**Experimental research of analgesic effect of carbamazepine, paracetamol, caffeine and their compositions on central component of rats’ painful reactions**

Fed’ko K. O., Bachinsky R. O., Lukyanova L. V., Limanskaya A. O.

Scientific director: Syrovaya A. O.

Kharkiv National Medical University

Department of Medical and Bioorganic Chemistry

Compound of ingredients in polycomponent combination mutually increase their pharmacological effects. In clinical research confirmed advantages of combinations over monopreparations in pain’s pharmacotherapy.

In experement’s conditions on laboratory animals (viripotent rats of WAG line) was explored, in comparative plan, analgesic effect of nitrogencomprising organic compounds, exactly carbamazepine, paracetamol and caffeine in monoinjection and injection of their composition.

Analgesic effect of researched drugs and their compositions was explored by the influence on the central component of painful reaction by summary-threshold index (STI), which shows the functional status of CNS. STI was determined by the criterion of unconditional-reflex motor reaction of animals in answer to electrical irritation by S.V. Speransky. In this purpose was used impulse stimulator. STI was determined in the start of experiment (initial threshold of painful sensitivity), in 30, 60 and 90 minutes after oral injections of suspensions of researched substances and their compositions.

Analysis of comparative characteristic of central link researches’ of analgesic activity by STI in monoinjection paracetamol and carbamazepine and in injection of their pharmacological compositions with caffeine attests that caffeine potentiates analgesic activity of paracetamol and carbamazepine: analgesic activity in 90 minutes after injection pharmacological compositions of paracetamol with caffeine was 42,83%, carbamazepine with caffeine – 39,16%. Received data attests about presence of the central action of analgesic component in this compositions.