

Neuroimaging features of structural changes in the brain and their relationship with different forms of the cerebral palsy in children

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Background: Cerebral palsy (CP) is one of the most disabling diseases of childhood, but its pathogenesis is still controversial. Aim: To compare various forms of CP with location and type of brain lesions. Methods: Under our supervision, there were 134 children (boys - 80, girls - 54) at the age 3-10 years with different forms of CP: 1st group with double hemiplegia - 55 patients (41.5%), 2nd group with spastic diplegia - 43 patients (32%), 3rd group with hemiparetic form - 21 patients (15.6%), 4th group with atonic-astatic form - 15 patients (11.1%). Results: The following MRI abnormalities were detected: in the 1st group: cystic degeneration - 17 patients (12.6%); microcephaly - 6 patients (4.4%); polymicrogyria - 5 patients (3.7%), focal cortical dysplasia - 3 patients (2.2%). In the 2nd group periventricular leukomalacia was detected predominantly - 38 patients (28.3%). In 3rd group hemiatrophy of the brain was detected in 6 cases (4.4%), cystic degeneration in 6 cases (4.4%), schizencephaly in 2 cases (1.49%) and pachygyria in 6 cases (4.4%). In the 4th group, cerebellar hypoplasia was revealed in 5 cases (3.7%) and in 4 children (2.9%) Dandy-Walker anomaly was detected. In 36 patients (26.9%) MRI did not reveal any detectable brain changes, despite the reliable diagnosis of CP. Conclusions. Periventricular leukomalacia was the most frequent MRI abnormality and it was associated with a diplegic form of CP. Apparently, for each form of CP, there is the most vulnerable "critical" zone in the process of neuroonthogenesis, which requires further investigation.