



# **ABSTRACT BOOK**



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## **MORPHOLOGICAL CHANGES IN CEREBELLAR VERMIS IN CEREBRAL CIRCULATION DISORDERS**

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**Introduction.** In Ukraine, annually diagnosed more than 130 thousand cases of acute disorders of cerebral circulation, mortality rate which is 30%. The frequency of ischemic infarcts of the cerebellum is 5 - 7% of all cases of cerebral infarction. The frequency of hemorrhage in the cerebellum is 4 to 10% of all cases of cerebral hemorrhage and mortality in them ranges from 20 to 75%. The purpose of the study – to determine the morphological features of the cerebellum in acute cerebral circulatory disorders.

**Materials and methods.** In the study used cadaveric material. Morphological investigation was conducted on 24 human cerebellum. The dead were divided into 3 groups: died of ischemic stroke – 7 people; died of hemorrhagic stroke – 7 people; control group – 10 persons who died of causes unrelated to CNS disorders. In the study used the following methods: analysis of medical documentation (were studied medical history, autopsy reports); macroscopic method; histological method – hematoxylin-eosin staining, Nissl staining method; morphometry; statistical analysis.

**Results of research.** During morphological studies also were found the following changes of morphometric parameters: the difference of mean values of morphometric parameters of the cerebellar cortex with cerebrovascular accident (CVA) and in the control group; length ganglion layer and average distance between the centers of Purkinje cells are increased with CVA of both types; absolute number of Purkinje cells (CP) in folium, density of Purkinje cells (number of CP per 1 mm of ganglionic layer) and area of cross section of bodies of Purkinje cells are decreased with CVA of both types. Common changes in morphometric parameters: increasing of the size of cerebellar foliums as a result of cerebral edema; absolute and relative reduction of CP as a result of their death; reduce area of cross section of body of Purkinje cells in the cerebellar cortex as a result of degenerative changes of the CP. Differences of morphological changes in ischemic and hemorrhagic types of CVA: in ischemic type CVA pathological changes of Purkinje cells are more pronounced than in the hemorrhagic type; in ischemic type found expressed changes in all lobules. The most pronounced changes are observed in the phylogenetically younger parts of the cerebellum, the least damaged phylogenetically older parts; in hemorrhagic CVA type pathological changes more pronounced in the lobules of cerebellar vermis lying on its lower surface.

**Conclusions.** Detected morphological changes can be regarded as the basis of functional changes in the cerebellum, which are found with CVA extracerebellar localization (the phenomenon of cross-cerebellar diastasis). These changes indicate a lesion of the brain areas remote from the primary lesion of CVA, which may influence the pathogenesis, disease course and thanatogenesis with CVA.