

## INVESTIGATION OF PANCREATIC ACTIVITY PARAMETERS IN PATIENTS DURING COVID-INFECTION IN REPUBLIC OF MOLDOVA

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**Introduction.** Chronic diffuse liver diseases continue to rank high among the issues contributing to high mortality rates worldwide. The Republic of Moldova holds the leading position globally in terms of the highest age-standardized incidence rate of liver cirrhosis and related mortality cases. The 2019 coronavirus (COVID-19) pandemic has posed yet another significant challenge for healthcare systems worldwide, given its potential to affect internal organs and cellular mechanisms. The investigation of metabolic interrelations between different organs and systems of the organism, particularly those with an injured liver affected by this new virus, has garnered significant scientific interest in recent years.

**The aim.** The study of pancreatic activity parameters in chronic liver patients during SARS-CoV2 infection in Republic of Moldova.

**Material and methods.** Our study represents a retrospective analysis of consecutively hospitalized patients in the COVID-19 unit at the *Timofei Moşneaga* Republican Clinical Hospital in Chişinău, Republic of Moldova, during the period from March 2020 to February 2021. A total of 73 patients' electronic medical records were examined, comprising 40 men (54.8%) and 33 women (45.2%), with a mean age of 57.29 years. All patients were categorized into three main groups: group 1 (13) consisted of individuals with chronic hepatitis (CH) of viral etiology (HBV, HCV); group 2 (13) included patients with liver cirrhosis (LC); and Comparison group 3 (CG) comprised patients (23) without liver pathology but with some functional issues related to the pancreas. Patients with metabolically associated liver disease (2) and nonspecific reactive hepatitis (22) were not considered in this analysis. Blood serum levels of glucose, amylase, and lipase were investigated in all patients. The analysis involved the use of percentages, means, and standard error of the mean for evaluation and statistical analysis, with the significance of differences (p) assessed using the Mann-Whitney U test.

**Results.** Elevated blood glucose levels, indicative of disrupted carbohydrate metabolism, were observed in patients with liver cirrhosis ( $6.38 \pm 1.23$  mmol/L) and in the Comparison group (CG) ( $8.11 \pm 0.79$  mmol/L), exceeding the normal reference values of 4.11-5.89 mmol/L. Amylase activity was within normal limits across all patient groups. In contrast, the level of lipase, a more sensitive indicator of pancreatic function, was elevated in the CG ( $112.13 \pm 82.16$  u/L) compared to the normal range of 13-60 u/L. These findings align with the main hypothesis and recent literature, suggesting that COVID-19 may induce pancreatic injury in patients with chronic liver disease and those with a history of pancreatic issues, highlighting the human pancreas as another potential target for the virus.

**Conclusions.** COVID-19 can provoke functional abnormalities in pancreatic function in patients with chronic diffuse liver disease, as well as in patients with a history of underlying pancreatic dysfunction. Further investigation of pancreatic function is needed in a larger group of patients with different liver pathologies.