WASTE MATERIALS OF MEAT INDUSTRY- SOURCE OF OBTAINING OF MEDICINAL PREPARATIONS

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Endocrine-enzyme and special raw materials as obtained from slaughter animals is the source for the manufacture of a number of medicinal preparations. These preparations, owing to their wide spectrum of action, high curative efficiency and low toxicity are prescribed to patients having different diseases of blood, pancreas and liver, as well as heart and vascular system. Atherosclerosis is one of the most frequent causes of prematurel deaths of population almost in all developed countries of the world. Therefore, search for effective antisclerotic preparations is one of the urgent problems of the present day pharmacology.

There are a number of synthetic foreign preparations, such as "Zokar", "Mevokor", "Lipostat", etc that are used for curing atherosclerosis.

However, they have some side effects, such as hepatolithiasis, disorders in vision ets. Taking into account that antiatherosclerotic preparations have been used for a long time, the presence of serious side effects is undesirable.

Hence, the objective of these investigations was to study the possibility of obtaining the preparation from the animal raw material, having antiatherosclerotic effect, with less pronounced side effect.

The Institute has developed an antisclerotic preparation from duodenums of pig, having the form of "pills covered with intestine soluble coating", and according to the requirements of the State Pharmacological Committee of the Ministry of Health of Russia, medical and biological investigations on animals were carried out.

The investigations confirmed a specific action of the preparation on the decrease of the level of cholesterol, triglycerides, lipoproteides of low density; acute and chronical toxicity was studied, as well as embryotoxical and teratogenic properties and the influence on reproductive function of white rats.

It was found that the preparation reduced the level of cholestoerol on the average by 15-20 %, triglycerides - by 20-22 %, lipoproteides of low density - by 40-42 %, activates lipoproteide lipase by 30-40 %; it is non-toxic, doesn't possess embryotoxic properties and doesn't influence the reproductive function of animals of both sex.

This paper presents the results of the investigations of allergenic properties of the preparation.

THE OBJECTIVE OF THE INVESTIGATIONS

Confirmation of pharmacological safety of the preparation

MATERIALS AND METHODS

Allergenic properties of the preparation were studied according to "Methodical recommendations on the evaluation of allergenic properties of pharmaceuticals" (M. 1988) with the help of generally accepted skin anaphylaxis and reaction of hypersensibility of slow type.

To evaluate the active skin anaphylaxis and hypersensibility of slow type the male guinea pigs with the weight 350-400 g were sensibilized by administration perorally of the preparation in two doses: in dose 20 mg/kg that when calculated over the surface of the body corresponded to the average theraupetic dose for a human being - 225 mg/day, and in the dose 200 mg/kg, that was 10 times higher than the average equivalent theraupetic dose for a human being during 21 days. The animals of the control group received physiological solution. Each experimental and control group comprised 7 animals.

To evaluate the active skin anaphylaxis the sensibilized guinea-pigs on the 21st day from the beginning of sensibilization were infused intravenously O,5 ml of 2 % solution of blue colouring of Evanse and just after that at previously depilated areas of skin the intraskin injection of the resolution dose of the preparation was carried out.

The resolution dose of the preparation that did not cause local irritative action during intraskin infusion was titered during preliminary experiments. During resolution injection 50 μl of the preparation suspension in distilled water containing 2,5 mg of the preparation was injected to the animals.

To control the reactivity of the skin, 50 μl of sterile physiological solution was injected at contralateral depilated area of the skin of the same animal. Similarly, the blue Evanse and resolution injections were carried out on the animals of the control group. 30 min. later the animals were slaughtered, and at the inner side of the skin and in the areas of injection of the preparation the sizes of the coloured spots were determined.

To assess hypersensibility of slow type, a resolution dose of the preparation that did not cause local irritation , was injected on the 21st day into the hind paw digit of sensibilized and control animals that comprised 50 μl of the preparation suspension in distilled water with the concentration of the preparation of 2,5 mg/l. 50 μl of physiological solution was injected into contralateral extremity. 24 hours later thickness of paws by the engineering micrometer was measured. The index of reaction of hypersensibility of slow type was calculated according to the formula: $I\ (\%) = (T_0 - T_k)/T_k$,

where T_0 - thickness of the paw with the injected preparation

T_k - thickness of the paw with physiological solution

I - index of reaction in %

RESULTS AND DISCUSSION

Table I shows the data characterizing the influence of the preparation substance on the active anaphylaxis of the animals, and Table 2 - the results of the reaction of hypersensibility of slow type of the animals.

Table 1. Reaction of active skin anaphylaxis of guinea-pigs, sensibilized by antiatherosclerotic preparation during 21 days

Index	group of animals	
	control	experimental
Size of blue spot (mm) in the area of injection:		
antigen at the dose of the preparation, mg/kg:		
20	13.9 ± 2.6	11.8 ± 2.8
200	13.9 ± 2.1	12.7 ± 2.8
physiological solution at the dose of preparation, mg/kg:		
20	8.7 ± 1.9	9.2 ± 2.5
200	8.7 ± 1.7	8.8 ± 1.9

Analysis of the results of the experiment (Table 1) did not reveal reliable differences in the sizes of coloured spots in the inner surface of animals skin, receiving the preparation as compared to these in the control group.

Table 2. Reaction of hypersensibility of slow type of guinea-pigs, as sensibilized with antiatherosclerotic preparation during 21 days.

Index	Group of animals	
	control	experimental
Index of reaction of hypersensibility of slow type (%) at the dose of preparation, mg/kg:		
20	11.5 ± 3.7	9.2 ± 1.9
200	11.5 ± 3.7	9.7 ± 2.8

Studies of allergenic effect under the influence of antiatherosclerotic preparation at the doses of 20 and 200 mg/kg, used during 21 days perorally, as compared to the control group, receiving the physiological solution allowed to consider that with this pattern of reception of the substance, there are no active skin anaphylaxis and the reaction of hypersensibility of slow type in tne organism.

COCLCLUSION

Antiatherosclerotic preparation with peroral way of sensibilizalion, corresponding to the recommended way of introduction for a human being , doesn't possess allergenic effect.

REFERENCES

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