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Efficacy of the herbal hepatoprotector in patients with coronary artery disease after PCI

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Abstract
Coronary artery disease (CAD) is leading due to disability and death of the working population, and successful its treatment is largely determined by maintaining adequate coronary blood flow, including through interventions, percutaneous interventions. This article describes the efficacy of the adding herbal hepatoprotector - Hepofresh 2 tablets 3 times a day on the framework of the standard therapy on some indicators of the functional state of the liver of patients with coronary heart disease with stable angina of III-IV FC, subjected to percutaneous intervention (PCI). And the results show that Hepofresh contributes to better tolerance of treatment, increases its effectiveness and prevent the development of side effects and various liver disorders in patients CAD after PCI.

Keywords: coronary artery disease, percutaneous intervention, aspirin, clopidogrel, statin

Introduction
Coronary heart disease (CHD) is leading due to disability and death of the working population, and successful its treatment is largely determined by maintaining adequate coronary blood flow, including through interventions, stenting of coronary arteries (CA) [1, 2, 3]. An increased risk of developing coronary heart disease and other manifestations of atherosclerotic vascular lesions is associated with an increase in blood cholesterol (cholesterol) [4] and low-density lipoprotein cholesterol (LDL-C) [5]. The treatment strategy is to control the main risk factors (cholesterol, glucose, arterial hypertension (AH) [6]. According to modern recommendations, patients with coronary heart disease should receive drugs that improve prognosis (antiplatelet, hypolipidemic, β-blockers, angiotensin-converting enzyme (ACE) inhibitors, calcium antagonists) [7]. The question of prescribing statins in real clinical practice is to choose the optimal statin in the optimal dose to maximize the benefit/risk ratio, especially the risk of hepatotoxicity [8, 9, 10]. Along with the undeniable positive effects of statins are side effects, and one of the most discussed issues in the framework of statin safety is night effects.
Purpose of the work is to study the effect of herbal hepatoprotector on some indicators of the functional state of the liver of patients with coronary heart disease with stable angina of III-IV FC, subjected to percutaneous intervention (PCI).

Material and Methods
The study included 50 patients (65% - men and 35% - women) CAD III and IV FC. The age of patients averaged 61.4±9.6 years. The duration of the disease ranged from 1 year to 7 years and averaged 6.2±1.2 years. Initially, after 3 and 6 months, lipids (cholesterol, HDL-C, LDL-C, and triglycerides (TG), total bilirubin (TB), the activity of alanineaminotransferase (ALT and AST), inflammation factors, platelet aggregation, ultrasound (ultrasound) analysis of the liver, electrocardiography were performed. According to the testimony, a planned coronary angiography was performed followed by implantation of DES stents. Patients were divided into 2 groups (I and II, 25 patients each). The treatment of coronary artery disease included antiplatelet agents (aspirin, 75-100 mg/day and clopidogrel 75 mg/day), β-blockers, ACE inhibitors, as indicated by nitrates. Hypolipidemic therapy included atorvastatin (20-40) mg/day or rosuvastatin (10-20 mg/day). Patients of group II received an additional hepatoprotector Hepofresh 2 tablets 3 times a day, 5-10 minutes before meals, during the first and fourth months of the study.

Results
The risk factors were studied, among which the most common were arterial hypertension (AH) (74.1%), dyslipidemia (hyperlipidemia (100%), smoking (25.8%), overweight (body mass index (BMI)> 27 (70%). A higher BMI, AH were more often determined in patients with coronary heart disease with FC IV CC. The patient's preoperative clinical situation is largely dependent on success of surgery: Finding the most unfavorable combination of metabolic RF associated with restenosis in overweight patients will help optimize secondary prevention and reduce the risk of lacunae after stenting. There is evidence showing a pathogenetic relationship between the neurohumoral activity of visceral adipose tissue, pro-inflammatory plasma activity, impaired carbohydrate metabolism, and degree of epicardial obesity with a risk of complications after stenting. Consideration of these factors will make it possible to choose more promising and rational regimens for complex drug and non-drug preoperative preparation before planned myocardial revascularization, depending on the initial values of RF restenosis in this category of patients. Treatment had a beneficial effect on the lipid spectrum. Atorvastatin and rosuvastatin had anti-inflammatory and lipid-lowering effects, i.e. statins affect important pathogenetic links in the development of atherosclerosis and ischemic heart disease [11, 12]. This action is expressed in a decrease in neurotransmitter synthesis. inflammation - CRP, and a positive effect on serum lipids. The effect of rosuvastatin was more significant. The pleiotropic (not associated with a decrease in cholesterol and cholesterol-

lowering) properties of the statins studied are already noted in the month of treatment [13, 14, 15], which possibly enhances and explains the rapid onset of the clinical effect when using these drugs against the background of stenting and standard treatment: a significant improvement in the condition of patients, reduction/use the disappearance of angina attacks, a sharp decrease in the amount of nitrates consumed, improving the quality of life. The obtained positive results are explained, first of all, by stabilization of the process, restoration of blood flow in the spacecraft after stenting, and prevention of its damage and the formation of thrombosis due to lipid-lowering and pleiotropic effects. Conducted double antiplatelet therapy (DAAT) (aspirin + clopidogrel) together with statins has an anti-inflammatory, antithrombotic and normalizing functional state of the endothelium. Statins restore impaired endothelial barrier function, suppress oxidative stress, leading to LDL modification; suppress aseptic inflammation arteries and enhance the vasodilating properties of arteries by reducing endothelial dysfunction, leading to a decrease in peripheral resistance of coronary arteries and increased myocardial perfusion [16, 17, 18]. The positive effects of statins on the functional state of the endothelium, hemostasis and inflammation explains the rapidity of the onset of the clinical effect, the mismatch between the severity of this effect and changes in lipid levels, as well as a decrease in the risk of coronary events with the use of statins in people without elevated levels of LDL-C [19, 20]. The anti-inflammatory effect of statins began to appear already in the first weeks [21, 22]. In our patients who, after stenting, received atorvastatin or rosuvastatin in generally accepted doses against basic therapy (antiplatelet agents, beta-blockers, ACE inhibitors, calcium antagonists) for 3 months also studied the content of bilirubin, transaminase activity, conducted an ultrasound study of the liver. As mentioned above, in all patients, changes in the lipid profile characteristic of atherogenic dyslipidemia were detected. The development of atherosclerotic lesions of the vascular wall is a complex multi-stage process [23, 24, 25]. It has now been established that even before endothelial damage, blood components begin to interact with the endothelial surface. In particular, (LDL cholesterol and their active constituent apo-lipoproteins are able to penetrate into the subendothelial space and, subject to oxidation, act on endothelial cells [26]. In this regard, the initial stage Atherosclerosis is characterized as a response to the retention of atherogenic particles. The use of statins led to an improvement in the lipid profile (normalization of cholesterol, cholesterol-cholesterol-lowering drugs, cholesterol-free anti-inflammatory drugs, and TG). Patients tolerated DAAT well, and a high sensitivity of patients to it was revealed [27, 28]. No hemorrhagic complications were observed during the observation period. When combined, the lipid-lowering effectiveness of atorvastatin and rosuvastatin, as well as the antiplatelet effect of aspirin and clopidogrel, remained at a sufficient level, and their anti-inflammatory effect was noted [29, 30, 31]. Combination of these drugs did not lead to the development of severe disorders in the liver, which was confirmed by ALT, AST and OB. 54% of the examined showed atherogenic dyslipidemia with changes in the studied indicators of the functional state liver similar to those with non-alcoholic fat calamus marsh, immortelle, highlander serpentine, chicory, licorice naked, corn stigmas, yarrow. Such a successful composition provides the biological and pharmacological activity of this drug, which has anti-inflammatory, detoxification, antispasmodic and choleretic effect. In our opinion, it can affect some pathogenetic links in the development and progression of atherosclerosis and coronary heart disease [32, 33]. Many years of widespread experience with the use of statins, which were introduced into clinical practice in 1986, and huge The number of studies performed allowed us to accumulate evidence and show the safety of their use, including in patients with liver diseases, to create practical recommendations for their use. According to the European Atherosclerosis Society (2018), US Food and Drug Administration (2016) and the Russian recommendations VI review (Diagnosis and correction of lipid metabolism disorders for the prevention and treatment of atherosclerosis Russian recommendations VI review Diagnosis and correction of lipid metabolism disorders for the prevention and treatment of atherosclerosis, 2017) it is necessary to reasonably evaluate hepatic function if there are symptoms indicative of hepatotoxicity (unusual tiredness or weakness, loss of appetite, abdominal pain, dark urine staining or yellowing of the skin or sclera). If the patient rises ALT> 3 upper normal limits (VGN) (or lower in combination with a new increase in OB), statins should be discontinued. Other potential etiologies should be considered before suggesting that elevated liver enzymes are caused by statins. A moderate isolated increase in ALT in asymptomatic patients has no clinical significance. In patients with a moderate increase in ALT due to steatosis or non-alcoholic fatty liver disease, statin therapy does not worsen liver disease. With an increase in ALT/AST: if the level of enzymes does not exceed 3 VGN, continue treatment; re-check the level of enzymes after 4-6 weeks. If level> 3 VGN: reception statins to stop or reduce the dose of drugs by re-checking the level of enzymes after 4-6 weeks. After the ALT level returns to normal, return to the previous treatment regimen. If ALT remains elevated, check for other possible causes. Clinically obvious lesion liver therapy with statins is very rare (≤2 per 1 million patients-years) and is probably a class effect of statins. [2].

Conclusion

An adequate selection of drugs taking into account the individual characteristics of patients, as well as the use of herbal collection of Hepafresh contributes to better tolerance of treatment, increases its effectiveness and helps prevent the development of side effects and various liver disorders in patients CHD after endovascular intervention.

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