The structural transformation of the immune and endocrine organs under dehydration

V.I. Bumeister, O.O. Prykhodko, O.V.Oliinyk

Sumy State University, Anatomy Department, 31 Sanatornaya Street, Sumy 40007, Ukraine

Our aim was to discover structural and morphological changes in spleen, thyroid gland and thymus due to extracellular dehydration.

Rats were divided into 2 groups. 1st group which consisted of 5 rats, was used as a control group. 2nd group - experimental, 5 rats, for two months were kept on no-salt diet with fresh water replaced with bidistilled water mixed with diuretic (LASIX®) to simulate the average extracellular dehydration. These rats have shown extracellular water deficiency of 6-10%. Hematoxylin and eosin-stained as well as Van Gieson's stained sections were made, which were then examined with optical microscope.

The results of our study have shown signs of lowering the concentration of colloid in thyroid follicles. Morphometric study has showed enlargement of the follicles, indicating an increase in functional activity of the thyroid gland. There were evidence of vacuolization and lysis of follicular cells' nuclei.

Dehydration causes in thymus hyperplasia of endotelial cells and growth of connective tissue in vessels, transformation of parenchyma into adipose tissue. The amount of lobules in lobes of thymus decreased, destruction and death of lymphocytes occurred. In the

dehydrated spleens, myriad morphological changes such as reduced size in marginal zone, minimal or near flaccid cells of the red and white pulps were seen.

Extracellular dehydration results in morphological reorganization of thymus, thyroid gland, spleen.

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