MORPHOLOGICAL CHARACTERISTICS OF THE HYPOTHYROIDISM OF RAT PUPS BORN TO HYPOTHYROID RAT MOTHERS

Mahmudova Umida Muhiddin qizi
Toshkent tibbiyot akademiyasi odam anatomiyasi va OXTA magistri
Mamatvaliyev Bunyod Rahmonali o'g'li
Toshkent tibbiyot akademiyasi odam anatomiyasi va OXTA magistri
Ilmiy rahbar - **Mirzamuxammedov O.X.**

ABSTRACT

The introduction substantiates the relevance and relevance of the study, characterizes the purpose, objectives, object and subject of the study. Compliance with the priority directions of development of science and technology of the Republic is shown, as well as scientific novelty and practical results, the implementation of the results obtained in practical activities, published works and information about the structure of the dissertation are presented.

Keywords: *histological changes, ultrastructural and morphological changes hypothyroidism, age-related features, hypothyroidism were obtained and scientifically substantiated.*

INTRODUCTION

"Materials and methods of research," experimental hypothyroidism was induced in 220 white female laboratory rats. The rats are divided into 2 groups. The first group consisted of 25 female rats in which experimental hypothyroidism was induced by administering the antithyroid drug Mercazolil at a dose of 0.5 mg per 100 g of body weight for 21 days. The second group consisted of intact female rats, into which a 1% starch suspension in a dose of 1.0 ml was injected into the stomach using a probe. Groups of rats were carefully monitored in vivarium conditions.

After 2 weeks of creating experimental hypothyroidism, the majority of rats in the first group showed a decrease in motor and nutritional activity, changes in the coat, and drowsiness. In order to determine the functional state of the thyroid gland in 10 experimental animals, the concentration of thyroid-stimulating hormone (TSH) and free thyroxine (T4) was determined in the blood serum. After identifying a stable decrease in the concentration of the hormone T4, we moved to the third stage of the experiment, that is, female rats were transplanted into cages with healthy males, and the presence of pregnancy in females was monitored.

Main body

The number of offspring born from female rats with experimental hypothyroidism was 120 individuals, and 100 pups were born from intact female rats. Each offspring from mothers was studied at 3, 7, 14, 21 and 30 days of postnatal ontogenesis. After birth, the pups were kept together with female rats for 1 month, then the offspring were separated according to sex into separate cages. At the next stage of the experiment, the rat pups were divided into 50 pieces: 120 rat pups born from female rats with experimental hypothyroidism (experimental group) and 100 pups born from intact female rats (control group).

Blood was collected from the tail vein of both female and pup rats, and the amount of thyroid hormones was studied. Various degrees of metabolic disturbances in the body due to insufficiency of thyroid hormones are given in literary sources.

After birth, the rat pups were killed on the 3rd, 7th, 14th, 21st and 30th days by instant decapitation. For histological studies, tissues were removed from the head, body and caudate part of the pancreas. Pancreatic tissue was fixed with a 10% formaldehyde solution, dehydrated in alcohol, and paraffin blocks were prepared.

Histological preparations measuring 8-12 μm were prepared from paraffin blocks and stained with hematoxylin-eosin. The killing of laboratory animals was carried out in accordance with the "European Convention for the Protection of Vertebrate Animals Used for Experimental and Other Scientific Purposes" (Strasbourg, 1985). Histological sections 8-10 microns thick prepared on a rotary microtome were stained with hematoxylin-eosin.

In order to substantiate experimental hypothyroidism in rats, the content of triiodothyronine (T3), unbound thyroxine (T4) and thyroid-stimulating hormone (TSH) in the blood was determined at different periods of the experiments (see Table 1).

Analysis of the data obtained showed that on the 7th day of the experiment, the content of hormones T3 and T4 in rat pups of the experimental and control groups practically did not differ from each other. On the 14th day of the experiment, a clear decrease in T4 indicators and a not very pronounced decrease in T3 indicators were revealed.

Conclusion

Most islets are separated from surrounding tissues by a connective tissue capsule. The islets are formed by endocrine cells - insulinocytes. Between them there are capillaries with a single fenestrated basement membrane. There is a pericapillary

cavity around the capillaries; insulin hormones first enter these cavities and then enter the blood through the walls of the capillaries.

In different parts of the pancreas, the volumetric ratios of tissues: in the splenic in different parts of the pancreas, the volumetric ratios of tissues: in the splenic part, acinar tissues make up 77.3% of the total tissue volume, endocrine tissues - 3.5%, in the duodenal part of the organ these figures are 88.3% and 0.35%, respectively.

The study of the ultramicroscopic structure of the pancreas in rat pups of the control group showed that the ultrastructural structures of acinocytes have the shape truncated cone - acinocytes have a wide base and a narrowed apical part.

REFERENCES

1. N.K. Niyozov, S.M Akhmedova, R. D.Usmanov, U. M.Mirsharopov, A.U Nisanbayeva. Morphological Aspects of Pancreas Changes in Experimental Hypothyroidism // Jounal of education and scientific (JESM)) – Toshkent. 2023. Volume 2, Issue 2, P. 27-31

2. Н.Қ.Ниёзов, С.М.Ахмедова, А.У.Нисанбаева. Особенности морфологических изменений поджелудочной железы при экспериментальном гипотиреозе // Ташкентская медицинская академия «Медицинский журнал молодых ученых» № 6 (05), 2023 г. Том 1. С. 91-95

3. Н.Қ.Ниёзов, С.М.Ахмедова, А.У.Нисанбаева. Морфологические аспекты структурного изменения поджелудочной железы при экспериментальном гипотиреозе // Медицина и инновации. Ташкент. 2023 г. № 2. С. 91-96

4. Н.Қ.Ниёзов, С.М.Ахмедова, А.У.Нисанбаева. Структурное изменение поджелудочной железы при гипотиреозе// Ташкентская медицинская академия «Вестник» № 7, 2023 г. С. 65-67