



Features of ultrastructural changes in type II alveolocytes in young rats on the background of chronic hyperglycemia



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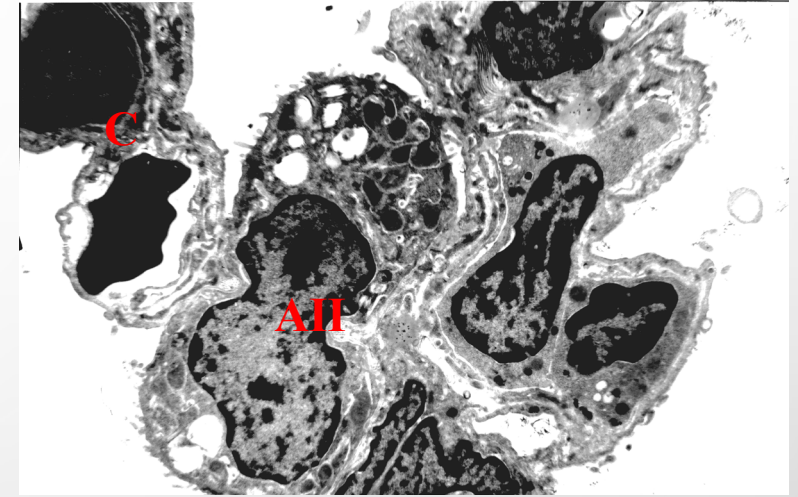
Aim. Detect and analyze at the ultrastructural level changes in the lungs of young rats under conditions of experimental chronic hyperglycemia.

Materials and methods. The study was performed on 24 white nonlinear laboratory rats. The experimental animals were divided into two series: experimental and intact. The experimental group was divided into two subgroups (6 animals) depending on the duration of the study: the first - with a duration of hyperglycemia of 30 days, the second - 60 days. For experimental simulation of hyperglycemia, against the background of baseline normal blood glucose levels and glycated hemoglobin concentration, the animals were injected once subcutaneously with a solution of alloxan monohydrate at a rate of 20 mg per 100 g of body weight. Electron microscopic examination was performed on an electron microscope PEM-125 K at an accelerating voltage of 75-100 kV. Photographing the obtained drugs at a magnification of 4,000 times was performed using a digital video camera Baumer / optronic Typ: CX 05c. Statistical data processing was performed using the nonparametric Mann-Whitney test.

Conclusions. In the lungs of young rats under conditions of experimental chronic hyperglycemia at the ultrastructural level, destructive changes, destruction and proliferation of type II alveolocytes are observed, which is the morphological basis for the violation of barrier (surfactant synthesis) and immunocompetent properties of lung tissue.

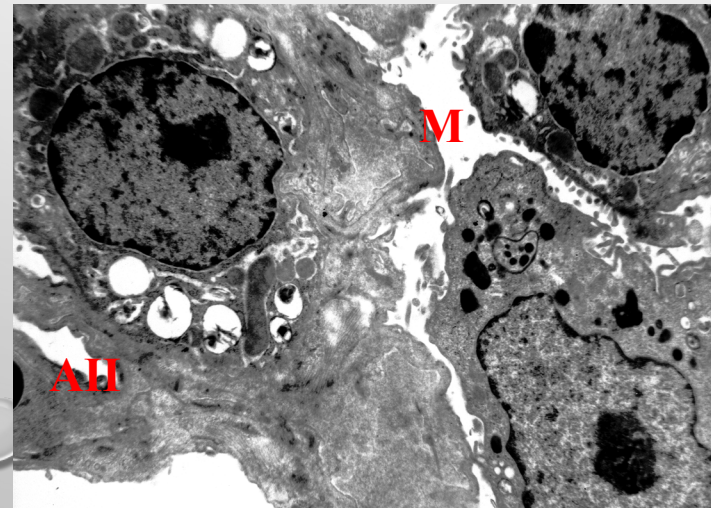
C - capillary; AII - alveolocyte type II; M - macrophage

Typical GAB: AII, capillaries with erythrocytes (intact animal)



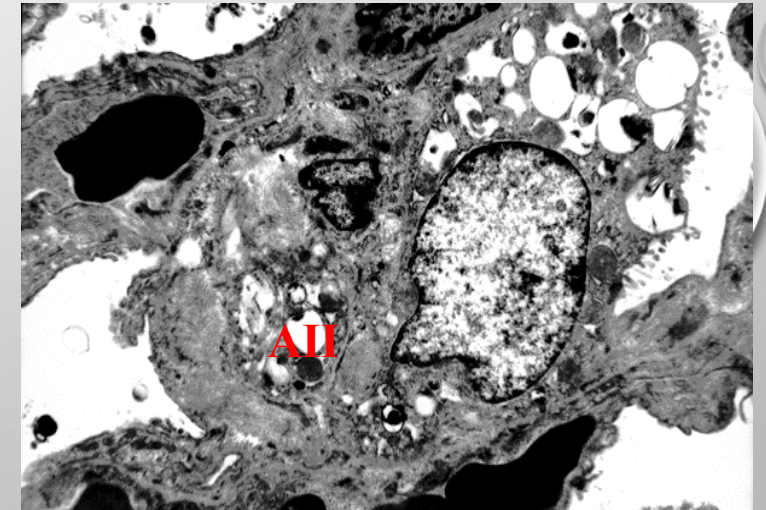
Blood glucose 5.2 mmol / l; HbA1c - 4.01%

30 DAYS OF HYPERGLYCAEMIA



Blood glucose 19.3 mmol / l; HbA1c - 7.1%

60 DAYS OF HYPERGLYCAEMIA



Blood glucose 13.8 mmol / l; HbA1c - 7.18%