ISIC 2018

Kharkiv Ukraine

ABSTRACT BOOK

Conclusion. Efficiency and rationality underlies the diagnosis of pre-pathological and pathological changes in the metabolism of athletes. Individual control of the physiological state and adjustment of the athletes load requires a special methodical and organizational approach using laboratory markers for a differentiated assessment of the physical performance of all body systems.

Shaposhnyk V., Adetunji O., Zavada O.

INVESTIGATION OF PERIPHERAL ANALGESIC ACTION OF MELOXICAM AND ITS COMPOSITION WITH CAFFEINE

Kharkiv national medical university
Department of Medical and Bioorganic Chemistry
Kharkiv, Ukraine

Research advisor: prof. Syrova G.O.

Introduction. Non-steroidal anti-inflammatory drugs (NSAIDs) and non-narcotic analgesics (NNA) are widely used for the treatment of inflammation and pain syndromes. They have a number of disadvantages and side effects. The analysis of scientific literature has shown that pain treatment by polycomponent compositions are more effective than monopreparations. Therefore, the development of new effective domestic multicomponent drugs with a minimum number of side effects is a very actual question. It is known that caffeine improves the analgesic effect of NNA. The mechanism of analgesic effects potentiation is associated with an improvement of the NNA bioavailability in the combination with caffeine, and with the effect of caffeine on adenosine receptors (“purine analgesia”).

Matherials and methods. The aim of our work was the experimental investigation of the peripheral analgesic activity of meloxicam, caffeine and their pharmacological composition. An experimental study of analgesic activity was conducted on laboratory animals – mature rats. The peripheral analgesic action was studied by the changes in nociceptive reactions of rats. The comparative characteristic of the analgesic action of meloxicam, caffeine and their pharmacological composition was studied with acetic acid-induced abdominal writhing test. The mechanism of pathology development by acetic acid activates the calicreatin kinin system, prostaglandins, biogenic amines, leukotrienes, which are endogenous inflammatory mediators and contribute to the development of the abdominal muscle spasm, accompanied by the retraction of the hind paws and the flexing of the back. Writhes were caused by a single intraperitoneal injection of 0.6 % acetic acid solution (1 ml per 100 g of animal). The investigated drugs, their composition, and 3 % starch solution were injected 1 hour before the algogen introduction. Animals were injected with acetic acid. Then, the number of writhes was counted for 20 minutes. Animals were divided into 5 groups of 6 animals in each. 3% starch mucus (2 ml per 200 g of rat) was injected via gastric tube to intact animals of the first group. Experimental drugs and their composition were administrated to animals of groups 2-5 once via

gastric tube: animals of the second group - meloxicam (0.6 mg per 1 kg of animal weight), third one - (0.6 mg/kg of animal weight), fourth one - the composition of meloxicam (0.6 mg/kg of animal weight) with caffeine (0.6 mg/kg of animal weight), fifth one - a reference drug diclofenac sodium (8 mg/kg of animal weight).

Results. Analgesic activity was estimated by the ability of meloxicam, caffeine, their pharmacological composition and sodium diclofenac to reduce the number of writhes in experimental animal groups as compared to the control group and expressed in percentage. Also, the analgesic activity of meloxicam, caffeine was compared with analgesic activity of their composition (meloxicam + caffeine) and reference drug. Experimental research has shown that reduction of writhes after meloxicam administration reaches 8.30±0.21 in comparison with control animals 22.00±0.86, the analgesic potential was 63.6%. Administration of caffeine shows the decrease in the number of writhes to 7.80±0.48, with an analgesic potential 64.5%. The pharmacological composition of meloxicam and caffeine showed a significant reduction of the writhes to 5.20±0.17, while the analgesic potential 76.4%. Thus, the caffeine potentiates the analgesic activity of meloxicam. Obtained results after diclofenac sodium administration exceeded the analgesic potential value (67.3%).

Conclusion. Results of the conducted studies of the peripheral analgesic effect shows that the pharmacokinetic composition of meloxicam and caffeine demonstrated pain inhibition by 76.4%, which is significantly exceeded the analgesic activity of the peripheral genesis of the reference drug diclofenac sodium (67.3%). Hence, we can conclude that caffeine potentiates the analgesic activity of meloxicam.

Shevchenko V. A, Yurkina I. S.,Yuntsova K. O.

REACTIONS OF THE BLOOD SYSTEM IN ACUTE CARAGINOUS INFLAMMATION AGAINST THE BACKGROUND OF THE INTRODUCTION OF QUERCETIN

Kharkiv National Medical University
V. N. Karazin Kharkiv National University
Department of Physiological Pathology
Kharkiv, Ukraine
Research advisor: prof. Shevchenko A.N.

Introduction. An important interest in the pathogenesis of inflammation is the question of the mechanisms of self-maintenance of leukocyte infiltration, the replacement of cellular phases in the source of the transition, from the deployment of the process to its resolution and subsidence. Emigration of leukocytes with leukocyte tissue infiltration is the main component of inflammation, as leukocytes serve as the main cells-effectors of this process and the blood system as a whole,