



## STUDY OF COLLAGEN IV INDICATORS IN URINE BEFORE AND AFTER TREATMENTS IN PATIENTS WITH HEPATORENAL SYNDROME WITH LIVER CIRRHOSIS OF VIRUS ETIOLOGY (HEPATITIS B AND C).

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Article history:	Abstract:
<b>Received:</b> October 6 <sup>th</sup> 2022 <b>Accepted:</b> November 6 <sup>th</sup> 2022 <b>Published:</b> December 14 <sup>th</sup> 2022	Cirrhosis of the liver is manifested by necrosis of hepatocytes, disruption of its normal architecture due to diffuse growth of connective tissue and the formation of regeneration nodules, as well as progressive fibrosis. The article presents a modern approach to the treatment of hepatorenal syndrome, one of the severe complications of the disease. The effect of eplerenone, L-ornithine L-aspartate and glutathione drugs on kidney fibrosis was evaluated based on complex treatment.
<b>Keywords:</b> hepatitis B, hepatitis C, liver cirrhosis, hepatorenal syndrome, collagen IV, L-ornithine, L-aspartate, glutathione, eplerenone.	

Cirrhosis of the liver is a polyetiological disease, in most cases it is caused by hepatitis B, C, D viruses (the most common type C), alcohol abuse. Allimentary - allergic, toxic and other factors also cause the disease [1].

The mechanism of development of liver cirrhosis is closely related to its morphological changes. In this case, blood circulation disturbance as a result of necrosis of liver cells and the growth of connective tissue in their place takes the leading place [10, 13, 4].

The disease is one of the six leading causes of death for patients aged 35 to 60 years in economically developed countries. It is recorded in 14-30 people out of every 100,000 inhabitants. Every year, about 1.4 million people in the world die from cirrhosis of the liver and its complications. Scientific observations confirm that liver cirrhosis is more common in men [1, 7, 14, 8, 11].

Among the numerous complications of liver cirrhosis, one of the least studied is hepatorenal syndrome. Approximately 15% of affected patients develop hepatorenal syndrome within 6 months of their first hospitalization for ascites, and 40% within 5 years [2, 15, 9, 5].

There are two types of hepatorenal syndrome. Its first type is associated with rapid deterioration of kidney function in response to increasing deterioration of liver function. A 100% increase (at least 221mmol/l) of creatinine in the blood compared to the primary level is characteristic in this type of patients [6].

The second type of hepatorenal syndrome is observed in liver cirrhosis with ascites and resistant to diuretics and is stable and slowly worsens [3].

Type IV collagen is one of the markers indicating the development of fibrosis processes not only in the liver, but also in the kidney in liver cirrhosis. It forms the basis of the basal membrane of balls and tubules. According to some authors, the appearance of this protein in urine is one of the early morphological signs of nephropathy. In comparison to healthy people, patients with normoalbuminuria had higher urinary excretion. High accumulation of collagen IV in the tissues of patients with kidney biopsy was noted, and it is directly related to protein level in the urine of patients with normoalbuminuria. In this investigation, urinary excretion of type IV collagen was detected even in individuals with normal albumin [12]. The given data confirm that urinary excretion of type IV collagen can be observed before the clinical symptoms of nephropathy appear, and it is appropriate to use it in the diagnosis of fibrotic processes in the kidney even in hepatorenal syndrome.

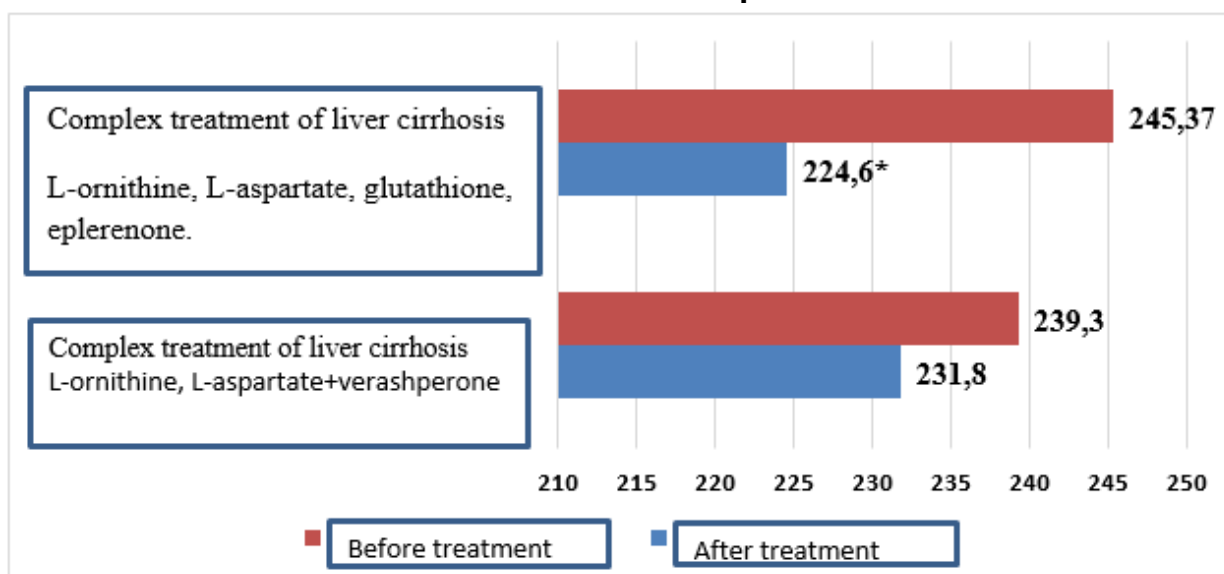
The purpose of the study: to study collagen IV indicators in urine before and after treatment in patients diagnosed with advanced liver cirrhosis due to chronic hepatitis V and C.

Research material and methods: As a source of research, 124 patients with clinical signs of type II hepatorenal syndrome treated at the clinic of Andijan State Medical Institute were observed. Patients with hepatorenal syndrome and included in the study were divided into two groups. The first group consisted of 60 patients with liver cirrhosis caused by viral hepatitis V, 28 men (46.7%) and 32 women (53.3%), their average age was 46.44±1.38. The second group consisted of 64 patients with liver cirrhosis caused by chronic hepatitis

C. 3 patients died of esophageal variceal bleeding and 1 of hepatocarcinoma and were not included in the follow-up group. Of the remaining 60 patients, 25 were men (41.6%) and 35 were women (58.4%), the average age was  $48.82 \pm 1.6$ .

Both groups of patients were divided into two subgroups of 30 patients in order to evaluate the effectiveness of complex treatment procedures with different contents. To the first subgroups

**1-TABLE**  
**Collagen IV indicators in urine before and after complex treatment of patients with advanced liver cirrhosis due to chronic hepatitis B.**



Note: \* $p < 0.05$ -difference between pre- and post-treatment scores.

After the treatment, collagen IV values in the group of patients who received eplerenone + L-ornithine L-aspartate and glutathione with the standard treatment of liver cirrhosis were  $245.37 \pm 5.2 \mu\text{g}$  before treatment and  $224.6 \pm 6.4 \mu\text{g}$  after treatment ( $p < 0.05$ ). In patients receiving veroshperone + L-ornithine L-aspartate with standard treatment of liver cirrhosis, it was  $239.3 \pm 5.7 \mu\text{g}$  and  $231.8 \pm 6.1 \mu\text{g}$ , respectively, before and after treatment ( $p > 0.05$ ).

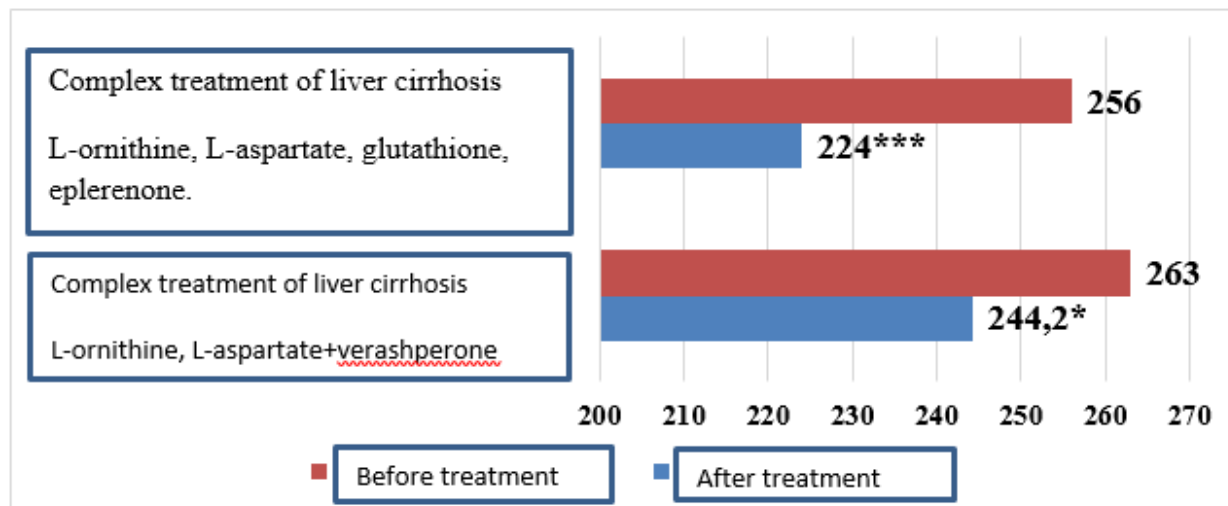
Collagen IV values were more reliable in patients with advanced liver cirrhosis due to chronic hepatitis C than in patients with advanced liver cirrhosis

due to chronic hepatitis B after various complex treatment regimens (Fig. 2).

In the group of patients who received eplerenone + L-ornithine L-aspartate and glutathione with the standard treatment of liver cirrhosis, collagen IV values decreased from  $256 \pm 4.2 \mu\text{g}$  to  $224 \pm 4.25 \mu\text{g}$  before and after the treatments, and the differences were highly reliable ( $p < 0.001$ ). In the second group of patients, the indicators were  $263 \pm 5.7 \mu\text{g}$  and  $244.2 \pm 5.13 \mu\text{g}$  before and after the treatment, respectively, and reliable differences were noted ( $p < 0.05$ ).

**2-Table**

**Collagen IV indicators in urine before and after complex treatment of patients with advanced liver cirrhosis due to chronic hepatitis C.**



Note: \*- $r < 0.05$ ; \*\*\*- $p < 0.001$ -difference between pre- and post-treatment indicators:

Summary. Higher levels of collagen IV in urine compared to its B form in liver cirrhosis developed on the basis of viral hepatitis C indicate that fibrosis processes are more rapid in liver cirrhosis developed as a result of hepatitis C. It was found that the use of eplerenone, L-ornithine L-aspartate and glutathione drug preparations on the basis of complex treatment of liver cirrhosis in patients stabilizes fibrosis processes not only in the liver but also in the kidneys. This can be attributed to the antifibrosis effect of eplerenone and glutathione drugs.

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