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Modern Aspects of Morphological Changes in the Adrenal Glands in Chemical Burn of the Digestive Tract

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Along with increased production of corticosteroids by the adrenal cortex in response to stress reactions, reactive changes in the sympathoadrenal system occur. In this case, massive amounts of adrenaline are released into the blood and accumulate in the tissues, with a parallel decrease in the content of noradrenaline. Adaptation in the adrenal glands during critical anemia and hyperoxia of the body occurs first due to the medulla, then due to the cortex. Even short-term hypodynamia and hypokinesia contribute to the tension of the adrenal cortex, which is manifested by an increase in their mass, the volume of cells and their nuclei, a decrease in the amount of lipids in the areas of the cortex of the organ. In the pathogenesis of depletion of the functional resources of the adrenal cortex during prolonged immobilization stress, a certain role is given to the activation of lipid peroxidation processes, the cause of which is possibly a decrease in the content of ascorbic acid and α -tocopherol in the cortex of the organ. Preliminary administration of synthetic corticotropin - synactone during immobilization of animals from one to 72 hours causes an increase in the functional activity of the cells of the zona fasciculata of the adrenal cortex and has an adaptogenic effect, protecting the cells from overstrain and destruction of cytoplasmic structures.

An increase in the flow of physical factors perfused through the adrenal glands increases the function of the adrenal cortex. Activation of their intracellular regeneration is also noted. At the initial stage of development, an increase in the morphofunctional activity of the adrenal cortex occurs mainly due to the zona fasciculata. Restoration of the adrenal cortex under the influence of various factors occurs primarily in the zona fasciculata. The zona fasciculata plays a major role in the compensatory and adaptive reactions of the adrenal gland; when its activity decreases, the zona glomerulosa and zona reticularis cannot provide the required level of corticosteroid secretion.

When exposed to irritating factors, there is a corresponding response from the adrenal glands, especially the hormones of the medulla. The development of a uniform reaction of the adrenal glands is characteristic of various types of stressors: prolonged soft tissue crush syndrome, exogenous hyperthermia, hemic hypoxia, hemolytic anemia, endotoxin shock, reflex intestinal paralysis, exposure to pesticides, as well as hypo- and hyperthyroidism. At the same time, at the early stages of exposure to stressors, activation of the adrenal glands is noted, at later stages -

inhibition of its function. Also, with influenza pneumonia, obstructive bronchitis, cholecystitis, cryptococcosis, an increase in the glucocorticoid function of the adrenal glands is noted at the onset of the disease, and later - inhibition of their activity. The long-term course of diseases apparently leads to the depletion of the reserve capacity of the adrenal cortex.

Literature

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