E CONF SERIES

International Conference on Medical Science, Medicine and Public Health
Hosted online from Jakarta, Indonesia
Website: econfseries.com 30th September, 2025

NEW APPROACHES TO ASSESSING KIDNEY DAMAGE IN THE CONTEXT OF LIVER CIRRHOSIS

Samadova A. B.
Assistant of the Department of Internal Diseases, Nephrology, Hemodialysis and Rehabilitation at the Urgench Branch of TMA

Relevance:
Hepatorenal syndrome (HRS) is a renal dysfunction without morphological changes that occurs in the context of severe liver failure and portal hypertension, and is frequently associated with liver cirrhosis. In recent years, the increasing frequency of renal failure associated with liver diseases and the clinical significance of new markers such as cystatin C have sparked scientific interest.

Aim: To assess renal dysfunction in the context of liver cirrhosis based on clinical and laboratory parameters and determine the prognostic significance of cystatin C.

Materials and methods: The study involved 90 patients with liver cirrhosis and 30 healthy controls. Patients with cirrhosis were divided into 2 groups:
without developed kidney dysfunction (n=50)
with developed renal dysfunction (n=40).
All patients underwent laboratory and instrumental studies: microalbuminuria (MAU), ALT, AST, bilirubin, cystatin C, creatinine, urea, lipid profile, glomerular filtration rate (GFR, calculated using the CKD-EPI formula), Doppler ultrasonography of renal vessels and liver elastography (Fibroscan). For statistical analysis, MS Excel 2010 was used, with $p<0.05$ considered statistically significant.

Results: Significant differences were observed between patients in the 1st and 2nd groups. In patients with developed renal dysfunction:
MAU in urine was significantly increased (90.35±17.21 versus 31.37±2.37, $p<0.05$);
blood creatinine (141.67±21.25 versus 68.8±2.36) and urea levels were elevated;
GFR decreased sharply (45.6±7.05 versus 91.14±3.08, $p<0.05$);
cystatin C levels were elevated (7.16±0.80 versus 2.43±0.18).

It was noted that an increase in cystatin C levels is significantly associated with a decrease in GFR (r=-0.28) and impaired renal blood flow. A strong correlation (r=0.85; r=-0.84) was observed between creatinine, urea, and GFR.

Conclusion: Renal dysfunction in the context of liver cirrhosis occurs with high frequency. Cystatin C, along with clinical and laboratory markers (creatinine, urea, MAU), holds a special place as a marker of diagnostic and prognostic significance. In-depth study of the molecular mechanisms of renal dysfunction is one of the promising directions for early detection and prevention of this pathology.