values of the fourth parameter of the Stokes vector of the digital microscopic image of the object of study, samples of certain extreme (characteristic) values were formed the maximum crystallization level of the optically anisotropic component of the biological preparation. The structure of the study of the polycrystalline component of rat blood in the differential diagnosis of the severity of the septic state using digital. Stokes polarimetric microscopy consists of the following experimental and analytical steps: A. Formed representative sets of samples of polycrystalline blood films of the following groups of rats: 1. Intact rats - "control" group 1 (39 samples) 2. Sick rats (sepsis - light form) - "research" group 2: a) duration 12 hours. (39 samples) - research subgroup 2.1; b) duration 48 hours. (39 samples) - "research" subgroup 2.2. 3. Sick rats (sepsis - middle form) - "research" group 3:a) duration 12 hours. (39 samples) - research subgroup 3.1; b) duration 48 hours. (39 samples) - "research" subgroup 3.2. 4. Sick rats (sepsis - severe form) - "research" group 4: a) duration 12 hours. (39 samples) - research subgroup 4.1; b) duration 48 hours. (39 samples) - "research" subgroup 4.2. A structural-logical scheme and design of a phase-metric study of microscopic images of blood films of laboratory rats has been developed. A model analysis of the polycrystalline structure of blood films of laboratory rats is proposed. The optical arrangement of the system of phasometric mapping of microscopic images of blood films of laboratory rats was experimentally tested. An album of maps of the distribution of phase magnitude of the points of the digital microscopic image of blood films of rats from control group 1 and research groups 2–4 with different severity of septic pathology was obtained. The statistical significance of the differentiation of phase maps of microscopic images of polycrystalline blood films of rats from control group 1 and research groups 2–4 with different severity of septic pathology was determined. The most diagnostic-sensitive statistical criteria for differentiating phase maps of the microscopic image of polycrystalline blood films of rats from control group 1 and research groups 2 - 4 with different septic pathology severity were found. The operational characteristics of the diagnostic strength of the method of polarization-phase microscopy of polycrystalline blood films of rats of the control and experimental groups are determined.

Stepan V.T.

EFFECT OF ORAL PHYTOGEL «QUERTULIN» APPLICATION IN CASE OF BIOCHEMICAL INDICATORS OF RENAL CONDITION IN RATS WITH EXPERIMENTAL DYSBIOTIC SYNDROME

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Phytogel "Quertulin" contains the bioflavonoid quercetin, prebiotic inulin and calcium citrate formulated into CMC-Na gel with mint leaf extract. It has antioxidant, membrane-protective activity (due to quercetin) and antidisbiotic action (due to inulin).

The objective of our research is to study the effect of oral phytogel «Quertulin» application in case of biochemical indicators of renal condition in rats with experimental dysbiotic syndrome (EDS). Kidneys conditions were assessed by biochemical markers such as elastase activity, malondialdehyde (MDA) quantity; inflammation process markers: catalase activity, prooxidant-antioxidant index (PAI); antioxidant protection markers, urease activity; nonspecific resistance marker. We applied the phytogel "Quertulin", lincomycin in ampoules of 2 ml of 30% solution, adrenaline hydrotartrate in ampoules 1 ml of 0.18% solution. EDS was reproduced in rats by giving them the lincomycin with drinking water at a dose of 60 mg/kg within the first five days of the experiment. In order to enhance the degree of dysbiosis in rats, starting from the 7^{th} day of the experiment, oral applications of the gel containing adrenaline (0.18 mg/ml) were made at a dose of 1 ml/kg for 3 days. 21 Wistar rats (females, 11 months) were used in the experiment, divided into three equal groups: 1^{st} – control group, 2^{nd} – the group with reproduced dysbiosis associated with adrenaline stress and 3^{rd} – the group with experimental dysbiotic syndrome (lincomycin + adrenaline). 3^{rd} group received oral applications of phytogel "Quertulin" at a dose 1 ml/kg for 3 days, starting from the 7th day of the experiment. On 10^{th} day rats were euthanized under thiopental anesthesia by total cardiac bleeding. The activity of urease and lysozyme was determined in blood

serum and in tissue homogenates, the degree of dysbiosis was calculated according to Levitsky. The activity of elastase, catalase, and MDA content also were determined in the homogenates of the kidneys. PAI was calculated by MDA and catalase activity ratio. The results of the experiments were subjected to standard statistical processing according to the recommendations given in the literature devoted to the question. According to the results, the level of urease increases in the liver of rats with experimental dysbiosis 2.3 times, in the gastric mucosa 2 times and in the serum 2.3 times, which indicates a significant increase in bacterial contamination of these tissues. The lysozyme activity in these tissues, in contrast, is reduced in rats with dysbiosis: in the liver by 42%, in the stomach by 36% and in serum by 32%, which indicates a significant decrease of nonspecific immunity level. The dysbiosis degree in the liver of rats increases 4 times, in the stomach 3.1 times and in the serum 3.9 times. The obtained data indicate the development of generalized dysbiosis or dysbiotic syndrome. The phytogel "Quertulin" oral application to a certain extent normalizes the urease, lysozyme level. However, the degree of dysbiosis is significantly reduced, it doesn't return to the control level. This may be due to insufficient treatment (only 3 days). After lincomycin and adrenaline injection, in rats urease activity increases by 76%, lysozyme activity decreases by 33%, which increases the degree of dysbiosis by 2.6 times. The phytogel "Quertulin" oral applications reduce the urease activity by 20% ($p>0,3$), increase lysozyme activity by 18,5% ($p>0,05$) and reduce the degree of dysbiosis by 33% ($p>0,05$). Dysbiotic process in kidneys develops less than in other organs, possibly due to high activity level of the antimicrobial enzyme lysozyme, level of which in kidneys is higher than in all other organs and tissues. As a result of dysbiosis, level of biochemical inflammation markers increases significantly in kidneys: elastase by 79.5% and MDA by 18%. In rats with dysbiosis, both catalase activity and PAI index were significantly reduced by 6% and by 21% respectively. In conclusion, according to obtained data, it can be stated, that on the condition of experimental dysbiotic syndrome in kidneys an inflammatory-dystrophic process develops, the level of which can be significantly reduced by oral application of the antidisbiotic gel "Quertulin".

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NON-SPECIFIC HOST RESISTANCE IN ACUTE TRAUMA

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Trauma is one of the leading causes of morbidity and hospital mortality. The term "traumatic illness" (TI), as widely accepted, means a complex phased pathological process that develops in various traumatic injuries. Pathogenesis of this disease includes violations of homeostasis, general and local adaptation processes, and clinical manifestations depending on the nature, number and location of injuries, etc.

To find out changes in the humoral immune system of victims with injuries of the musculoskeletal system of varying severity.

The study involved 52 patients with traumatic illness, aged 18-69 years (37.91±4.28). The control group consisted of 16 patients who underwent planned surgical interventions not related to pathology of the musculoskeletal system (uncomplicated inguinal herniotomy, venectomy, etc.). Among the contingent of respondents, there were 32 (61.5%) male patients, and 20 (38.5%) female patients. Analysis of non-specific host resistance parameters was performed by determining 0-lymphocytes, natural killers (CD16+), phagocytic activity (FA) and phagocytic number / index (FI), NST and stimulated NST tests, natural antibody titer, complement activity, and a number of integrated indicators.

The obtained data indicate the presence of various disorders of non-specific resistance on all indicators except the stimulated phagocytosis index. The most probable deviations compared to the control were observed in the relative number of 0-lymphocytes (positive variation 39.78%, IInd degree of immune disorders), phagocytic activity (negative deviation -14.05%, Ist degree of immune disorders), stimulated NST test (negative deviation -11.73%, Ist degree of immune