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ABSTRACT BOOK

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MORPHOLOGICAL CHANGES IN THE PULMONARY TISSUE OF RATS OF AGED AGE UNDER CONDITIONS OF EXPERIMENTAL DIABETES I TYPE

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Introduction: Type 1 diabetes mellitus occupies the main place among the general morbidity, and as is known affects young and middle-aged people, and manifests itself in a wide range of complications. Target organs in chronic hyperglycemia, besides the well-known (vessels, nervous system, etc.), are lungs that are not enough investigated today.

Aim: Detect and explore the morphological lungs in conditions of aloxane diabetes.

Materials and methods. Three groups of white non-breeding rats of both sexes were studied, with terms of diabetes 10 days, 20 days, 30 days.Morphological indices of animals in each experimental group were compared with those in intact animals. The following research methods were used: scanning electron microscopy (micromorphomeria of conduction bronchioles width (SBP)), blood glucose levels determined by glucose oxidase method, glycosylated hemoglobin level (HbA1C).

Results During the morphometric study, it was found that within the first 10 days of the experiment, the SBI increased slightly and amounted to 65.52 ± 0.05 μm ($p < 0.05$), which indicates an increase of 3.1% compared to the intact group. Indicators of glucose in the blood and glycosylated hemoglobin were 14.8 ± 0.19 mmol /l and 6.3 ± 0.14% respectively, corresponding to a severe degree of diabetes mellitus.

At 20 days of chronic hyperglycemia, BPI rates increase to 67.3 ± 0.04 μm by 5.7% and by 2.7% in comparison with animals and diabetes mellitus for 10 days, respectively, which may indicate initial fibro-emphysematous changes in pulmonary stroma. The average glucose indexes in the blood and glycosylated hemoglobin was 12.3 ± 0.04 mmol /l and 7.1 ± 0.14% respectively, which corresponds to the average level of diabetes mellitus.

There were dilatation changes of the leading bronchioles for 30 days of aloxane diabetes, the size of which was 70.15 ± 0.52 ($p < 0.05$), which is 8.5% higher than intact animals. Blood glucose and glycosylated hemoglobin values were 10.2 ± 0.1 mmol/l and 7.4 ± 0.08% respectively, which corresponds to the average degree of diabetes mellitus.

Conclusions. Under the conditions of experimental aloxane diabetes, which corresponded to severe and moderate stages (from 10 to 30 days), dilatation changes in leading bronchioles develop in rats of mature age, which may indicate of initial changes in the pulmonary stroma of the emphysematous direction.

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