ANTIALLERGIC EFFECT OF "CICHOL"
(COMPLEX OF CITRAL WITH SODIUM CHOLATE)

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The antiallergic effect of a colloidal solution of provitamin-A — carotene — was first discovered by S. D. Balokhovsky and L. A. Kashchevska [2]. Further investigations have established that some substances partially reproducing the structure of the vitamin A molecule possess anticholinergic and antihistaminic activity [1-2]. The investigations of Balakhovsky and Rivkina [4] showed that the product formed by interaction of sodium cholate and citral, known as "cichol", possesses antihistaminic and anticholinergic properties to the same degree as pure citral (threshold of sensitivity approximately $1:10^{-5}$).

According to the findings of our clinical investigations, "cichol" possesses to a high degree the capacity of removing pain in the eye when forced into the conjunctival sac, and the removal of pain is not accompanied by a decline in the sensitivity of the tissues, i.e., freeing from pain in this case, is not produced by either anesthetizing or narcotic action. Subsequently, it was shown that "cichol", introduced parenterally, in a large percentage of cases (60-70) removes pain in just the same way in patients with eye diseases.

In order to work out still further indications for therapeutic usage of citral and "cichol", it was very interesting to clarify whether they possess desensitizing (antiallergic) properties. For this purpose we arranged a number of experiments*.

EXPERIMENTAL METHODS

We selected 22 guinea pigs which were vaccinated with 5-10 mg dried BCG vaccine (attenuated strain of Bacillus tuberculosis obtained by Calmette and Guerin in 1921). The introduction of this vaccine in the guinea pigs was made necessary because of sensitization to tuberculin confirmed by high activity in the Mantoux reaction.

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* This work was performed by us in the BCG Laboratory of the Central Institute of Experimental Medicine.

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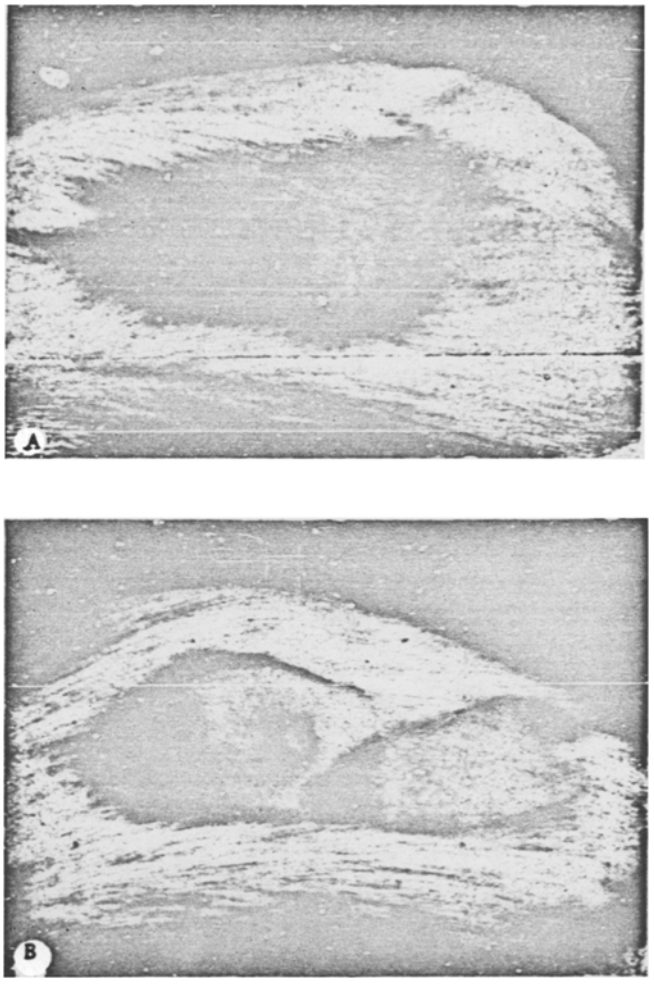

Result of Reaction in Vaccinated Guinea Pigs:
A) Subjected to a course of injection of "cichol" (15 ml)— Pale hyperemia of the skin, infiltrate 8x8x0.5 mm; B) In the control — vivid hyperemia of the skin, infiltrate 14x15x24 mm, ischemia in the center 8x8 mm.

Exposures made twenty-four hours after introduction of tuberculin.

Group of Animals	Type of Investigation	Number of Animals	Number of injections of "Cichol"	Volume of injections of "cichol" in ml.	Time and course of injections in days	Total of introduced "Cichol" in ml	Index of Appraisal of the Mantoux action for each guinea pig
1	Experiment	4	5	1.5	21	7.5	64—128—144—288
	Control	4	—	—	—	—	288—242—675—630
2	Experiment	4	7	1,5	28	10,5	20— 36— 64— 36
	Control	4	—	—	—	—	100—338— 80— 64
3	Experiment	3	10	1,5	32	15	49— 20— 32
	Control	3	—	—	—	—	144—540—420

* The appraised index was recommended by L. I. Nakhimson-Leventon [5], and represents the reproduction of the values of the infiltrate and hyperemia (in mm) in three directions: in the transverse and longtitudinal diameters and in the depth of the infiltrate. The latter value is half the thickness of the skin fold in the area of the reaction, measured by a slide guage.

The guinea pigs were divided into 3 groups. In each group animal pairs were matched and an attempt was made to ensure that the guinea pigs in each group were of uniform weight and age. The experiment was carried out on one of the animal pair, and the other served as control. The animals were kept on the usual food diet.

The experimental guinea pigs were subjected to a course of subcutaneous injections of "cichol", after which they remained very well nourished and mobile and eagerly responded to an attempt to take them in the hand. Then the Mantoux reaction was again repeated both in the experimental and control animals; tuberculin at an attenuation of 1:1,000 was injected(0-1 ml) intradermally in the guinea pigs.

The results of the experiments are given in the table and in the figure.

It is clear from the table that after introduction of "cichol" desensitization occurs. Intradermal injection of tuberculin (Mantoux reaction) normally producing in vaccinated animals development of considerable infiltrates and vivid hyperemia of the skin at the site of the puncture, left only insignificant traces in the same animals receiving subcutaneous injections of "cichol".

At the conclusion of the experiments the animals were killed. Upon dissection no pathological changes in the internal organs and glands were found.

On the basis of the experiments undertaken, one may draw the following conclusions.

1. "Cichol" possesses a desensitizing effect which to a certain extent depends on the amount of the preparation introduced in the organism.

2. Combination of citral with sodium cholate (cichol) in the tested doses is not toxic.

LITERATURE CITED

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* In Russian.