КОРОТКІ ПОВІДОМЛЕННЯ

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COMPARATIVE EVALUATION OF PHARMACOKINETIC PARAMETERS ON THE ABSORPTION STAGE OF COORDINATION COMPOUND GERMANIUM OK-8 IN RATS IN NORMAL CONDITION AND IN CEREBRAL ISCHEMIA

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Ischemic stroke − one of the most challenging aspects of modern medicine, severity of which is explained by the consequences of each case of illness and level of morbidity. Therefore, the relevance of this problem necessitates further search of new remedies to treat the disease.

For deep preclinical research of the potential remedy is important to study it pharmacokinetic profile, that allows to get substantial information about the features of the drug passage in the body in different stages.

The purpose of this work was a comparative study of absorption of the potential cerebroprotector OK-8 in rats in normal condition and with acute cerebral ischemia.

Study of pharmacokinetic parameters of absorption was performed in serum in dynamics: 0,5; 2; 4; 12 and 24 hours after administration of OK-8.

On the background of the absence of reliable differences in the periods of absorption and constants of halfabsorption of studied compounds in the experimental group and in healthy animals, deserves special attention the fact that in condition of cerebral ischemia time to reach maximum concentration increased to 1,3 times compared to the group of rats without pathology, and the maximum concentration of OK-8 in norm is 14% higher than in the group of animals with cerebral ischemia.

Thus, current experimental data's enables expand to existing ideas about features potential cerebroprotector on the absorption stage and justifies further study of all pharmacokinetic stages.

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VALIDATION OF UV-SPECTROPHOTOMETRIC METHODS OF QUANTITATIVE DETERMINATION IN FORENSIC AND TOXICOLOGICAL ANALYSIS: LINEARITY AND RANGE

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The following procedure of linearity confirmation for UV-spectrophotometric methods of analytes quantitative determination in biological fluids used in forensic and toxicological analysis has been offered:

- application of the normalized coordinates (normalization by the reference solution, which absorbance is corrected by the value of recovery);
- the application ranges are 25 – 125%, 25 – 150%, 25 – 175%; as 100% the mean toxic or lethal analyte concentration in biological liquid is accepted;
- the number of concentration levels is g = 5, 6 or 7 (depending on the chosen application range) in constant increments of 25%;
- the number of «replicates» – replicate experiments – for each concentration level is determined by the results of calculation of $s_{nom,r}$ value, which acceptability estimation is carried out according to the following criterion:

$$s_{nom,r}(sample) \le \max s_{nom,r} = 0.707 \cdot \max \Delta_{As} \cdot \sqrt{n} / t(95\%, n-1).$$

- each replicate experiment is carried out within individual run/day using the matrix samples obtained from the same source;
- calculation of the parameters of linear dependence is carried out for each run (within-run (within-day) linearity) and by the mean values of replicate experiments (between-run (between-day) linearity).

The next criteria and the order of acceptability estimation of linearity for UV-spectrophotometric methods of analytes quantitative determination in biological fluids used in forensic and toxicological analysis have been offered:

- acceptability estimation of linear dependence parameters is carried out in two stages – for the lines obtained using model solutions (without matrix) and calibration samples respectively;
- it has been suggested two approaches for estimation of parameters of linear dependence obtained using model solutions; for both approaches the acceptability criteria have been offered for residual standard deviation RSD_0^{model}

and correlation coefficient R_c^{model};

- for estimation of parameters of linear dependence obtained using calibration samples it has been suggested to proceed from assumption of equality of the calibration uncertainty and the uncertainty of measuring the absorbance and sample preparation of the sample to be analysed; within this approach the acceptability criteria have been offered for residual standard deviation RSD_0 and correlation coefficient R_c; the parameters of within-run (within-day) and between-run (between-day) linearity should satisfy these criteria.

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TO THE QUESTION OF WILD PRIVET LEAVES STANDARDIZATION

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The search of prospective available sources of the medicinal plant material is one of the most urgent and priority tasks of contemporary pharmacy. The plants of the *Oleaceae* family are widely distributed all over our country and has long been used in folk medicine. The Privet genus unites more than 50 species. These plants are used as ornamental, melliferous and can also be used as dyes.

The wild privet (*Ligustrumvulgare* L.) has attracted our attention. The raw material of this plant is used in folk medicine. The literature data has shown that the branches, bark, leaves, flowers and fruits can be used as the plant material. Wild privet possesses anti-inflammatory, haemostatic, antimicrobial, laxative and expectorant activity. The wild privet bark infusion prepared on wine is used at chronic obstructive bronchitis, pneumonia, peptic ulcer, erosive gastritis with a tendency to bleeding, tonsillitis, pharyngitis, stomatitis and female diseases. The leaves are used in tonsillitis, pharyngitis, inflammatory diseases of the female genital organs. Galenic medicines of the leaves possess cardiotonic, hypotensive, protistocidal, antibacterial against *Staphylococcus aureus*, *Bacillus subtilis*, *Escherichia coli*. Flowers are used in laryngitis, tonsillitis, stomatitis, and fever. The fruits can be used as a laxative. To date, the chemical composition of wild privet is studied insufficiently. The bark is found to contain phenols and their derivatives, resins; flowers contain sugars, carotenoids, vitamin C, up to 0,3 % of alkaloids, apigenin, luteolin and quercetin glycosides, tannins; flowers – essential oil; fruits – cyaniding and malvidin glycosides. Bark, leaves and flowers are found to contain glycoside ligustrin (syringin).

The aim of the work is to choose the proper extragent for the most effective extraction of the biologically active compounds of wild privet leaves.

The plant material collected in Kharkiv region after complete opening of leaf lamina was used for the study; as extraction solvents water and water-alcohol mixtures with the increase of the content of the latter were used; the evaluation criteria were the extractive matter yield and the sum of oxidized phenols (investigation method – according to the USSR Pharmacopoeia, XI ed.).

As a result of the experiment carried out the dynamics of the extractive matter and the sum of oxidized phenols yield was determined and 50 % ethanol was found to be the best extragent. The data obtained will be used in the technology of galenic medicines from wild privet leaves working out.

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THE LEVEL OF ANTIOXIDANT ACTIVITY IN ERYTHROCYTES OF PATIENTS WITH CIRRHOSIS OF LIVER AND IRON- DEFICIENTCY ANEMIA

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It has been shown that in erythrocytes of patients with cirrhosis of liver and iron- deficientcy anemia the activity of catalase and glutathione-reductase is increased, that may have some compensatory value.

It is known that many diseases disturbed prooxidant-antioxidant balance, that is accompanied by the development of oxidative stress. Given this, it is worth while to study the state of the antioxidant system in erythrocytes under diseases of different character.

The material for the study served the erythrocytes of patients with iron- deficientcy anemia and patients with cirrhosis of liver. The blood of patients with iron- deficientcy anemia and cirrhosis of liver was taken at the 7 City Hospital of Simferopol. The control group consisted of practically healthy people. The group of ills included 9 pa-