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EVALUATION OF THE DEGREE OF ACCUMULATION AND LOCAL IRRITANT ACTION OF THE DRUGS ESSIN/HP-BETTA-CD AND TAUCIN UNDER EXPERIMENTAL CONDITIONS

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ABSTRACT

The aim of the study was to investigate the degree of accumulation, local irritant effect of the preparations Essin/HP-betta-CD and Tautsin on laboratory animals: mice, rabbits. The degree of accumulation of Essin/HP-betta-CD was determined by administering the preparation to experimental mice. On the 8th day of the experiment, all mice showed signs of slowing down of movements, they became inactive for a short period of time and returned to normal after 60 minutes. The local irritant effect of the preparation Essin/HP-betta-CD was studied on laboratory rabbits. An hour after instillation of the preparation into the conjunctiva of the eyelids of rabbits, 75% of the experimental animals showed short-term serous discharge. When observing for 72 hours, no changes were found in the sclera and cornea of the eyes of rabbits, and the reaction and diameter of the pupil to light did not change. The local irritant effect of Taucine was tested on the eyes of rabbits, i.e. the drug was assessed by its ability to irritate the mucous membrane of the eye. For this purpose, 0.1 ml of a 1% solution of Taucine was instilled into the right eye of rabbits weighing 2.2–2.5 kg. 0.1 ml of distilled water was instilled into the left eye and used as a control. Both eyes of the animal were examined 1, 24, and 72 hours after the administration of the drug. The condition of the iris of the conjunctiva was assessed by the appearance of the mucous membrane, the structure of the blood vessels, and the presence or absence of tears.

Key words: Essin/HP-betta-CD, Taucin

INTRODUCTION

The aim of the study. To study the degree of accumulation and local irritant action of the drugs Essin/HP-betta-CD and Taucin on laboratory animals: mice, rabbits.

Materials and methods of the study. 1. The degree of accumulation of Essin/HP-betta-CD was determined by administering the preparation to experimental mice. On the 8th day of the experiment, all mice showed signs of slowing down of movements, they became inactive for a short period of time and returned to normal after 60 minutes.

2. The local anesthetic effect of Essin/HP-betta-CD was studied on laboratory rabbits. One hour after instillation of the drug into the conjunctiva of the eyelids of rabbits, 75% of the experimental animals showed short-term serous discharge.

3. The local irritant effect of Taucin was determined on the eyes of rabbits.

Results of the study. 1. Evaluation of the degree of accumulation of Essin/HP-betta-CD. No visual damage was observed when Essin/HP-betta-CD was administered to experimental mice. No deaths were observed in mice during the first 1–24 days of the experiment (Table 1).

Table 1. Degree of accumulation of the drug Essin/HP-betta-CD.

Directions for use	Observation period (in days)					
	1-4	5-8	9-12	13-16	17-20	21-24
Daily dose administered for 4 days, ml/kg	30	45	67,5	101,25	151,875	227,8
Total dose, ml/kg	30	75	142,5	243,75	395,625	623,425
Animals killed by Essin/HP-betta-CD	-	-	-	-	-	-

2. Local irritant effect of Essin/HP-betta-CD.

One hour after instillation of Essin/HP-betta-CD into the conjunctiva of rabbits, 75% of the experimental animals showed short-term serous discharge. When observed for 72 hours, it was found that the rabbits did not show any changes in the sclera and cornea, and the pupil's reaction to light and its diameter did not change (Table 2).

Table 2. Changes noted in the eyes of rabbits exposed to Essin/HP-betta-CD.

№	Observed changes	Observation time (in hours)				
		1/4	1	24	48	72
1	Section of the anterior optical medium of the eye	0/3	0/3	0/3	0/3	0/3

2	Condition of the conjunctiva	No changes	No changes	No changes	No changes	No changes
3	Changes in the epithelium and mucous membranes	0/3	0/3	0/3	0/3	0/3
4	Presence or absence of discharge	0/3	1/3	1/3	0/3	0/3
5	Nature of discharge	-	serous	serous	-	-
6	Corneal condition	transparent	transparent	transparent	transparent	transparent
7	Pupil position (diameter)	3,0 mm	3,0 mm	3,0 mm	3,0 mm	3,0 mm
8	Changes in the condition of the blood vessels of the eye	0/3	0/3	0/3	0/3	0/3
9	Lacrimation	1/3	1/3	0/3	0/3	0/3
10	Amount of lacrimation	minimal	minimal	-	-	-

3. Assessment of the degree of accumulation of the drug Taucin. During the first 8 days, with oral administration of Taucin at a dose of 5-7.5 mg / kg, all laboratory mice showed a decrease in activity, they huddled together for 20-30 minutes; the decrease in activity disappeared after 45-60 minutes, and their activity returned to normal, appetite improved (Table 5).

Over the next 9-20 days, further changes were detected in their condition, and after some time they returned to their normal state. Since no deaths were recorded during the experiment, even on the 21st-24th day, it can be concluded that Taucin does not cause accumulation.

Table 3. Degree of accumulation of Taucin.

Directions for use	Observation period (in days)					
	1-4	5-8	9-12	13-16	17-20	21-24
Daily dose administered for 4 days, mg/kg	5	7,5	11,25	16,875	25,31	101,25
Total dose, mg/kg	20	30	45	67,5	101,25	405
Number of dead mice	-	-	-	-	-	-

4. Evaluation of the local irritant effect of Tautsin. The local irritant effect of Tautsin was tested on the eyes of rabbits, i.e. the drug was assessed by its ability to irritate the mucous membrane of the eye. For this purpose, 0.1 ml of a 1% solution of Tautsin was instilled into the right eye of rabbits weighing 2.2–2.5 kg. 0.1 ml of distilled water was instilled into the left eye and used as a control. Both eyes of the

animal were examined 1, 24, and 72 hours after administration of the drug. The condition of the iris of the conjunctiva was assessed by the appearance of the mucous membrane, the structure of the blood vessels, and the presence or absence of tears. A 1% solution of Tautsin did not irritate the sclera of the rabbit's eye. In this case, under the influence of Tautsin, tears were observed in the rabbits during the first 15 minutes of the experiment. At the last check after 1 hour, this condition was not noted. After 24 and 72 hours, symptoms of irritation of the mucous membrane (hyperemia, edema, changes in the sclera and cornea) were not noted. Taucin also did not change its pupils. This means that the drug does not have a local effect on the mucous membranes, does not change intraocular pressure and accommodation.

Conclusion. 1. The cumulation coefficient of the drug Essin / HP-betta-CD in the studied doses (10, 30, 50 mg / kg) was not detected.

2. Essin / HP-betta-CD does not have a local irritant effect.

3. Accumulation of the drug Taucin was not detected.

4. 1% solution of the drug Taucin did not irritate the sclera, cornea and pupils of rabbits.

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