

and mortality of patients with NAFLD and in the general population. Statins are considered as first-line drugs for treatment coronary artery disease (CAD).

**Aims and Methods:** The aim of this study is to investigate liver function during statin therapy of patients with CAD and NAFLD, associated with obesity, depending on percutaneous coronary intervention (PCI). The study included 59 patients with documented CAD and NAFLD aged 45-72 years. Patients were divided into groups: 1st group includes patients treated with PCI, 2nd group - with optimal medical therapy for 1 year. Patients with PCI were receiving higher doses of statins. Standard tests were carried out for all patients including tests for lipids, transaminases, alkaline phosphatase, gamma-glutamyltranspeptidase, glucose, uric acid, urea, creatinine.

**Results:** The lipid levels were nearly identical in both groups, but we noted that patients who had been treated with PCI had abnormal level of ALT ( $p=0,01$ ) and AST ( $p=0,04$ ). ALT and AST are elevated but are less than 3 times the upper limit of normal and did not require discontinuation of statin.

**Conclusion:** Patients with PCI had higher compliance with drug therapy. During the treatment of patients with CAD, NAFLD and obesity it is important to take into account the individual peculiarities of comorbid pathology to achieve high efficiency and safety of treatment. Medication adherence should be followed carefully by CAD patients treated with and without PCI.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

## METFORMIN THERAPY FOR PATIENTS WITH METABOLIC SYNDROM ASSOCIATED WITH CHRONIC PANCREATITIS

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**Key words:** metabolic syndrome, pancreatic steatosis

**Introduction:** Nowadays the problem of average increasing number of cases of people suffering from inveterate non communicable diseases is discussed much. Metabolic syndrome (MS) has already reached proportions of non communicable epidemic, "epidemic of XXI c." MS represents a combination of cardiovascular risk determinants such as obesity, insulin resistance and lipid abnormalities such as hypertriglyceridemia, increased free fatty acids, low high-density-cholesterol and hypertension. We can definitely call it a "civilization disease". Metabolic conditions giving rise to pancreatitis account for 5%-10% of cases. The causes include hypertriglyceridemia, diabetes mellitus, porphyria. In cases of metabolic pancreatitis, apart from the standard routine management of pancreatitis, careful management of the underlying metabolic abnormalities is of paramount importance. Evaluation of pancreatic steatosis should be considered for patients with pancreatitis associated with metabolic syndrome. Metformin is the drug of choice to relieve from the main symptoms of MS.

**Aims and Methods:** To determine the effects of metformin on the risk factors of metabolic syndrome associated with chronic pancreatitis. The study included 33 patients (10 men and 23 women) aged 38-78 years with MS, who had a concomitant diagnosis of chronic pancreatitis. Patients were divided into 2 groups: the first group ( $n=20$ ) took metformin at a dose of 500 mg thrice a day for 6 months, the second group ( $n=13$ ) didn't take metformin. All patients underwent a standard therapy of chronic pancreatitis. Both groups were given recommendations as to modification of their lifestyle: healthy food, physical activity, bad habits break. All patients performed ambulatory blood pressure monitoring, measured blood glucose, HbA1c, insulin resistance indices, lipid profile and anthropometric parameters (body mass index, waist circumference, the circumference of the hips and their ratio) before treatment and 6 months after.

**Results:** Patients with MS associated with chronic pancreatitis, who were treated with the

drug metformin, had more evident positive results of indices of insulin resistance, glycemia, glycosylated hemoglobin, decreased blood pressure. We noted a downward trend in total cholesterol, low-density lipoprotein cholesterol and triglycerides. Metformin had a positive effect on carbohydrate and lipid metabolism. Those patients had a more significantly decreased body mass index, OT, waist circumference, the circumference of the hips and their ratio, lose weight.

**Conclusion:** Group with chronic pancreatitis on the background of metabolic syndrome,

had more evident positive dynamics indices of insulin resistance, glycemia, glycosylated hemoglobin, decreased dyspeptic syndromes. It is reasonable to include metformin in the complex therapy of patients with MS associated with chronic pancreatitis. Use of metformin for patients with metabolic syndrome in combination with chronic pancreatitis can reduce symptoms of disease and improve quality of life.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

## CYTOPROTECTIVE EFFECT OF NOVEL 4-THIAZOLIDINONE DERIVATIVES AGAINST STRESS CONDITIONS IN SMALL INTESTINE OF RATS

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**Key words:** Stress, H<sub>2</sub>S, 4-thiazolidinone-based derivatives, small intestinal mucosa

**Introduction.** Stress affects the integrity of the intestinal barrier and increases its permeability, reduces mucosal blood flow due to catecholamines driven vasoconstriction, leading to hypoxia and nitroso-oxidative processes. The experimental data demonstrates that H<sub>2</sub>S can exert protective actions against injury induced by various factors. The purpose of this investigation was to explore the role of 4-thiazolidinone-based derivatives as a novel donors of H<sub>2</sub>S in promoting the resolution of inflammation in small intestine.

**Methods.** The experiment was performed on 40 white rats. Water-immobilization stress (WIS) during 5 h was used to induce GI damage. A series of 4-thiazolidinones (Les-5054 and Les-5055) were administered at a single dose 10 mg/kg per os 30 minutes before modeling WIS. The activity of NO-synthases, arginase, myeloperoxidase, the content of nitrite anion (NO<sub>2</sub><sup>-</sup>), L-arginine and MDA were determined in homogenates of small intestinal mucosa (SMI). The study was approved by local bioethics committee 16/03/2015 № 3.

**Results.** The activity of iNOS in WIS increased about 3 times (p<0,01), as well as the content of MDA for 44 % (p<0,01) and NO<sub>2</sub><sup>-</sup> more than

2 folds (p<0,01) as compared to the indices of the control group. Les-5054 on the background of WIS effect decrease activity of iNOS for 21 % (p<0,01) as well as content of MDA and NO<sub>2</sub><sup>-</sup> (p<0,01), 23 % and 27 % respectively) and increase the activity of cNOS for 48 % (p<0,01) compared with indices of stress group. Parameters of NO-synthase system in Les-5055-treated group showed the same tendency as under the effect of Les-5054.

**Conclusion.** In the present study, we investigated the effect of novel 4-thiazolidinone derivatives (compounds Les-5054 and Les-5055) on various intestinal events occurring in association with stress-induced intestinal damage. It was observed an intensification of lipid peroxidation, myeloperoxidase activity, accompanied by increase of iNOS activity, NO production and decrease of H<sub>2</sub>S content in rats with WIS group. In animals treated with compounds Les-5054 and Les-5055 the reduction of the activity of iNOS, myeloperoxidase, intensity of lipid peroxidation and increased generation of H<sub>2</sub>S were revealed.