STROKE IN NEWBORNS, INFANTS AND SMALL CHILDREN: CLINICAL ASPECTS

Authors:

Nadejda Lupușor^{1,2}, Ninel Revenco^{1,2}, Mariana Sprincean^{1,2}, Cornelia Calcii^{1,2}, Corina Griu¹, Svetlana Hadjiu^{1,2}

State Medical and Pharmaceutical University „Nicolae Testemitanu”¹,
SPI Mother and Child Institute²,
Chisinau, Republic of Moldova

Introduction

Stroke in children is much less prevalent than in adults and is manifested with nonspecific clinical symptoms. The aim of this study was to analyze the clinical symptoms of stroke in children depending on age.

Material and methods

The study included a group of 216 children with stroke, aged from birth to 3 years, admitted in the pediatric neurology departments. The clinical symptoms were evaluated through statistical analysis using Statistica 7.0 (Statsoft Inc) Programme.

Results

Statistical analysis allows modeling of suggestive symptoms of stroke in children depending on their age. In newborn these are: seizures (p=0,000), non-focal neurological signs (p=0,002), altered state of consciousness (p=0,006), generalized motor abnormalities (p=0,004). In children from 28 days to one year of life these are: seizures (p=0,006), hemiparesis (p=0,000), decreased ability to squeeze the fist (p=0,004), consciousness disorders (p=0,003). In children from 1 to 3 years, these are: hemiparesis (p=0,003), seizures (p=0,000), sensory disorders (p=0,004), focal movement disorders (p=0,002). Brain magnetic resonance imaging data in newborn demonstrated that the most affected sites are the left hemisphere (67,8%), anterior and middle cerebral arteries (63,9%); multi-focal lesions are in 33,2% of cases. In children from 1 to 3 years the middle cerebral artery is affected in 55,6% and the left hemisphere in 78% of cases.

Conclusions

Diagnosis of stroke in children can often be delayed since the clinical symptoms are subtle and nonspecific, often being misdiagnosed. Logistic regression method allows establishing suggestive stroke symptoms, attributed to the category of age, which can help substantially improving the diagnosis.

References

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Newborn (n=202)				
Symptoms	Abs.	P±ES (%)	95CI	P
Seizures	158	78,2	75,3-81,1	0,001
Non-focal neurological signs	136	67,3	64,0-70,6	0,001
Altered state of consciousness	147	72,8	69,67-75,93	0,001
Generalized motor abnormalities	128	63,4	60,01-66,79	0,001
Children aged from 28 days to one year of life (n=5)				
Hemiparesis	5	35,7	22,89-48,51	0,05
Decreased ability to squeeze the fist	3	60	38,09-81,91	0,001
Seizures	4	80	62,11-97,89	0,001
Consciousness disorders	3	60	38,09-81,91	0,001
Children aged from 1 to 3 years (n=9)				
Hemiparesis	5	55,6	39,04-72,16	0,01
Focal movement disorders	6	66,7	50,99-82,41	0,001
Sensory disorders	7	77,8	63,94-91,66	0,001
Seizures	7	77,8	63,94-91,66	0,001