

experiment was carried out on 80 Chinchilla rabbits, divided into 5 groups as follows: 1) intact control; 2) placebo group (topical application of the cream without the active substance); 3–5) topical application of the cream with CDN in the dose of 0.06, 0.18, and 0.6 g/kg, respectively. The total duration of application was 3 months (once a day), with further 1-month follow-up period.

The safety of the drug was evaluated after 1 week, 2 weeks, 3 weeks, 1 month, and 3 months from the beginning of the study, as well as after 1-month follow-up period by the following indices: general appearance, food and water consumption by animals, their body mass dynamics, hematological and serum biochemical parameters. The results were statistically assessed with the use of ANOVA test with post-hoc comparisons and tests for dependent and independent samples, taking into account whether the distribution is normal or not.

**Results and discussion.** No deviation from normal condition was observed in general appearance of animals and their food and water consumption during the experiment. An application of the cream with CDN, regardless of the dose used, didn't cause the negative body mass dynamics in rabbits. There were almost no statistically significant differences between the groups regarding the values of hematological (hemoglobin level; erythrocyte, leucocyte, and platelet count; leucogram) and serum biochemical (total protein, albumin, glucose, cholesterol, urea, potassium, sodium, and chloride levels; alanine aminotransferase and aspartate aminotransferase activity) parameters.

**Conclusions.** The obtained results confirm the safety of the cream with CDN in the subchronic toxicity setting. It's expedient to continue non-clinical studies of this drug and introduce it into medical practice as a photoprotective agent for prevention of squamous cell carcinoma, basal cell carcinoma, and melanoma.

## PHARMACOTHERAPY FOR UROLITHIASIS

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**Introduction.** Urolithiasis (nephrolithiasis) is a metabolic disease characterized by the formation of concrements in the kidneys and urinary tracts, is caused by various endogenous and (or) exogenous factors, often hereditary in nature, characterized by a tendency to relapse and persistent severe course. The annual incidence of nephrolithiasis in the world is between 0.5 and 5.3% and is gradually increasing. Statistics show that ICD occurs in 12% of men and 5% of women aged 60 years and older. The incidence of ICD in Ukraine is quite high and ranges from 2 to 12 cases per 10 000 population.

**Aim.** The purpose of our study was to study the pharmacotherapy of urolithiasis in international medical practice

**Materials and methods.** The international recommendations and orders of the Ministry of Health of Ukraine for the treatment of urolithiasis have been studied.

**Results and discussion.** Treatment of nephrolithiasis involves emergency management of renal (ureteral) colic, including surgical interventions where indicated, and medical therapy for stone disease. Renal colic may be relieved with opioids, such as morphine and, for a rapid onset, fentanyl. Ketorolac 30 mg IV is rapidly effective and nonsedating. Vomiting usually resolves as pain decreases, but persistent vomiting can be treated with an antiemetic (eg, ondansetron 10 mg IV). Uric acid calculi in the upper or lower urinary tract occasionally may be dissolved by prolonged alkalinization of the urine with potassium citrate 20 mEq po bid to tid, but chemical dissolution of calcium calculi is not possible and of cystine calculi is difficult. Drinking large amounts of fluids is recommended for prevention of all stones. For hypercalciuria, patients may receive thiazide diuretics (chlorthalidone 25 mg po once/day or indapamide 1.25 mg po once/day). A normal calcium intake (eg, 1000 mg or about 2 to 3 dairy servings per day) is recommended, and calcium restriction is avoided. In hyperuricosuria, intake of animal protein should be reduced. If the diet cannot be changed, allopurinol 300 mg each morning lowers uric acid production. For uric acid calculi, the urine pH must be increased to between 6 and 6.5 by giving an oral alkalinizing drug that contains potassium (eg, potassium citrate 20 mEq bid) along with increased fluid intake.

**Conclusions.** For the dissolution of stones, drugs that alter the acid-base balance of the blood and change the acidity of urine are used. The drug is selected taking into account the type of concrements.