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ON THE ISSUE OF DEVELOPMENT OF MEDICINES IN SERIES OF 1,2,4-TRIAZOLE DERIVATIVESAlexander Bidnenko, Olga Belenicheva

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Presently, taking into consideration the role of oxidative stress in mechanisms of cell damage in majority of human diseases, inclusion of antioxidants into drug therapy aiming to potentiate the activity of base therapy remedies is practically compulsory. Long-term investigations having been done by researchers of Scientific-and-Production Corporation «Farmatron», Zaporozhye State Medical University, city Zaporozhye, Ukraine, let to reveal one compound – E8252 - among 10 thousands of 1,2,4-triazole derivatives, which later became the preparation “Thiotriazolin”. This drug has antioxidant, membrane-stabilizing, anti-ischemic, antiarrhythmic, immunomodulatory, anti-inflammatory, hepatoprotective and cardioprotective actions. Now this drug is commercialized and manufactured in various drug dosages, such as tablets, ampules, eye drops, suppositories, ointments [1].

One of the most promising approaches to the working out of modern drugs is the development of the remedies on basis of fixed combinations; it protects base substance from quick metabolism in organism and improves its transport through biological membranes thereby improving its therapeutic efficiency. Besides, antioxidative modulation of biotransformation reactions of main active component increases significantly combined drug safety for account of toxicity and side effects decrease. Preparation “Thiodaron” embodies a successful example of creation of antianginal preparations on basis of fixed combinations with antioxidants. Thiotriazolin was chosen appropriately as antioxidant component, and antiarrhythmic antianginal preparation Amiodarone – as base remedy. Effective nootropic and neuroprotective drug “Thiocetam” which is widely used in neurology, gerontology, pediatry and psychiatry was created on base of fixed combination of thiotriazolin and piracetam. Thiocetam efficiently combines nootropic, mnemotropic, antihypoxic effect of piracetam with antioxidant, anti-ischemic, adaptogenic activity of thiotriazolin [3].

The results of numerous experiments and clinical use of thiotriazolin and its combined drug dosages showed their high efficiency. The analysis of relationship “structure – activity” allowed to determine promising direction in creation of new biologically active molecules on base of 1,2,4-triazole. Carrying out chemical modification of molecule of drug-leader thiotriazolin and its combined forms we received new cation-anion active molecules. The compound combining in its molecule structural fragments of thiotriazolin and amino acid lysine which has properties of CNS depressant with anticonvulsant action turned out to be the most active one (working name is Lisyniy) [2].

Taking into consideration pharmacological action of thiotriazolin we can suppose that its combinations with other drugs will be investigated with the purpose of creation of new combined dosage forms. Besides, complex investigations are being fulfilled to make new drugs on the base of Lisyniy.

References:

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