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Letter to Editor Open Access

Nosology Lesions of the White Matter of the Brain in Newborns and Young Children

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Description

Important problem of children's neurology is development of a nosology of lesions of the white matter of the brain at newborn children. It is primarily about such diverse lesions as Periventricular Leukomalacia (PVL), Diffuse Leukomalacia (DFL), Subcortical Leukomalacia (SL), Telentsefalic Gliosis (TG; synonyms: Perinatal Telentsefalic Leukoencephalopathy), Periventricular Hemorrhagic Infarction (PHI) and Multicystic Leukomalacia. All lesions have their own characteristics in the etiology, pathogenesis and clinic, which are not sufficiently developed [1].

PVL - a small focal, usually bilateral, symmetrical with respect to coagulation and mainly periventricular white matter of the brain infarctions mostly in newborns [2].

DFL - is often common macrofocal colliquation infarcts central and periventricular regions of the cerebral hemispheres of the brain mainly in very preterm infants.

SL - subcortical foci mostly colliquation necrosis of the white matter of the cerebral hemispheres of the brain.

PHI - periventricular hemorrhagic softening and central areas of the white matter surrounding the lateral ventricles of the brain. Synonyms in world literature: common red softening, central hemorrhagic encephalopathy, hemorrhagic periventricular leukomalacia.

TG - bilateral focal or diffuse lesion mainly periventricular white matter areas of the brain characterized by loss of oligodendrocytes, hypertrophy and proliferation of astrocytes.

ML - form lesions, characterized by the formation of multiple cysts in the white matter, the cortex and subcortical cerebral hemispheres. Synonyms in world literature: cystic encephalomalacia, multicystic encephalopathy, polycystic encephalomalacia etc.

Clinical physicians rely on the results of neurovisualization methods of research (first of all neurosonography), but experts of these methods have no enough accurate criteria on differential diagnostics of these lesions, didn't conduct enough neuroimaging-morphological researches for exact judgment about nature of pathological processes. The existing ultrasonic classification of PVL L.S. De Vriese [3-6] suffers from inaccuracies; it is possible to refer actually all specified lesions of white matter of a brain to it. . Experts of a neurosonography in the conclusions write diagnoses which that exceed the diagnostic possibilities of the method (must describe the location and nature of echodensity) and actually don't carry out differential diagnostics between the specified damages of a brain. Their most frequent diagnosis: PVL. Unfortunately, this leads to over diagnosis of PVL - one of the forms of white matter lesions of the cerebral hemispheres of the brain. Detection of cysts in the cerebral hemispheres of the fetuses, which may have different origins, and erroneously referred to as PVL. So now we developed two views of PVL: clinical in which to PVL include virtually any lesion of the white matter of the cerebral hemispheres of the brain, and the classical (morphological) that applies only to the PVL periventricular foci of ischemic necrosis of the brain. However, the idea of the diseases should be one, the clinic should not contradict the morphology - basic science. Therefore, the need for further study of clinico-morphological mapping of major white matter lesions of the brain in infants and young children. It is necessary to take into account the periventricular encephalitis and other disorders. From accurate diagnosis affects the prognosis of the disease. Treatment should be individualized and depend on exact nature of pathological process in white matter of the brain. Further development of nosology white matter lesions of the cerebral hemispheres provide a world progress of science and practice.

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