# MORPHOLOGICAL AND BIOCHEMICAL CHANGES IN THE HIPPOCAMPUS AFTER THE DESTRUCTION OF DORSAL AMIGDALOFUGAL WAY

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With the object of studying genesis and functional significance of hippocampal theta-rhythm in this study under chronic experiments on rabbits in experimental conditioned drinking rabbit an attempt was made to elucidate the participation of brain limbic structure in the mechanisms of formation of hippocampal theta-rhythm. Destruction of dorsal amygdalofugal tract in contrast to ventral one has been found lead to full and irreversible blockade of hippocampal theta-rhythm. During, elektro- and chemostimulation (carbocholine, serotonine and noradrenaline) of different hypothalamic nuclei, amygdala, reticular formation and medial septum nucleus in intact of dorsal amygdalofugal tract is registered theta-rhythm of different frequency. Serotonin increased the power of oscillations within a 5 to 6 Hz range, where as noradrenaline shifted the maximum of distribution to a 4 to 5 Hz range. In contrast to the effects of biogenic amines, the effects of carbachol and strychnine took the form of intensified generation of high-amplitude theta waves with a frequency of 6.0-7.5 Hz. But after the destruction of hippocampal theta-rhythm activity only took-place durinq intrahippocampal ($CA_3$ field) application of strychnine and carbocholine rather than serotonine and noradrenaline.

Examination of the slices of the hippocampus and septum of experimental animals after coagulation of the dorsal amygdalofugal tract demonstrated that profound morphological changes were detected in both neurons and glial cells of these regions. Morphological studies developed deep degenerative changes just lyzis of Nissel matter, swelling of apical dendrites, hyperchromatism of nuclei, absence of tigroid matter in neurons and glial cells in different nuclei of hypothalamus, amygdala, reticulyar formation, medial septum nucleus and hippocampus under destruction of dorsal amygdalofugal tract. Neurons and glial cells are swelled. Biochemical assay by disk elektrophoreze showed disturbance of protein spectrum in all regions of hippocampus and medial septum nucleus under destruction of dorsal amygdalofugal tract. In none of these studied regions was not observed any protein fraction.

One of the factors which modulates the excitability of neurons in septo-hippocampal system is supposed may be disturbance of hypothalamo-hypophysial neurosecretory system under the influence of destruction of amygdala-hypothalamic relations.