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Конференція внесена до Реєстру заходів безперервного професійного розвитку, які проводитимуться у 2023 році №5500074

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the degree of drugs toxicity, the range of its pharmacological effects, and also allows evaluation of the examined substance danger to the body in a short-term action.

The aim of the study. To determine the LD50 and simulation of the clinical manifestation of acute poisoning, acute toxicity of Simon poplar leaf extract investigated on white adult lab rats.

Material and methods. The animals of the control group were given an equivalent volume of 1% starch suspension. The period of the animals monitoring was 14 days, during which the animals'appearance, the skin condition, the dynamics of body weight, mortality were evaluated. After the animals were removed from the experiment, macroscopic evaluation and the mass coefficients of the internal organs were determined.

Results. As a result of the experiment, after the single oral intragastric administration of a Simon poplar leaf extract animals of the experimental and control groups maintained motor activity, responded to sound and light stimuli, the processes of defecation and urination were within normal range, respiratory disturbances and convultions were not observed. Reflex excitability was maintained in all the animals, and death of rats was not observed. The dynamics of the rats' body weight after intragastric administration of Simon poplar leaves extract matched the body weigh gain. The consumption food and water in the experimental animals did not differ from the animals of the control group. During the whole experiment period, the animal mortality was not registered. By their size, color, location of the internal organs, experimental rats did not differ from the animals of the control group. The surface of the liver, kidneys and adrenal glands is smooth. The colors, shapes and sizes of the organs are normal. The pancreas is grayish-pink in color, the spleen is full-blooded, elastic, the mucous membrane of the stomach with a pronounced relief of folds, the mucous membrane of the intestine is not changed. In the chest, all the organs are located anatomically correct. The heart muscle in section is dark red, in the lungs the pleural layers are not changed. The mass coefficients of the internal organs indicate the absence of pathological changes.

Conclusions. Therefore, a single intragastric administration of the extract of this medicinal plant material at a dose of 15,000 mg/kg does not induce toxic effects.

Shchudrova T.S.

MELATONIN AMELIORATES RHABDOMYOLYSIS-INDUCED ACUTE KIDNEY INJURY IN RATS

Department of Pharmacology
Bukovinian State Medical University

Introduction. Rhabdomyolysis is the disruption of skeletal muscle integrity leading to the leakage of muscle cell contents, including electrolytes, myoglobin, creatine kinase, lactate dehydrogenase and other intracellular contents into the circulation. Rhabdomyolysis can be caused by different physical or chemical damages such as direct traumatic injury, physical exertion or prolonged bed rest, muscle ischemia, infections, electrolyte and metabolic disorders, genetic disorders, toxins and drugs, as well as temperature-induced states such as neuroleptic malignant syndrome and malignant hyperthermia. AKI is the most common systemic life-threatening complication of severe rhabdomyolysis, which occurs at an incidence ranging between 10 and 55% and is associated with a poor outcome and high mortality. Development of AKI is caused by accumulation of nephrotoxic myoglobin in the kidney and renal hypoperfusion as a result of systemic hypovolemia. Current treatment for rhabdomyolysis-induced AKI relies on supportive therapies (IV fluids, bicarbonate, and hemodialysis) and the mortality remains considerably high. Melatonin is a promising therapeutic agent, possessing cytoprotective, anti-aging, antioxidant, immunomodulatory, oncostatic, anti-inflammatory, and anti-apoptotic properties under the conditions of various pathologies, including renal, which contributes to its active study in order to expand the range of clinical use.

The aim of the study was to evaluate the effects of melatonin (5 mg/kg) on the animal model of rhabdomyolysis-induced AKI.

Material and methods. Research was conducted on 24 nonlinear mature white rats randomly distributed into three groups (n=7): group I – control, group II – rhabdomyolysis-induced AKI

caused by intramuscular injection of 50% glycerol solution (8 ml/kg), group III – administration of melatonin (Sigma-Aldrich, USA) at a dose of 5 mg/kg 1 h and 24 h after glycerol administration. Animals were withdrawn from the experiment 24 h later, while blood, urine and the kidneys were sampled for biochemical and histopathological assessments. Statistical processing of the obtained data was performed using the SPSS Statistics 17.0 software.

Results. Rhabdomyolysis-induced AKI was characterized by significant oliguria and decrease in GFR, retention azotemia and hyperkaliemia, proteinuria, and decrease in urine pH. Severe tubular injury was confirmed by a marked increase in gamma glutamyl transpeptidase (γ-GTP) level in urine and increased fractional excretion of sodium. It was found that co-administration of melatonin significantly ameliorated kidney function in rats with AKI. Cytoprotective effect on the proximal renal tubules was verified by decrease in γ-GTP level, increase in diuresis and GFR, with subsequent reduction of retention azotemia, decrease in plasma potassium level, reduction of proteinuria, and decrease in fractional sodium excretion. Renoprotective effect of melatonin may be partially attributed to its potent antioxidant effect, verified by a significant reduction in renal MDA and OMP content along with an increase in GPx activity comparing to untreated animals, as well as an ability to maintain cellular energy balance by preservation of SDH activity in kidney tissue. Histological examination confirmed renoprotective effect of melatonin. Treatment with melatonin limited the degree and prevalence of histopathological changes in the kidneys, with significant reduction of necrosis, degeneration and myoglobin casts.

Conclusions. The obtained data on the effectiveness of melatonin under the conditions of rhabdomyolysis-induced AKI indicate its potent renoprotective activity resulting from the influence on the key links of pathogenesis. The results of the research confirm the prospects for further experimental study of melatonin in conditions of various renal pathologies.

Sydor V.V.

PHARMACOECONOMIC ANALYSIS OF THE USE OF GENERIC ANTIHISTAMIN DRUGS CONTAINING LEVOCETIRIZINE

Department of Pharmacy
Bukovinian State Medical University

Introduction. To date, more than 20,000 allergens are known, the number of which continues to grow. One of the most popular antihistamine drugs, in terms of use in patients with allergies, are those containing levocetirizine .

The aim of the work. Optimization of allergy pharmacotherapy by conducting a pharmacoeconomic analysis of the use of antihistamine drugs containing levocetirizine .

Materials and methods. Pharmacoeconomic research methods are applied - "minimization of costs", which is intended for the selection of a drug or treatment method with minimal costs, and "cost-effectiveness", which allows you to conduct a cost-effectiveness assessment and estimate the cost per unit of effectiveness of the treatment method. 74 schemes of pharmacotherapy of patients with allergies were analyzed. Three groups of patients were identified: the first group (24 patients) received L-cet tab. 5 mg ("KUSUM HEALTHCARE PVT LTD", India), the second (25 patients) - Allerzin tab. 5 mg ("EGIS", Hungary), the third (25 patients) - Aleron tab. 5 mg (Teva, India) in therapeutic doses.

Results. The cost-effectiveness pharmacoeconomic analysis method established that the clinical effectiveness for the scheme of pharmacotherapy with antihistamine drugs containing levocetirine for L-cet (5 mg/day for 1 dose), Allerzin (600 mg/day for 1 dose) and Aleron (5 mg/day for 1 dose) was 0.05, 0.1, 0.07, respectively. This indicates the lowest efficiency of L-cet. According to the "minimization of costs" method, it was determined that the most expensive is allergy pharmacotherapy with the drug Alerzin 5 mg. Its cost is 101.40 UAH, the cost of treatment with L-cet 5 mg was 55.70 UAH, and the least expensive was treatment with the drug Aleron 5 mg - 48, 80 UAH.