osteopenia was diagnosed in 44.7 % of patients, osteoporosis - in 27.7 %. Among lesions of the circulatory system 52.7% of patients suffered from heart rhythm disorders, 49.5 % - from arterial hypotension, 20.4 % - from cirrhotic cardiomyopathy. Among lesions of the hematopoietic system anemia (76.3 %), coagulopathy (73.1 %) and thrombocytopenia (61.3 %) were diagnosed most often. Digestive system lesions include esophageal veins varicosities (94.6 % of patients), hemorrhoidal veins varicosities (68.8 %), and cirrhotic gastropathy (62.4 %). Among lesions of the urinary system in 21.5 % of patients was diagnosed type II hepatorenal syndrome. Among the lesions of central nervous system in 81.7 % of patients was diagnosed hepatic encephalopathy. The frequency of syndromes and nosological units increased significantly ($p < 0.05$) with the increase of hepatopulmonary syndrome severity.

Conclusions. 100.0 % patients with liver cirrhosis accompanied by hepatopulmonary syndrome were affected by syntropic polymorbid lesions of the digestive system, 94.6 % of which were represented by esophageal vein varicosities. Out of 84.9 % of patients with hematopoietic lesions anemia was diagnosed in 76.3 %, coagulopathy - in 73.1 % of cases. Of total 81.7 % patients with nervous system injuries hepatic encephalopathy was diagnosed in 81.7 % patients. In 78.5 % cases of damaged skin, its appendages and mucous membranes jaundice covered 68.8 %, and telangiectasia 66.7 % of cases. In 76.3 % of cardiovascular system lesions arrhythmias were diagnosed in 52.7 %. With the increasing severity of hepatopulmonary syndrome, the frequency of the above lesions increased significantly ($p < 0.05$).

Keywords: liver cirrhosis, extrahepatic syntropic lesions, hepatopulmonary syndrome.

Характер і частота синтропічних позапечінкових уражень у хворих на цироз печінки з гепатопульмональним синдромом різного ступеня тяжкості

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Вступ. Зміни системного кровообігу, спричинені цирозом печінки (ЦП) з портальною гіпертензією, призводять до порушення кровоплину майже в усіх органах, у тому числі й легенях, що провокує тяжкі патологічні процеси, поєднані причинно-наслідковим зв'язком зі ступенем підвищення тиску у ворітній системі печінки. Унаслідок цих змін у судинному руслі легень виникає гепатопульмональний синдром (ГПС), який трапляється у 45,4 % усіх уражень дихальної системи й є актуальною проблемою сучасної клінічної медицини. Призначаючи найефективніше індивідуалізоване комплексне лікування, варто брати до уваги залучення у патологічний процес у хворих на ЦП різних органів і систем, трактованих нами як синтропічні поліморбідні ураження. Попри важливе, а інколи й вирішальне значення їхнього впливу на перебіг ЦП такі дослідження залежно від ступеня тяжкості ГПС не здійснювали.

Мета. З'ясувати характер і частоту синтропічних позапечінкових уражень у хворих на цироз печінки з гепатопульмональним синдромом різного ступеня тяжкості.

Матеріали й методи. Комплексно обстежили 93 хворих на ЦП, залучених у дослідження в рандомізований спосіб, із попередньою стратифікацією за наявністю ГПС, визначили залежність характеру й частоти інших синтропічних позапечінкових уражень від ступеня його тяжкості.

Результати. Згідно з результатами досліджень, найчастіше у хворих на ЦП з ГПС виявляли ураження травної системи – у 100,0 % осіб, майже з однаковою частотою – кровотворної і нервової (84,9 і 81,7 % відповідно), трохи рідше інших систем – шкіри, її додатків і слизових оболонок (у 78,5 %), кровообігу (у 76,3 %), кістково-суглобової (у 67,7 %) та лише у 22,6 % – сечовидільної, з наростанням тяжкості ГПС частота уражень яких достовірно ($p < 0,05$) зростала.

Серед синтропічних поліморбідних уражень шкіри, її придатків, слизових оболонок найчастіше у 68,8 % хворих на ЦП із ГПС траплялися жовтяниця, у 66,7 % – телеангіоектазії; серед уражень кістково-суглобової системи – у 44,7 % хворих діагностовано остеопенію, у 27,7 % – остеопороз; серед уражень системи кровообігу у 52,7 % хворих виявляли порушення серцевого ритму, у 49,5 % – артеріальну гіпотонію, у 20,4 % – цирозну кардіоміопатію; серед уражень системи кровотворення найчастіше фіксували анемію (у 76,3 %), коагулопатії (у 73,1 %), тромбоцитопенію (у 61,3 %); з-поміж уражень органів травлення найчастіше діагностували варикозно розширені вени стравоходу – у 94,6 % хворих, рідше – варикозно розширені гемоїдальні вени – у 68,8 %, цирозну гастропатію – у 62,4 %; серед уражень сечовидільної системи гепаторенальний синдром II типу визначали у 21,5 % хворих; ураження центральної нервової системи (печінкова енцефалопатія) спостерігали у 81,7 % хворих; частота синдромів та нозологічних одиниць достовірно ($p < 0,05$) збільшувалася з наростанням ступеня тяжкості ГПС.

Висновки. Статистично достовірно у 100,0 % хворих на цироз печінки з гепатопульмональним синдромом виявлено синтропічні ураження травної системи (варикозно розширені вени стравоходу (94,6 %)), у 84,9 % – ураження кровотворної (анемія (76,3 %), коагулопатія (73,1 %)), у 81,7 % – нервової (печінкова енцефалопатія (81,7 %)) систем, у 78,5 % – ураження шкіри, її придатків і слизових оболонок (жовтяниця (68,8 %), телеангіоектазії (66,7 %)), у 76,3 % – серцево-судинної системи (аритмії (52,7 %)); із наростанням тяжкості гепатопульмонального синдрому частота цих уражень достовірно ($p < 0,05$) зростає.

Ключові слова: цироз печінки, гепатопульмональний синдром, позапечінкові синтропічні ураження.

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