

THE THYROID DYSFUNCTION EFFECT ON THE SKIN MAST CELLS FUNCTIONAL ACTIVITY IN THE AGE ASPECT ACCORDING TO LECTINOHISTOCHEMISTRY

Amount of thyroid pathology patients in Ukraine increased 3.7 times from 0.9 to 3.5 per 1000 population within a decade. The main reason of most of organs damage associated with hypothyroidism is decreased synthesis of number of cellular enzymes because of thyroid hormones deficiency. Mast cells (MC) play leading role in inflammatory processes, allergic reactions and in autoimmune diseases pathogenesis, since they produce various cytokines. Influence of maternal hypothyroidism on the progeny skin histogenesis and MC correlation is poorly studied. Hypothyroid condition was modeled in Wistar female rats by adding thyreostatic drug mercazolilum (methimazole) 5 mg/kg body mass. Thyroid glands and progeny skin pieces from the back on the 1, 10, 20 and 40 postnatal development days were fixed in 4% neutral formalin and embedded in paraffin. For MC detection slides were stained by Bismark brown, alcian blue (pH 2.5), toluidine blue. D-Man and β -DGal carbohydrate determinants were studied by use of GNA and PNA lectins labeled with horseradish peroxidase. Lectin receptors visualization was conducted in 3'3-diaminobenzidine tetrahydrochloride system in H_2O_2 presence. Counting the MC number and thyroid glands' morphometric parameters were conducted on 5 μ m thin sections by using UTHSCSA "Image Tool for Windows Version 2.00" (USA) computer program. Statistical analysis was performed using Student ttest. Body mass increase, changes in thyroid cells parameters and colloid structure were stated in experimental animals. The biggest MC amount was detected in control animals skin on the 1 day of postnatal development, slight decrease on 10 day and gradual increase till 40 day. MC amount with signs of degranulation increased in experimental animals skin at all stages of the research. Simultaneously, D-Man and β -DGal glycopolymers expression similarity was noted on MC surface. According to MC quantitative-qualitative indicators in skin, hypothyroid female rat progeny should be included into the risk group of immune status change and allergic reactions beginning.