Imaging aspects in Spastic Cerebral Palsy in children

[*1,2]Ludmila Cuznet, [1,2]Svetlana Hadjiu, [1,2]Cornelia Calcii, [1]Corina Griu, [1]Stela Racovita, [1]Nadejda Lupusor, [1,3]Ludmila Feghiu, [1,2]Mariana Sprincean, [1,2]Ninel Revenco

[1]*Nicolae Testemitanu* State University of Medicine and Pharmacy, Chisinau, the Republic of Moldova
[2]Institute of Mother and Child, [3]National Center of Epileptology, Institute of Emergency Medicine Chisinau, the Republic of Moldova

*Corresponding author – Ludmila Cuznet. E-mail: lcuznet@yandex.ru

Abstract

Background: Magnetic resonance imaging (MRI) is commonly used in the investigation of children with cerebral palsy (CP). This investigation suggests hope in future therapeutic interventions of children with CP. The aim is to study the relationship between spastic CP type and brain MRI aspects.
Material and methods: In the years 2018-2020, 78 imaging results of children with spastic CP (age more than 5 years) were analyzed: 28 – tetraplegic CP (TCP), 26 – hemiplegic (HCP), 24 – diplegic form (DCP). The imaging results were analyzed by a trained specialist.
Results: Brain structural abnormalities relevant to spastic CP types were detected in 72 (92.3% [I 99.19 – 95.61], p = 0.01) children. TCP changes were detected in all children; those with DCP – at 22 (91.7% [I 97.34 – 86.06], p = 0.05); HCP – in 25 (96.2% [I 99.97 – 92.43], p = 0.01) cases. Common: ventriculomegaly (55.1%) – TCP and DCP, cerebral atrophy (53.8%) – TCP, unilateral porencephalic cerebral cyst (30.8%) – HCP; bilateral cysts (29.5%) of various localizations (cortical – 30.4% TCP and subcortical – 69.6% DCP). Other abnormalities: atrophic lesions in the basal and thalamic ganglia region (5.1%), diffuse porencephaly (2.6%), periventricular gliotic changes (17.9%).
Conclusions: Brain structural abnormalities in CP are varied and can be detected frequently by advanced imaging techniques, reflecting the relationship between CP form and characteristic imaging lesions. Early detection of brain abnormalities in children with CP may suggest the remote prognosis of the disease and the correct management of affected children.
Key words: cerebral palsy, imaging, child.

Evolution of status epilepticus in children

[*1,2]Cornelia Calcii, [1,3]Mariana Sprincean, [1]Nadejda Lupusor, [1]Corina Griu, [1,2]Ludmila Cuznet, [1]Stela Racovita, [1,4]Ludmila Feghiu, [1,2]Svetlana Hadjiu

[1]*Nicolae Testemitanu* State University of Medicine and Pharmacy, [2]Institute of Mother and Child
[3]Laboratory of Neurobiology and Medical Genetics, *Nicolae Testemitanu* State University of Medicine and Pharmacy
[4]National Center of Epileptology, Institute of Emergency Medicine, Chisinau, the Republic of Moldova

*Corresponding author – Cornelia Calcii. E-mail: cornelia.calcii@usmf.md

Abstract

Background: Status epilepticus is defined as a neurologic emergency in which there is at least 5 minutes of continuous seizure activity or recurrent seizures with a return to baseline between seizures. The aim of this research was evaluation of clinical and etiological profile of refractory status epilepticus (RSE) among children.
Material and methods: The study was carried out between 2017 – 2021. All children have presented convulsive status epilepticus (SE), subsequently with development of RSE (refractory status epileptic). We try to identify the main characteristics of children with RSE and those without an evolution of RSE.
Results: Fifty-five children, out of whom 32 boys with SE were enrolled in the study, of which 20 children (36%) developed RSE. Central nervous system (CNS) infections were the most common causes of SE and development of RSE (51% of SE and 53% of RSE, p > 0.05). Noncompliance of antiepileptic medication served as the second cause for evolution of RSE. The overall mortality rate was 10.9%, the chances of death in case of RSE (20%) being higher than in case of SE (5.7%). The unfavorable prognosis was seven times higher in children with RSE, compared to children who developed SE (PR = 7.0; 95% CI:1.6 – 22.3).
Conclusions: In the management of CNS infections the possibility of developing RSE should be considered and promptly managed in an intensive care unit in order to reduce the risk of mortality and morbidity of this severe neurological condition.
Key words: status epilepticus, refractory status epilepticus, children.