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PERSPECTIVE PHARMACEUTICAL COMPOSITION OF COXIB WITH CAFFEINE – EXPERIMENTAL STUDIES OF MNESTIC ACTIVITY OF RATS IN CONDITIONS OF FORMALINE EDEMA

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Our earlier experimental studies of the biological activity of 1,3,7-trimethylxanthine (caffeine) proved that it affects the analgesic, anti-inflammatory and other pharmacological effects of nonsteroidal anti-inflammatory drugs (NSAIDs) of various chemical structures, including coxibs, which are one from the most modern groups of NSAIDs [1-4]. Also in previous studies, we studied the effect of 4-[5-(4-methylphenyl)-3-(trifluoromethyl)-pyrazol-1-yl]benzenesulfonamide (celecoxib) and 3-phenyl-4-(4-(methylsulfonyl)phenyl)-2-(5H)-furanone (Rofecoxib) on the mnesic activity (MA) of the brain of rats in conditions of formalin edema (FE) according to the influence on the conditioned reaction of passive avoidance (CRPA). According to the effect on MA (CRPA) in rats, the leader of the study was celecoxib, which was administered to animals intragastrically at a dose of 5 mg/kg – its effect exceeded the reference drug 2-[(2,6-dichlorophenyl)amino]-phenyl]acetate (Diclofenac Sodium) (8 mg/kg), and rofecoxib (1.5 mg/kg) had a weaker effect on MA in rats in conditions of FE [5].

The study of the effect of Caffeine on the MA of rats in conditions of FE, to which the studied coxibs were administered, has not been previously studied. Therefore, our purpose was to investigate the effect of the introduction of a known adjuvant on the MA of rats in conditions of FE, which were administered intragastrically Rofecoxib (1.5 mg/kg) and Celecoxib (5 mg/kg) as NSAIDs. We chose Diclofenac Sodium (8 mg/kg) as the reference drug. The introduction of the pharmaceutical composition of Rofecoxib (1.5 mg/kg) with Caffeine (0.6 mg/kg) contributed to an increase in the number of animals that learned up to 100%, which was 33% higher than the effect of

mono-administration of Rofecoxib – the number of animals in which short-term memory (STM) was formed was 100%, which was 50% higher than the effect of mono-administration of Rofecoxib under these conditions experiment.

The percentage of animals was 100% – both when Celecoxib was of mono-administration and when its pharmaceutical composition with Caffeine was administered. The percentage of animals in which STM was formed decreased by 50% when the pharmaceutical composition of Celecoxib with caffeine was administered (33%) compared to monoadministration of Celecoxib (83%).

Thus, we investigated the effect of Caffeine on CRPA in rats in conditions of FE when administered coxibs. The addition Caffeine to Rofecoxib or Celecoxib contributed to 100% formation of CRPA in rats in conditions of FE, which exceeded the effect of administration of the reference drug (83%). Preservation of CRPA after 1 hour occurred when the pharmaceutical composition of Rofecoxib with Caffeine was administered – STM was formed in 100% of rats, which is 50% more than when Rofecoxib was monoadministration and 33% more than when Diclofenac Sodium was administered.

Unfortunately, there was no positive effect of caffeine on the preservation of STM in rats administered Celecoxib against conditions of FE – STM was formed in only 33% of rats, which was at the level of the control pathology group and the Caffeine monoadministration group.

Therefore, promising pharmaceutical composition regarding MA, we considered Rofecoxib with Caffeine, which was studied by CRPA in rats in conditions of FE.

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