

BIOCHEMICAL CHANGES IN THE HIPPOCAMPUS AND THE MEDIAL NUCLEUS OF THE SEPTUM BEFORE AND AFTER THE DESTRUCTION OF DORSAL AMIGDALOFUGAL WAYS

R.M.Bagirova

Azerbaijan State Academy of Physical Culture and Sports, Department "General and sports physiology", Baku, Azerbaijan, rafiga_bagirova1@mail.ru

Abstract

The method of recording the electrical activity study the impact of various nuclei of the hypothalamus, amygdala, reticular formation, the medial nucleus of the septum and hippocampus on dynamic characteristic EEG dorsal (CA_1 and CA_3), ventral hippocampus, dentate gyrus and medial nucleus of the septum, recorded before and after the destruction of the dorsal and ventral amigdalofugal ways. It was shown that the electrolytic destruction of dorsal amigdalofugal way, unlike the ventral leads to a complete and irreversible blockade of hippocampal theta rhythm. To elucidate the reasons for these changes were produced biochemical research in the dorsal, ventral hippocampus and the medial nucleus of the septum before and after electrolytic destruction of the dorsal amigdalofugal way.

Studies have shown that up to destruction of dorsal amigdalofugal way in the dorsal hippocampus allocated 8 fractions, 7 fractions in the ventral and medial nucleus of the septum - 9 fractions. The peaks were constructed each of the obtained fractions by densitometry. On the basis of this method was given percentage of each protein fraction compared to with common proteins. Revealed that before the destruction of dorsal amigdalofugal way in the dorsal hippocampus albumins constitute 8.58%, in the ventral hippocampal region - 6.91%, and in the medial nucleus of the septum albumins constitute 32.6%. Quantity of albumin depends upon the age and species of animal and the conditions of the experiment. Prealbumin in the dorsal hippocampus up - 1.42%, ventral his department - 5.06%, and in the medial nucleus of the septum - 3.52%. Later fractions neyroglobulins. It was found that in the normal state neyroglobuliny are: in the dorsal hippocampus α - neyroglobulins - 38, 1%, β -neyroglobulins - 37.34%, γ -neyroglobulins up 14.6% in the ventral hippocampus α -neyroglobuliny - 24.28%, β - neyroglobuliny - 34.55% up γ -neyroglobuliny 28.97%, and in the medial nucleus of the septum α -neyroglobuliny - 19.78%, β -neyroglobuliny - 39.4%, γ -neyroglobuliny of 4.8% of total proteins. Biochemical studies have shown that the destruction of of dorsal amigdalofugal way leads to irreversible changes in the protein spectra of dorsal, ventral hippocampus and the medial nucleus of the septum: in none of the investigated areas were not received any protein fraction produced after the destruction of dorsal amigdalofugal way.

Based on the above it can be concluded that the change of water-soluble proteins in the synthesis of the dorsal (CA_1 , CA_3) and the ventral hippocampus, medial septum nucleus reflected in lowering the excitability of the brain structure and there is apparently influenced by disorders of the pituitary-adrenal system resulting produced by the destruction of dorsal amigdalofugal way.

Keywords: dorsal amigdalofugal way, protein fraction, hippocampus, septum.