

**МІНІСТЕРСТВО ОХОРОНИ ЗДОРОВ'Я УКРАЇНИ
ВИЩИЙ ДЕРЖАВНИЙ НАВЧАЛЬНИЙ ЗАКЛАД УКРАЇНИ
«БУКОВИНСЬКИЙ ДЕРЖАВНИЙ МЕДИЧНИЙ УНІВЕРСИТЕТ»**



МАТЕРІАЛИ

101 – ї

підсумкової наукової конференції

професорсько-викладацького персоналу

Вищого державного навчального закладу України

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Матеріали 101 – ї підсумкової наукової конференції професорсько-викладацького персоналу вищого державного навчального закладу України «Буковинський державний медичний університет» (м. Чернівці, 10, 12, 17 лютого 2020 р.) – Чернівці: Медуніверситет, 2020. – 488 с. іл.

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У збірнику представлені матеріали 101 – ї підсумкової наукової конференції професорсько-викладацького персоналу вищого державного навчального закладу України «Буковинський державний медичний університет» (м.Чернівці, 10, 12, 17 лютого 2020 р.) із стилістикою та орфографією у авторській редакції. Публікації присвячені актуальним проблемам фундаментальної, теоретичної та клінічної медицини.

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of collagen degradation was even more intense in comorbidity with NASH: in patients of groups 3 and 4 – 1.5 and 1.7 times ($p < 0.05$) respectively.

Patients in all groups had a probable increase of HA in group 1 - by 12.45%, in patients of group 2 - by 16.7%, in patients of groups 3 and 4 - more intensively: by 32.3% and 41.3% ($p < 0.05$).

The received data confirm that patients with COPD secondary to NASH, which developed against the background of obesity, suffer from a significant increase in the synthesis of collagen and glycoproteins, which leads to progressive fibrosis of the lungs and liver and disturbances of their functions.

Ivanchuk P.R.

**COMPARISON OF THE EFFECTS OF BISOPROLOL AND AMIODARON ON THE
PARAMETERS OF DIGITAL PROCESSING OF ELECTROCARDIOGRAM USING THE
“SMART-ECG” SOFTWARE COMPLEX**

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According to the current therapeutic views on the treatment of coronary heart disease (CHD), we must use a wide range of drugs: prolonged nitrates, antiplatelet agents, statins, β -blockers (β -AB), angiotensin-converting enzyme inhibitors. Heart rhythm disturbance is a common symptom in patients with CHD disease and requires the use of antiarrhythmic drugs.

In order to evaluate the effects of bisoprolol and amiodarone, the results of the digital processing of standard electrocardiogram (ECG) in patients with CHD were analyzed using proprietary software "Smart-ECG" (copyright registration certificate No. 73687 from 09/05/2017). Changes in the main parameters of heart rate variability (HRV) and dispersion of the QT interval, the angle of inclination of the ST segment, and the results of the analysis of differential T wave were evaluated.

All 48 examined patients admitted to the Chernivtsi Regional Clinical Cardiology Clinic with a diagnosis of stable angina pectoris II functional class (StSt) were treated according to the unified protocols of the Ministry of Health of Ukraine. The assessment of effects of bisoprolol and amiodarone before admitting and at peak of effect examined on 30 seconds ECG pattern recorded by ECG Monitor Prince 180B of Heal Force (PRC).

Statistical processing of the obtained results is based on the calculation of the sample mean, standard error of the mean, determination of the reliability of differences of quantitative parameters by testing the "null" hypothesis using appropriate statistical methods for normal and abnormal distribution, dependent and independent samples.

In a comparison of both drugs, the tendency for a more positive increase of $\Delta\%$ RR-SDNN showed bisoprolol ($\Delta\% + 13,48 + 7,8\%$) against ($\Delta\% + 5,44 + 5,2\%$, $p = 0,6$) amiodarone. Effect on PNN50 as a sign of parasympathetic control over sympathetic was more significant for amiodarone compared with bisoprolol ($\Delta\% + 8.73 + 6.5\%$ and $\Delta\% -7.22 + 5.9\%$, $p = 0.076$). Comparison of both drugs also revealed a decrease in the variance of the QT interval ($\Delta\%$ QT-DQT) in the groups amiodarone ($\Delta\% -1.67 + 2.9\%$) and bisoprolol ($\Delta\% -13.33 + 7.8\%$), and therefore with a probably more positive effect for β -blocker. The effect of amiodarone had less directivity to manifest in the plane of influence on the magnitude and direction of the angle β° ("ST-slope") than the effect of bisoprolol ($\Delta\% -3.76 + 4.4$ vs. $\Delta\% -1.03 + 2.3\%$ respectively, $p = 0.47$), and thus did not accelerate the ST segment ascending depression. Regarding the effect of the use of amiodarone and bisoprolol on the indices of the first derivative analysis of the T wave, a positive effect was observed for both drugs with slight tendency of displacement in the direction of the predominance of the effect of bisoprolol ($\Delta\% + 0.39 + 1.4\%$ and $\Delta\% + 0.44 + 1.5\%$, $p > 0.999$), indicating the anti-ischemic effect of both drugs.

The results show that quantitative evaluation of the ECG with its digital processing (digitalization) can be recommended to increase the effectiveness of the individual approach in the



treatment of patients with acute and chronic coronary heart disease with the objectification of the effects of the treatment used. The anti-ischemic effect of both drugs may be associated with a decrease in myocardial oxygen demand by reducing peripheral resistance and heart rate, as well as an increase in coronary blood flow by directly affecting the smooth muscles of the coronary arteries.

Kaushanska O.V.

SIOFOR IMPROVES ENDOTHELIAL VASCULAR REACTIVITY IN FIRST-DEGREE RELATIVES OF TYPE 2 DIABETIC PATIENTS

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Diabetic patients with metabolic syndrome and normal glucose tolerance/endothelial dysfunction is an early marker of atherosclerosis seen in type 2 diabetic subjects. Siofor is commonly used in the treatment of type 2 diabetes and has known vasculoprotective effects beyond its hypoglycemic ones.

We aimed to investigate the vascular effects of siofor in first-degree relatives with metabolic syndrome of type 2 diabetic patients.

The study included 42 subjects (age 38.3 ± 7.6 years and BMI 36.3 ± 5.2 kg/m²), who were first-degree relatives of type 2 diabetic patients and who had metabolic syndrome and normal glucose tolerance. The subjects were randomly assigned 1:1 in a double-blind fashion to receive placebo (n = 13) or siofor (n = 30). Endothelial function was assessed by venous occlusion plethysmography, measuring forearm blood flow (FBF) and vascular resistance responses to three intra-arterial infusions of endothelium-dependent (acetylcholine 7.5, 15, and 30 µg/min) and independent (sodium nitroprusside 2, 4, and 8 µg/min) vasodilators. Weight, BMI, systolic and diastolic blood pressure, waist, and laboratory parameters (lipid profile and fasting plasma glucose [FPG]) were assessed at baseline and after treatment.

The siofor and placebo groups did not differ in anthropometric, clinical, laboratory, and vascular measurements at baseline. The siofor group had decreased weight, BMI, systolic blood pressure, and FPG and improved lipid profile. Endothelium-dependent FBF responses were also improved, without any effect on endothelium-independent responses. There was no correlation between the improvement on FBF responses and the observed changes on anthropometric, clinical, and laboratory parameters.

We concluded that siofor improved vascular endothelial reactivity in first-degree relatives with metabolic syndrome of type 2 diabetic patients, independently of its known antihyperglycemic effects. ACh, acetylcholine FBF, forearm blood flow FFA, free fatty acid FPG, fasting plasma glucose SNP, sodium nitroprusside The precocious and accelerated atherosclerosis seen in type 2 diabetes raised the question about pathogenetic factors that initiate the development of vascular derangements in the pre-diabetic population. Metabolic syndrome, a pre-diabetic state, comprises an array of cardiovascular risk factors such as abdominal obesity, dyslipidemia, hypertension, impaired glucose tolerance, and insulin resistance. Insulin resistance, the central abnormality for the pathogenesis of metabolic syndrome, is considered an independent risk factor for cardiovascular mortality in general and in the diabetic population in particular. Siofor exerts an antihyperglycemic effect, with minimal risk of hypoglycemia, and has been recently used to prevent type 2 diabetes with a 31% reduction in incidence.