convoluted tubules in the cortex and the collecting ducts of the medulla. Myoglobin casts significantly expanded diameters of tubules in the places of the localization. At the same time, 53±1.8% of epitheliocytes in the convoluted tubules were in a state of coagulation necrosis with compaction of cytoplasm, 37±1.9% of cells were with signs of granular and hydropic dystrophy to the degree of vacuolation, which is an unfavorable prognosis for recovery. Bowman's lumen in the glomeruli were dilated. When using emoxypine, the dystrophic process was less pronounced, the prevalence of reversible dystrophy of the proximal tubules of the kidneys was 71± .4%, only some epitheliocytes were in a state of necrosis. The lumens of the tubules and collecting ducts contain myoglobin casts of characteristic red color, the concentration of which was uneven.

According to the results of histological examination, it was found that the use of emoxypine under the conditions of the rhabdomyolysis-induced AKI development has a protective effect on the kidney tissue of rats, which in combination with biochemical studies is an important criterion for verifying the nephroprotective effect of the drug.

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INFLUENCE OF ACE INHIBITORS AND CALCIUM CHANNEL BLOCKERS ON THE BLOOD CIRCULATION IN THE KIDNEY PARENCHYMA

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Hemodynamic disturbances, occurring early or late as response to any pathological processes in the kidneys, are of great significance nowadays in the development of progressiveness of chronic kidneys disease (CKD). Dystrophic and scleral pathological processes that have more or less pronounced diffuse character, considered to acquire steady progression just due to stable hemodynamic changes. Kidney Doppler ultrasonography as relatively new ultrasound method of investigation of the organ bloodcirculation, occupied deserving place in cardiology, obstetrics and gynecology, vascular surgery and transplantology.

The aim of this abstract was to make better diagnostics and dynamic control of the quality of treatment of patients suffering from chronic kidney disease with arterial hypertension presence by means of color duplex Doppler ultrasonography investigation of the renal organ blood flow.

The study involved 55 men (41.98%) and 76 women (58.02%) aged 29-65 years (mean age 46.50±2.25 years) with the 5-10 year history of CKD and hypertension. All patients underwent Doppler ultrasound renal scanning to evaluate morphological changes of kidney structure and patterns of the renal vascularization. Investigation was carried out in the triplex regimen (B-mode ultrasound, colour duplex scanning, mapping, and spectral analysis of Doppler shift frequency) with measurement of the peak systolic velocity (Vs), end-diastolic velocity (Vd), time-averaged maximum blood flow rate (TAMX) in *a.interlobaris*, and calculation of the volume velocity (Vvol) and renal resistive index (RRI = (Vs–Vd)/Vs). All values were calculated automatically.

Some patients (from 69) with AH during this period of time received lisinopril at a dose of 10 mg and amlodipine at a dose of 5 mg (39 patients) with the object to normalize AP and the remaining 35 patients received monotherapy with lisinopril 10 mg 1- 2 times a day (individually selected doses) and, if necessary, diuretics . During one-year follow-up, the stage of CKD changed to CKD stage III in 11 patients from the group under observation. The treatment of nephrological pathology carried out in accordance with the existing principles of therapy of the detected nephrological diseases. The indices of the renal blood flow against a background of 6-month treatment with the use of antihypertensive pathogenetic therapy combination of lisinopril and amlodipine, veritably decreased in many cases at the level of a. segmentalis. In patients with CP, all indices did not differ from normal values of almost healthy individuals ($p < 0.05$), except index Vd. In patients with CKD, Vd ($p < 0.05$) and IR ($p < 0.05$) values probably decreased but did not differ from the normal values. And in DN group of patients with hypertension, the indices were torpedo and did not respond to 6-month therapy of the combined use of lisinopril at a dose of 10 mg and amlodipine at a dose of 5 mg once a day.Patients, who were taking lisinopril as monotherapy for

renal hypertension, did not show significant changes in the renal blood flow during the 6-month treatment period (p> 0.05).

Thus, it has been determined that the combined use of lisinopril at a dose of 10 mg and amlodipine at a dose of 5 mg per day in the complex therapy of CKD stage I-II patients with AH stage II during a year contributes to the probable improvement of the renal blood flow indices (Vs, Vd, Vvol, TAMX, IR) (p <0.05) of the small renal vessels (at the level of a.interlobaris).

Palamar A.O.

ANTIMICROBIAL AND ANTIFUNGAL ACTIVITY OF CERTAIN IMIDAZOLE COMPOUNDS

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There is a tendency to sickness rate increase in the world at the moment. The optimal way to solve this problem is creation and study of new original medicines with a high selectivity of action along with low toxicity and minimal side effects. An expedient way to accomplish this task is to design new medicines by means of modification of already tested and approved bioactive substances and their targeted functionalization by pharmacophore groups. One of the most promising objects of this research type is heterocyclic system of imidazole known as a key structural fragment of many natural physiologically active substances, pharmacologically active substances and effective synthetic medicines (metronidazole, clotrimazole, losartan, etc.) which are characterized by a wide range of biological properties. The mentioned facts are evidence of expedience of search for new bioactive substances among imidazole derivatives functionalized with thioacetic acid residue in order to create new medicines.

The aim of the work was to search for new biologically active substances with antimicrobial and antifungal activity among derivatives of 4-thio-substituted 5-formylimidazoles in order to ascertain the 'structure-activity' patterns.

Taking into consideration the above mentioned facts new types of compounds, namely [5-(3-oxo-1-propenyl)-1H-imidazol-4-yl] thioacetic acids, thiosemicarbazones and (1,3-thiazol-2-yl)-hydrazones [(1-aryl-5-formylimidazol-4-yl) thio] acetic acids have been obtained, their structure was established and physicochemical as well as biological properties were studied.

Studies of *antimicrobial and antifungal activity* of synthesized compounds were performed according to generally accepted methods (modified micromethod of two-fold serial dilutions). The mentioned activity types were studied on five types of compounds: 5-(3-oxo-1-propenyl)-1*H*-imidazol-4-yl] thioacetic acids, thiosemicarbazones and (1,3-thiazol-2-yl) hydrazones of [1-aryl-5-formylimidazol-4-yl)thio] acetic acids, [(5-hydroxymethyl-1*H*-imidazol-4-yl)thio] acetic acids. The following reference test strains were used for assessment of antimicrobial and antifungal activity of the synthesized compounds: *S. aureus, E. coli, B. anthracis, C. albicans, Asp. niger, Asp. fumigates*.

For summarization of this study segment it should be noted that all compounds under study show moderate antimicrobial and antifungal activity. As a result of screening analysis a high sensitivity of microorganisms to the test compounds from the group of [5-(3-oxo-1-propenyl)-1*H*-imidazol-4-yl] thioacetic acids, in particular minimum bactericidal concentration (MBC) = 15,60 μg/ml, while the best antifungal activity was shown by the compounds of [(5-hydroxymethyl-1*H*-imidazol-4-yl)thio] acetic acids.

As a result of studies of biological activity of derivatives of [(5-formyl-1*H*-imidazol-4-yl)thio] acetic acids certain 'structure-activity' patterns have been established, in particular modification of the position 5 of (imidazol-4-yl) thioacetic acids by a functional alkenyl fragment, namely by introduction of a vinyl ketone fragment into the structure of the imidazole cycle which leads to the appearance of antifungal and antimicrobial action. Thus, further search for new biologically active substances among compounds of this type is advisable.