recommended dosage with the manufacturer's handbook, accuracy was assessed. Just 4 out of 35 cases had doctors administer the right dosage in accordance with the instructions, compared to 18 out of 35 cases where the AI did so. To compare the two modalities, a paired analysis (McNemar's test) was conducted. In 4 cases, the doctor and AI administered the appropriate dosage. In 14 (40.0%) occasions, the AI was correct and the doctor was mistaken. In every case, the doctor was correct, and the AI was never incorrect. Neither the AI nor the doctor followed the strict manufacturer recommendations in 17 (48.6%) of the cases. The chi-square value was 12,07 (p=0,0005). It suggests a statistically significant difference in performance. The average time for the AI to analyse the clinical data and provide a prescription was 1 minute 49 seconds. A relatively low 11.4% of rate was attained by physicians. In 51.4% of the cases AI model accurately indicated the adjusted dose, demonstrating superior performance. However, both were incorrect in 48.6% of cases, showing that clinical judgements.

Conclusions. The use of DeepSeek and other large language models could greatly enhance antibiotic stewardship. Although the AI model did better than doctors in following manufacturer instructions (51.4% vs. 11.4%), its failure rate of 48.6% indicates that it is not yet dependable enough to operate on its own.

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PRODUCTION OF NITRIC OXIDE UNDER ADMINISTRATION OF NO-SYNTHASE MODULATORS IN RATS WITH PERITONITIS

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Relevance. The effects of altering NO synthase (NOS) have currently no interventions in treatment regimens for peritonitis, and the role of NO in pathophysiology of this illness is not understood. The role that NO generated by the various constitutive and inducible types of NOS plays a significant pathogenetic element of peritonitis in the emergence of nitrosative stress.

Target. To study the production of nitric oxide under administration of NOS modulators in rats with peritonitis.

Research methods. Five equal series of injections were given intraperitoneally to the experimental animals at a rate of 0.6 milliliters per 100 grammes of body weight: following the first series (control) of 0.85% sodium chloride solution and the second to fifth series of 15% faecal suspension (peritonitis), 0.5 ml of each of the following was given intramuscularly. The first two series contain a 0.85% sodium chloride solution; the third series has L-arginine, 300 mg/kg (Sigma, USA), which is the NOS substrate; the fourth series contains aminoguanidine, 15 mg/kg (Sigma, USA), which is an inhibitor of the inducible isoform of NOS (iNOS); and the sixth series contains L-arginine. To find the amount of stable NO metabolites – nitrites/nitrates (NOx), blood was drawn from three subgroups of rats in each of the five series after they had been isolated for half a day (n=6), a day (n=6), and three days (n=6). As a method for reproducing acute peritonitis (EP), a model was chosen with the introduction of a fecal suspension into the abdominal cavity of rats according to the modified method of Lazarenko V.A. et al. (2008) [1].

In order to determine the concentration of stable NO metabolites – nitrites/nitrates (NOx) in the PC of rats with EP and the introduction of modulators of the «L-arginine-NO» pathway: NOS substrate – L-arginine and inhibitor of the inducible isoform of NOS – aminoguanidine, 1 ml of the sample was mixed with 1 ml of 3% trichloroacetic acid solution diluted in 1 ml of bidistilled water, then centrifuged (3000 rpm, 10 minutes) and 7-8 cadmium granules were added to 1 ml of the supernatant; the samples were incubated at room temperature for 1 day, after which 0.5 ml of Griess reagent was added to 1 ml of supernatant and after 15 minutes the optical density of the solution was measured on a SOLAR PV 1251C spectrophotometer (Belarus) at λ=540 nm against the control sample [2]. Statistical analysis was performed using Statistica 10.0 for Windows (StatSoft Inc., USA) using the nonparametric Kruskal-Wallis test and post hoc comparisons.

Results and their discussion. The development of EP in rats was characterized by an increase in the NOx content in the blood which indicates a significant increase in NO production induced by the NOS isoform after stimulation with bacterial antigens and proinflammatory cytokines. Combined administration led to changes in the content of stable NO metabolites in blood – nitrites/nitrates (NO_x). The study of NOS activity in rats with EP and the introduction of a combined L-arg and AG revealed the most significant decrease in the level of stable NO metabolites – nitrites/nitrates (NO_x) in blood at all studied times, compared with the values in animals with peritonitis without their introduction or with isolated administration of L-arg and AG. This resulted in decreased NO production and reduction in $ONOO^-$ formation, the severity of nitrosative stress, and its damaging effects. The NO_x content in rat blood after one day was 1.3 times higher than after half a day ($p<0.05$), and after three days it was 1.5 times lower than after half a day ($p<0.05$).

Conclusions. Thus, the development of EP in rats with the combined administration was characterized by the most significant decrease in nitrite/nitrate levels, indicating a decrease in the NO production, activity of nitrosative stress, compared with the results in rats with peritonitis without their administration or with their isolated use. It is assumed that the decrease in the severity of nitrosative stress

may be due to the effect of competitive inhibition of iNOS by AG with a decrease in the formation of peroxynitrite ($ONOO^-$) and proinflammatory cytokines, as well as an increase in bioavailability and a reduction in the deficiency of the NOS substrate L-arginine.

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THE EFFECT OF HYPERBARIC OXYGENATION ON NEUROPSYCHIATRIC STATE OF PATIENTS WITH HYPERTENSION AND OBSTRUCTIVE SLEEP APNEA

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Relevance. Arterial hypertension (AH), commonly known is a widespread condition affecting 1.4 billion adults worldwide which has become one of the most common leading cause of many cardiovascular diseases. Despite modern medical advances, hypertension control remains a serious public health problem. It frequently occurs alongside obstructive sleep apnea (OSA), forming a complex interplay that exacerbates cardiovascular risks and impairs overall health [1].

Hyperbaric oxygen (HBO) therapy is aimed at reducing general and local hypoxia. The positive effects of HBO in the treatment of hypertension are well known, regulating the autonomic nervous system and improving blood gas composition [2]. However, the effect of HBO on the neuropsychiatric state (NPS) of patients with AH and OSA has not been fully studied [3].

Target. To study the effect of HBO on well-being, activity, and mood in patients with hypertension and obstructive sleep apnea syndrome.

Research methods. The retrospective study was conducted at Grodno City Clinical Hospital No. 2 (Belarus). This study includes a total of 45 patients with AH and OSA. Patients receiving a combined antihypertensive therapy constituted the comparison group (n=14). Another group of patients also additional received eight HBO sessions (HBO group, n=31). The groups were homogeneous in terms of gender (p=0.82) and age (p=0.47). For each patient blood pressure (BP) and heart rate were measured. OSA was assessed using the SOMNOchek micro (Loewenstein Medical, Germany), and patients were divided into groups: mild (AHI less than 25) and severe sleep apnea (AHI more than 25). The Wellbeing – Activity – Mood (WAM)