

ASSESSMENT OF MAIN LIPID METABOLISM INDICATORS IN PATIENTS WITH CHRONIC PANCREATITIS AND METABOLICALLY ASSOCIATED FATTY LIVER DISEASE

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Abstract

The prevalence of metabolic syndrome (MS), non-alcoholic fatty liver disease (NAFLD), and non-alcoholic fatty pancreatic disease (NAFPD) accounts for one-quarter to one-third of the world's population. It has been proven that the key pathogenetic mechanisms of these conditions are disorders of lipid and carbohydrate metabolism. A high comorbidity between NAFLD and NAFPD has been demonstrated: 67.9% of patients with NAFPD were found to have hepatic steatosis, and 96.8% of patients with NAFLD were diagnosed with pancreatic steatosis.

Introduction

The prevalence of metabolic syndrome among patients with NAFPD ranges from 59.2% to 76.9% [1]. A meta-analysis revealed that the presence of NAFPD is associated with an increased risk of metabolic syndrome (relative risk (RR) = 2.25; 95% confidence interval (CI) 2.00–2.53; $p < 0.0001$), arterial hypertension (RR = 1.43; 95% CI 1.08–1.90; $p = 0.013$), NAFLD (RR = 2.49; 95% CI 2.06–3.02; $p < 0.0001$), type 2 diabetes mellitus (RR = 1.99; 95% CI 1.18–3.35; $p = 0.01$), and central obesity (RR = 1.91; 95% CI 1.67–2.19; $p < 0.0001$).

Concomitant metabolic syndrome negatively affects the clinical course of both acute and chronic pancreatitis. For example, moderately severe acute pancreatitis develops three times more frequently in the presence of metabolic syndrome than in its absence, partly because types I, IV, and V hyperlipidemia are associated with acute pancreatitis [4]. Dyslipidemia in NAFLD occurs in 60–70% of cases and is characterized by hypertriglyceridemia, elevated plasma levels of free fatty acids and low-density lipoprotein cholesterol, and decreased high-density lipoprotein cholesterol [2,3]. Therefore, strategies aimed at the primary prevention of dyslipidemia may contribute to reducing morbidity and mortality in liver and pancreatic diseases associated with metabolic syndrome.

Aim of the Study

To investigate the levels of the main lipid metabolism indicators in patients with chronic pancreatitis and metabolically associated fatty liver disease, to determine their relationship with clinical and biochemical characteristics, and to evaluate the effectiveness of the combined use of ursodeoxycholic acid and statins.



Materials and Methods

A clinical and laboratory study was conducted involving 78 patients. The first group consisted of 36 patients with chronic pancreatitis, while the second group included 42 patients with a combined course of chronic pancreatitis and metabolically associated fatty liver disease. The control group comprised 30 practically healthy individuals.

In all patients, the main indicators of lipid metabolism were studied, including total cholesterol, triglycerides, high-density lipoproteins (HDL), and low-density lipoproteins (LDL). Additionally, clinical and biochemical parameters were evaluated, including the levels of alanine aminotransferase (ALT), aspartate aminotransferase (AST), bilirubin, and amylase.

A subset of patients with combined pathology received combined therapy with ursodeoxycholic acid and statins. Statistical data processing included comparative and correlation analysis.

Results and Discussion

In patients with chronic pancreatitis, disturbances in lipid metabolism were identified, manifested by increased levels of total cholesterol and triglycerides along with a decreased concentration of high-density lipoproteins (HDL).

In patients with metabolically associated fatty liver disease, changes in the lipid profile were more pronounced and were accompanied by an increase in atherogenic lipid fractions. The most significant lipid metabolism disorders were observed in patients with a combined course of chronic pancreatitis and metabolically associated fatty liver disease.

Correlation relationships were revealed between lipid metabolism indicators and clinical-biochemical characteristics, particularly with the levels of ALT, AST, bilirubin, and amylase.

Against the background of the combined use of ursodeoxycholic acid and statins, a tendency toward improvement in the lipid profile and a reduction in the severity of biochemical abnormalities was observed.

Conclusions

The combination of chronic pancreatitis and metabolically associated fatty liver disease is accompanied by more pronounced disturbances in lipid metabolism. Lipid profile indicators are closely interrelated with the clinical and biochemical characteristics of liver and pancreatic function. Combined therapy with ursodeoxycholic acid and statins is an effective approach for correcting dyslipidemia in this category of patients

References

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