

**Ukrainian Association of Scientists of Economics
Academic Society of Michal Baludyansky**

BOBE



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Перспективні напрями наукових досліджень - 2015: матеріали міжнародної науково-практичної конференції. — В 2 т. - Т.2. - К.: Вид-во «Центр навчальної літератури», 2015. - 175 с.

Матеріали міжнародної науково-практичної конференції «Перспективні напрями наукових досліджень - 2015» містять тези доповідей учасників конференції за сесіями: соціальна (перспективні напрями наукових досліджень в економіці, психології та соціології, політології, правознавстві, міжнародних відносинах та педагогіці), гуманітарна (перспективні напрями наукових досліджень у філософії, археології, культурології та релігієзнавстві, філології та лінгвістиці), фундаментальна (перспективні напрями наукових досліджень у фізиці та астрономії, хімії, науках про землю (геологія, географія, мінералогія, гідрогеологія, кліматологія), математиці, біології та екології) та прикладна (перспективні напрями наукових досліджень в медицині і фармації, інформаційних технологіях, механічній, енергетичній та електричній інженерії, хімічній інженерії та біоінженерії, архітектурі та будівництві, аграрних науках).

Для науковців, викладачів вищих та середніх навчальних закладів, державних службовців, представників ділових кіл, аспірантів та студентів.

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International scientific and practical conference «Perspective trends in scientific research - 2015» contains abstracts of participants on directions such as the social section (which includes the perspective directions of scientific researches in Economics, Psychology and Sociology, Political science, Law, International relations and Pedagogy), the humanitarian section (which includes the perspective directions of research in Philosophy, Archaeology, Cultural studies and Religious studies, Philology and Linguistics), the fundamental section (which includes the perspective directions of scientific researches in Physics and Astronomy, Chemistry, Earth Sciences (Geology, Geography, Mineralogy, Hydrogeology, Climatology), Mathematics, Biology and Ecology) and applied section (which includes the perspective directions of scientific researches in Medicine and Pharmacy, Information technologies, Mechanical engineering, Energy engineering, Electrical Engineering, Chemical engineering and Bioengineering, Architecture and Housing Construction, Agricultural Sciences).

Materials will be useful for scientists, teachers, government officials, business representatives, postgraduates and students.

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ON THE EXTRACELLULAR DEHYDRATION

A number of surgical and infectious diseases as well as diseases of children`s age are accompanied by dehydration. Intense dehydration leads to the development of a number of complications. Study of the structural features of the spleen is an urgent problem, as the spleen being the organ of immunogenesis is responsible for effectiveness of cellular and humoral immune responses of both innate and acquired immunity. Body dehydration (lack of water) reduces the secretory activity of digestive glands, which facilitates water preservation in the body. Stomach as one of the central organs of the digestive system plays an important role in maintaining water-salt balance of the body.

Aim. To understand the structural transformation of the spleen and stomach during extracellular dehydration.

Materials and methods. Our aim was to discover structural and morphological changes in spleen and stomach due to extracellular dehydration. Outbred white laboratory rats with average weight of 270.0 grams were divided into 2 groups. The 1st group which consisted of 10 rats, was used as a control group. The 2nd group - experimental, 10 rats, for 2 months were kept on no-salt diet with fresh water replaced with bidistilled water to simulate the average extracellular dehydration of heavy degree. (LASIX®) was injected intraperitoneally, 3 mg per 1 kg of animal weight every 24h. These rats have shown extracellular water deficiency of more than 10% related to the control. Hematoxylin and eosin-stained as well as Van Gieson's stained sections were made, which were then examined with optical microscope.

Results. During extracellular dehydration, we noted nonspecific changes of spleen: the destruction of the capsule, trabecules, as well as atrophy and relative fibrosis in the form of appearance of a significant amount of red pulp of various sizes of collagen and elastic fibers. Megacaryocytes completely disappear, there is a

formation in the red pulp of arteriovenous anastomoses. The white pulp remains only in the form of small clusters of lymphocytes and reticular cells.

Other changes were observed in the fundal part of the stomach. As a result of prolonged exposure of extracellular dehydration factor, thickening of the mucosa and a large number of sharply extended veins was observed. Lysis of collagen fibers was detected in the submucosa.

Complete disorganization of the gastric glands, especially necks, is shown in the fundal part of the stomach. Stomach fields are sharply changing, decreasing in size. We have determined that atrophy of the mucosa cells is a result of stomach dehydration influence, as their nuclei are at varying degrees of necrobiosis until full pyknosis and wrinkling. Epithelial cells are low and contain dark elongated nuclei. In the course of complete destruction and atrophy of chief and accessory cells of the glands, there is rapid proliferation of parietal cells. In these cases parietal cells of different sizes and shapes, closely adjacent to each other, form broad light fields.

All of these changes lead to a complete erasure of the normal structure of the glands. Their glandular structure is preserved only in some places at the bottom.

Conclusion. These morphological changes in the spleen and stomach during dehydration can cause the development of immunodeficiency states and other serious consequences for the body.

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