The analysis of some researches makes one wonder why some classic antioxidants exhibiting antioxidant activity, such as vitamins E or A, are ineffective in the treatment of DM complications, which are based on processes related to oxidative stress. Prolonged antioxidant vitamin E and/or C supplementation could be effective to improve endothelial function in non-obese DM subjects (Montero et al., 2014). First of all, classic antioxidants cope well with the already formed toxic oxidation products, but they do not inhibit oxidation itself. Given the rather complicated metabolic pathways and the extensive negative effect of hyperglycemia on cells, the removal of oxidation products is insufficient. This fact seems to confirm the promising results of research on enzymes showing strong, intracellular antioxidant effects reducing the level of oxidative stress, like statins, angiotensin-converting enzyme inhibitors, and AT-1 receptor blockers and not only neutralizing its toxic products. As already mentioned, the synergistic effect of antioxidants may be of importance in this respect.

Conclusions. DM-induced complications are inextricably linked with the ROS action and the increase in the intensity of oxidative stress in the organism, which not only damages cellular components but also inhibits antioxidant defenses. Therefore, it could seem to focus on the use of antioxidants in the treatment and prevention of DM complications. As indicated by the researchers, due to the complicated etiology and molecular mechanisms of DM, the simple use of classic antioxidants may not be sufficient. The divide between the strong experimental evidence of the pathogenetic role of increased oxidative load in DM and the overwhelming failure of antioxidants to show any health benefits in clinical trials may well be characterized as the "antioxidant paradox" (Sheikh-Ali et al., 2011).

PHARMACOTHERAPY OF IRON DEFICIENCY ANEMIA

Taranenko L. Y.
Scientific supervisor: Zhabotynska N.V.
National University of Pharmacy, Kharkov, Ukraine
e-mail: rudiglee917@gmail.com

Introduction. Iron deficiency anemia (IDA) is an anemia caused by iron deficiency and accompanied by a decrease of the amount of hemoglobin in each erythrocyte. According to the World Health Organization, about 24.8% of the world's population suffers from anemia. According to the Ministry of Health, the prevalence of anemia in Ukraine is 1515,4 per 100,000 population, which is 1% in the structure of the incidence.

Aim. Determination of methods for diagnosis and study of variants of pathogenetic pharmacotherapy of iron deficiency anemia.

Materials and methods. The search, collection and detailed analysis of modern literature sources to solve the problems posed in the work. Data from the clinical protocol of primary and secondary (specialized) medical care were used. The search for additional literature was carried out using a search system that indexes the full text of scientific publications of all formats and disciplines - Google Scholar.

Results. Clinical blood test is the main test for the diagnosis of IDA, which reveals a reduced concentration of hemoglobin, hypochromia, microcytosis, decreased hematocrit, reduced erythrocyte indices. The method of selection for confirmation of IDA is the determination of serum ferritin, which belongs to the acute reactions. In favor of IDA is a reduced concentration of ferritin (the norm for adults – 15-30 μg/l; for children – 10-12 μg/l; for IDA – 12 μg/l and less). Also

confirmation of IDA is reduced transferrin saturation, increased concentration of protoporphyrin erythrocytes, increased concentration of transferrin.

The patient's treatment consists of eliminating the cause of IDA according to the established diagnosis and pharmacotherapy. Pathogenetic pharmacotherapy is usually performed with the help of iron medications for oral administration (preference is given to divalent iron medications). The dose of iron is prescribed in terms of elemental iron. The therapeutic dose of the drug is prescribed individually at the rate of 2 mg/kg of body weight of the patient. The following medications of divalent iron in oral forms are recommended: iron sulfate, iron fumarate. Also preparations of trivalent ferric iron in oral forms: iron oxide saccharate, iron (III) hydroxide complex with polymaltose. Parenteral iron medications are prescribed only for special indications. These are iron carboxymaltose, iron (III) hydroxide-sucrose complex. Also in the pharmacotherapy of IDA is used such iron supplements in combination with folic acid as iron fumarate with folic acid; iron (III) hydroxide complex with polymaltose and folic acid; iron sulfate with folic acid. In addition, there are iron supplements in combination with other drugs: iron fumarate with folic acid and cyanocobalamin; iron ammonium citrate with folic acid and cyanocobalamin; iron fumarate with folic acid, cyanocobalamin, ascorbic acid and zinc sulfate; iron sulfate with ascorbic acid; iron sulfate heptahydrate with ascorbic acid; iron gluconate, manganese gluconate with copper gluconate; iron sulfate heptahydrate with D, L-serine.

Conclusions. The results of the analysis of the collected information indicate that the correct diagnosis is necessary for effective pharmacotherapy of IDA. Treatment of iron deficiency anemia should be carried out accordin to the clinical protocol using the following list of drugs.

DIGOXIN AT SUB-CARDIOTONIC DOSES INCREASES THE ANTICONVULSIVE POTENTIAL OF CLASSICAL ANTI-EPILEPTIC DRUGS ON THE EXPERIMENTAL SEIZURES INDUCED BY CAMPHOR

Tsyvunin V. V., Mishchenko M. V., Kapelka I. G.
Scientific supervisor: Shtrygol’ S. Yu.
National University of Pharmacy, Kharkiv, Ukraine
tsyvunin-vad@ukr.net

Introduction. The widespread prevalence of epilepsy in the world population, together with the high percentage of patients resistant to existing antiepileptic drugs (AEDs), stimulate the constant search for new approaches to the treatment of the disease. One of the promising ways to improve the treatment of epilepsy is the use of drugs with new targets – the original basic mechanism of action, not inherent in the known AEDs. The anticonvulsant potential of drugs from different pharmacological groups – the so-called "non-antiepileptic drugs" – in particular, antiarrhythmic drugs, nonsteroidal anti-inflammatory drugs, synthetic antidiabetic drugs, statins etc. In addition, there are experimental justifications for potentiation by low doses of cardiac glycoside digoxin of the effect of classical AEDs in sub-effective doses on the basic model of pentylenetetrazole-induced seizures. Clinical data on the efficacy of sub-cardiotonic doses of digoxin as an off-label adjuvant in patients with multidrug-resistant epilepsy were also obtained. However, the optimal combinations of classical anticonvulsants and digoxin in convulsions with various neurochemical mechanisms, including conditions of cerebral monoamine imbalance (for example, on the experimental camphor-induced seizures), remain unknown.

Aim. The aim of the study was to find out the effects of digoxin at a sub-cardiotonic dose on the anticonvulsant effect of seven classical anti-epileptic drugs (AEDs) – sodium valproate,