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THE EFFECT OF S-ADENOSYL-L-METHIONINE AND ANTIHYPERTENSIVE COMBINATION TREATMENT ON THE COMORBID COURSE OF METABOLIC-ASSOCIATED STEATOTIC LIVER DISEASE AND ARTERIAL HYPERTENSION

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Background. The prevalence of metabolic dysfunction-associated steatotic liver disease (MASLD), defined by a broad spectrum of liver damage ranging from simple steatosis to progressive nonalcoholic steatohepatitis (NASH), liver fibrosis (LF), and cirrhosis, is increasing every year in patients with obesity and other metabolic syndromes [1]. Recently, the study of the mechanisms of MASLD progression in patients with concomitant arterial hypertension (AH) has attracted considerable

attention from scientists. AH is a multifactorial disease that results from the interaction between genetic predisposition and environmental risk factors [2]. The main reason for the increased mortality of patients with MASLD and AH is the development of cardiovascular diseases [3]. Currently, the mechanisms of drug correction of this comorbid pathology remain poorly understood. Therefore, the search for effective treatment regimens for patients with combined MASLD and AH is a relevant issue of modern internal medicine.

Objective — to determine the likely effect of S-adenosyl-L-methionine (SAMe) and antihypertensive combination treatment on the clinical course, liver enzymatic activity (the levels of Aspartate aminotransferase (AST), Alanine Aminotransferase (ALT), Gamma-Glutamyl Transpeptidase (GGT), Alkaline phosphatase (ALP)), Nonalcoholic steatohepatitis (NASH) activity and influence on the liver fibrosis (LF) stage in patients with metabolic MASLD and AH comorbid course.

Materials and methods. We examined 40 patients with MASLD and AH comorbid course before and after 5 months of the SAMe and antihypertensive combination treatment. The control group comprised 20 apparently healthy people. Patients with viral hepatitis, liver cirrhosis, alcoholic liver disease, AH stage III, and liver fibrosis stage F3-4 were excluded. Liver cytolysis indicators analyses were performed using biochemical techniques. The severity of liver fibrosis was assessed using transient elastography results.

Results. Analysis of the results of SAMe and antihypertensive combination treatment in patients with MASLD and AH, demonstrated a significant reduction in complaints of increased fatigue by 9% ($p<0.05$), headache by 8% ($p<0.05$), general weakness by 20% ($p<0.05$), right upper quadrant pain by 11% ($p<0.05$), sleep disturbance by 12% ($p<0.05$) and mood worsening by 22% ($p<0.05$) (Fig 1). However, when comparing the results of the treatment effect on the dynamics of complaints of heart palpitations ($p>0.05$) and loss of appetite ($p>0.05$), no significant changes were recorded.

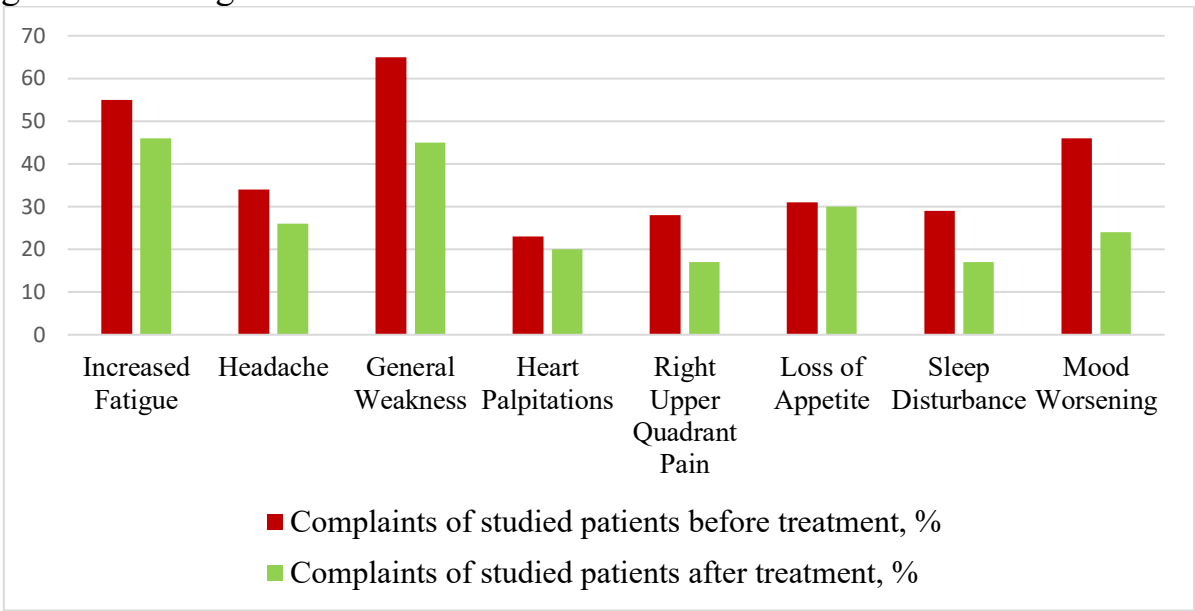
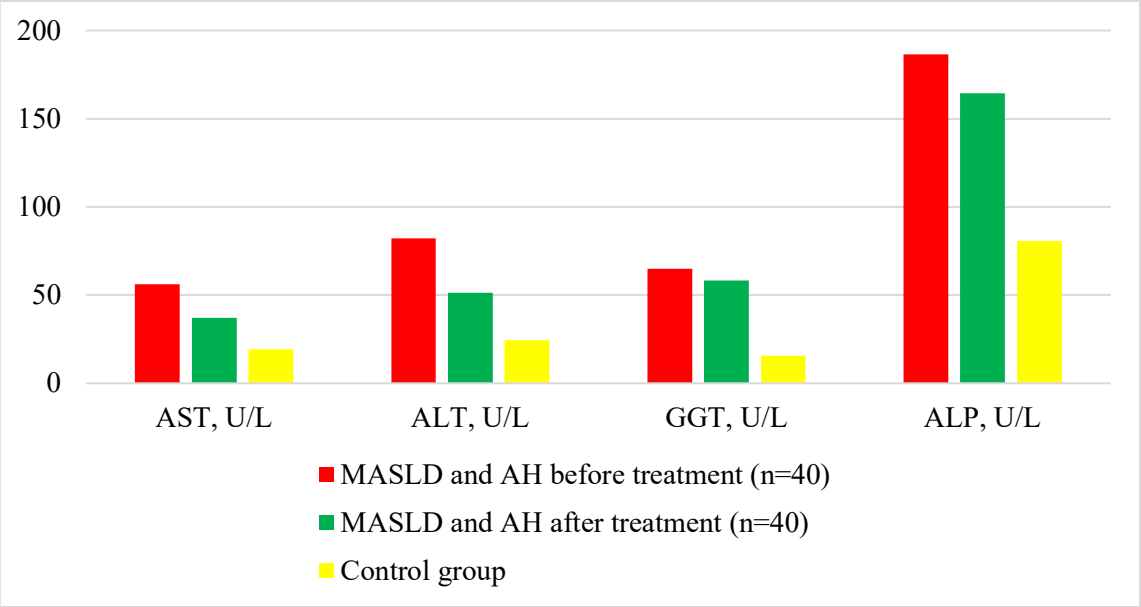


Fig. 1 Results of SAMe and antihypertensive combination treatment on the clinical course of the disease in patients with MASLD and AH

After 5 months from the start of combined SAMe and antihypertensive therapy the mean values of AST levels in the group of patients with comorbid pathology were



reduced from (56.3±10.2) IU/l to (37.2±12.5) IU/l ($p<0.01$) (Fig 2). The mean values of ALT levels in the studied patients were also reduced from (82.3±12.4) IU/l to (51.3±11.8) IU/l ($p<0.01$). The mean values of GGT against the background of the proposed treatment decreased from (65.0±16.4) IU/l to (58.4±12.5) IU/l ($p<0.05$), and the mean values of ALP decreased from (186.6±27.9) IU/l to (164.3±17.5) IU/l ($p<0.05$).

Fig. 2 Results of SAMe and antihypertensive combination treatment on the liver cytolysis indicators in patients with MASLD and AH

It was also proven that 5 months after the start of SAMe use, positive dynamics were observed in the regression of NASH and liver fibrosis in the group of patients with MASLD and AH (Fig 3). Thus, the number of patients in the stage of LF F1-2 decreased from 23.8% to 15% ($p<0.05$), the number of patients in the stage of fibrosis F0-1 decreased from 26.1% to 17% ($p<0.05$), the number of patients in the stage of NASH decreased from 23.8% to 14% ($p<0.05$). Thus, the obtained results of the SAMe treatment demonstrate the participation of this drug in the regression of the stages of MASLD.

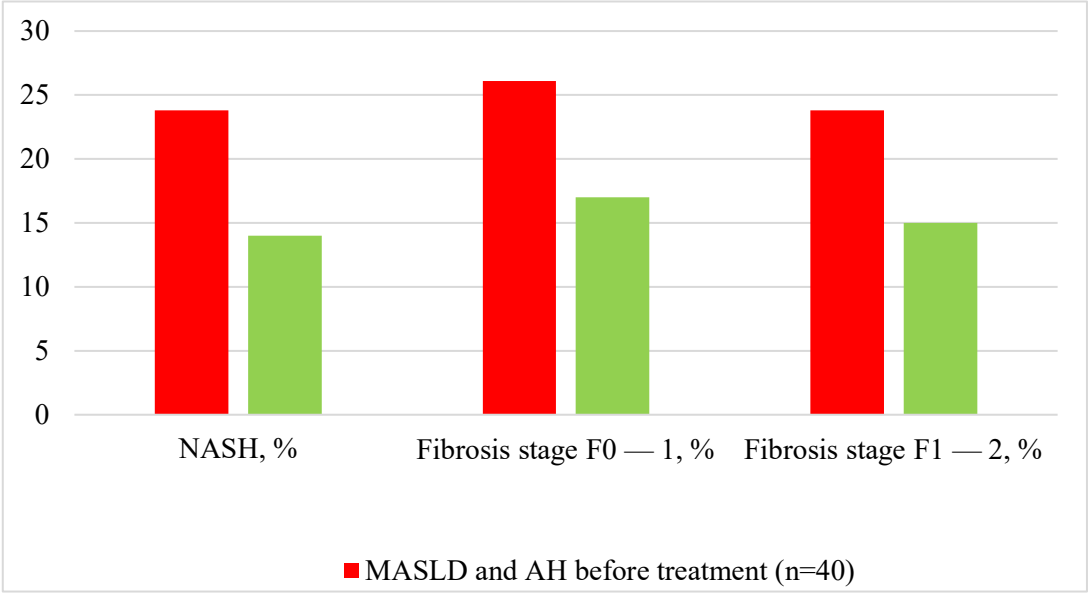


Fig.3 Results of SAMe and antihypertensive combination treatment on the NASH and liver fibrosis stages in patients with MASLD and AH

Conclusions. The results of SAMe and antihypertensive combination therapy show the improvement of the clinical course of the disease, liver function, and the regression of the LF stage. Therefore, the inclusion of SAMe in standard antihypertensive therapy is an appropriate method of treatment of patients with comorbid course of MASLD and AH as a pathogenetic drug with a pronounced cytoprotective, anti-inflammatory and antifibrotic effect.

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