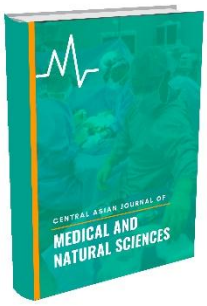
CENTRAL ASIAN JOURNAL OF MEDICAL AND NATURAL SCIENCES



Volume: 02 Issue: 01 | Jan-Feb 2021 ISSN: 2660-4159

www. cajmns.centralasianstudies.org/index.php

Comparative character of clinical and neurological syndromes of encephalitis in children with the consequence of neuroinfection

Shukhrat Niyazov [1]
Aziza Djurabekova [2]
Gulandom Khakimova [3]

EMAIL :

Received 26th December 2020,
Accepted 17th January 2021,
Online 06th February2021

[1,2,3]***Samarkand State Medical Institute***

ABSTRACT: A special place among neuroinfections in children is occupied by encephalitis, the frequency of which over the past 5 years has increased to 19% compared with the period 1990–2000. (ten%). According to the WHO, the frequency of registration of encephalitis annually is 7-9 cases per 100,000 population, while children account for up to 70-75% of all cases. It is known that even a favorably ended viral meningoencephalitis is subsequently left in children with a neurological defect that causes mental delay and sensory deficit. Infectious diseases of the nervous system in children account for up to 3-5% of the entire infectious pathology of childhood. At the same time, the severity of the lesion and the frequency of disabling manifestations determine the relevance of their study.

KEYWORDS: encephalitis, neuroinfections, children.

Aim. To study the comparative nature and severity of neurological deficit in terms of the severity and age of encephalitis in children.

INTRODUCTION

Epidemology of encephalitis (EF) and meningoencephalitis (ME) depends on the underlying cause. The annual occurrence of typical Eph and ME is uncertain and differs from region to region. According to studies in the USA, Europe and Israel, the frequency of occurrence of Eph and IEP in the population ranges from 1 to 4 cases per million, with a bimodal distribution of age representation.

Material and research methods. The survey was carried out in the Samarkand region for 5 years (2015-2020). At the first stage of the study, in accordance with the tasks set, children were analyzed, for the sample and for the milestone period, 172 patients with encephalitis and meningoencephalitis were registered, the largest percentage came to the region of Samarkand, Urgut

and Pastdargam (in terms of population they are close to each other). According to the etiological structure of the disease, a disease caused by viruses was detected (enterovirus 23.8%, influenza virus 21.5%, herpes virus 19.1% TORCH infection was important in children with intrauterine infection 18.1%, complications after pneumonia 9% and after sepsis 4%). Some of the children were examined in dynamics during the acute state and during the chronic state. Some children were examined only during the period of a chronic condition. The main examination method, of course, was the standard neurological examination of the syndromic complex. The severity of the condition and the severity of neurological deficits were assessed using the FIN scale. Modified Rankin scale. The FIN scale of functional independence consists of 18 items reflecting the state of motor and intellectual functions. The total score can be from 18 to 126 points; the higher, the more complete the independence of the patient. Additional research methods included neuroimaging of the brain (MRI), consultation with a pediatrician (to clarify the somatic status), an otolaryngologist, and an ophthalmologist. Statistical data were processed on an individual computer.

Research results. The causes of encephalitis and meningoencephalitis in children are diverse and, as a rule, are associated with inflammatory and relatively rare diseases and conditions, which requires a qualified diagnostic search, assessment of the prognosis of the disease and differentiated therapy.

Evaluation of subjective neurological symptoms at the time of admission revealed complaints of a different nature in patients with Eph and in different age groups. 62 (43.1%) patients complained (according to the mother) of paresis of the arms and legs and difficulty in walking: 10 (6.9%) in young children, 19 (13.2%) in preschool children and 33 (22, 9%) children of school age. Also, 16 (11.1%) complained of speech impairment before speech development lag. If divided by age, then in children 1-3 years old 6 (4.2%), 4-6 years old 2 (1.4%) and 8 (5.6%) children aged 7-15 years presented such complaints. 27 (18.8%) patients complained of convulsions. 5.6% of patients complained of unsteadiness when walking. Disorders from the cranial innervation in various combinations (more often in the form of central paresis of VII, XII pairs, peripheral paresis of III, IX, X, XII pairs of FMN) were almost equally observed in (36 ± 0.305) examined subjects. Oculomotor disorders were noted in both groups. In children of early and preschool age (33.3 ± 0.02%), in school age (10.34 ± 0.050%). Swallowing and phonation disorders occurred in 5.8% of all patients.

The examination of the motor sphere showed that 62 (40.1%) patients had motor disorders. Thus, in patients with Eph, central tetraparesis was noted (29; 20.1%). 33 patients had central hemiparesis (27.2%). When the lesion was localized in the cerebellum (6; 4.1%), patients had ataxia. In 2 patients, mild ataxia was detected and they could move around the room. One patient had severe ataxia.

Myoclonic hyperkinesis does not disappear during sleep, 16 (11.1%) children examined had hyperkinesis, 9 (11%) patients were found at the age of 7-15 years, more often in children of early and preschool age... In young children with an increased readiness for seizures, encephalitis often began with seizures, apart from clonic seizures, tonic tension of the entire muscles and seizures resembling minor seizures were observed. In young children, 3 (10.7%) patients, 6 preschool children (17.6%) and school-age children 18 (21.9%) have persistent convulsive syndrome.

The severity of the condition and the severity of neurological deficit in the examined patients with Eph were assessed using the FIM scale. The total clinical score on the scale at the time of admission in young children as a whole was 34.5 ± 0.11 points. In patients of preschool age, the total clinical score on the scale was 56.4 ± 0.28 points, in children of school age, 64.2 ± 0.24 points.

Depending on the severity of the disease, all examined were divided into 3 degrees (Table 1). The mild degree was 50 patients with mild EF, in which the total clinical score was 81.8 ± 0.24 points according to the FIM scale. These patients showed a slower recovery of neurological deficits. In general, older patients were characterized by higher scores than young children.

Table 1

Distribution of patients depending on the severity of encephalitis according to the FIM scale

Severity	Age	FIM score
Light n=50 (34,7%)	1-3 лет (n=0)	0
	4-6 лет (n=9; 26,5%)	82,6±0,18
	7-15 лет (n=41; 50%)	75,8±0,43
Medium n=30 (20,8%)	1-3 лет (n=0)	0
	4-6 лет (n=13; 38,2%)	56,5±0,11
	7-15 лет(n=17; 20,7%)	55,7±0,13
Severe n=64 (44,5%)	1-3 лет (n=28; 100%)	34,5±0,11
	4-6 лет (n=12; 26,5%)	37,4±0,11
	7-15 лет (n=24; 29,3%)	37,4±0,14

Patients with moderate severity of Eph were 30 children (20.8%), of which 38.2% of patients were children of preschool age, and 20.7% were children of school age, young children with moderate severity were not found. The total clinical score in sick children of early age is 34.5,110.11 points on the FIM scale, while in preschool age the indicators on the scale were slightly higher, amounting to 56.4□0.28 and in school-age children it was 64.2□ 0.24 points. More pronounced focal neurological symptoms in young children were combined with convulsive syndrome in 26% of cases, mental retardation in 15%; in 12% of cases, there was a secondary stem syndrome. The recovery of the neurological deficit was less rapid. At the same time, the tendency towards the normalization of the condition of patients was determined only at 2-3 weeks of the disease, that is, later than in patients with a mild severity of the disease. In 60 patients with severe encephalitis, 40.8%, in whom encephalitis was observed in 21.2% of cases at an early age, 25% in preschool children and 53.7% of cases at school age. In all patients, along with gross focal neurological symptoms, psycho-speech disorders were determined.

The FIN scale was used to assess the motor function according to the following parameters: independent food intake by patients, personal hygiene, showering, dressing, and toilet. 3 (10.7%) young children independently brought food to their mouths, in preschool children 50% (in 14 patients), and in school-age children it was 41.5% (34 patients), the majority of patients 51 (35, 4%) could

independently use cutlery, a small part of young children did not have independent chewing and swallowing (n = 5; 17.9%). When observing the performance of personal hygiene in 3 (10.7%) sick children of preschool age, independent performance of a personal toilet was noted: brushing teeth, combing, washing, and in school-age children 30.5% (25 patients). According to the parents of the patients, 62 (43.1%) had a lack of self-hygiene, as there was pronounced paresis of the limbs. Intelligence with encephalitis suffers only in more severe cases, more often when the disease began in early childhood. But even with relatively preserved intelligence, these children cannot learn. Their activity and initiative are sharply weakened. The function of attention is especially impaired: its stability, ability to switch and distribution are reduced. With preserved intelligence, attention is drawn to the discrepancy between the ability to comprehend and the lack of a critical attitude towards oneself and the environment.

The severity of the impairment of intelligence depended on the focus of brain damage and the duration of the disease. From 1 to 3 years old encephalitis, the IQ index on a scale in young children was 8.3 points, in preschool children 11.1 points and in school-age children 15.4 points. From 4 to 6 years old, intellectual disability from 10.5 to 15.5 points, also more than 6 years from 17.6 to 17.8 points. At the same time, the most pronounced impairment of intelligence was observed in patients of early childhood. Thus, our clinical and neurological study revealed the features of the course of Eph in children. The clinical picture and the severity of the condition of patients with Eph, depended on focal symptoms, age and duration of the disease. In all patients, sensory-motor symptoms with psychoemotional and autonomic disorders prevailed. The frequency of the most severe and gross intellectual disabilities was observed in young children. At the same time, in children of preschool and school age, cranial nerve lesions, paraparesis, tetraparesis, impaired superficial and musculoskeletal sensitivity, muscle strength, and walking prevailed more often from focal symptoms.

References:

1. Tashmirovich N. S., Takhirovna D. A., Sur'Atovna I. S. Morphological study of rat brain in the experiment with chronic encephalitis under the action of ozonized neuroprotectors //European science review. – 2018. – №. 3-4.
2. Toshtemirovich N. S. et al. Complex Forecast Of The Consequences Of Secondary Encephalitis In Children //The American Journal of Medical Sciences and Pharmaceutical Research. – 2020. – Т. 2. – №. 08. – С. 37-42.
3. Tashmorovich N. S., Takhirovna D. A., Suratovna I. S. Morphological structure of encephalomyelitis and myelitis using several treatments (experimental research) //European science review. – 2017. – №. 1-2.
4. Niyazov S. T., Djurabekova A. T., Igamova S. S. Morphological study of rat brain in the experiment with chronic encephalitis under the action of ozonized neuroprotectors //European Science Review. – 2018. – №. 3-4. – С. 179-185.
5. Shavkatovic S. I., Suratovna I. S., Takhirovna D. A. neuropsychological changes in patients with a consequence of traumatic brain injury // Journal of Neurology and Neurosurgical Research. – 2020. – Т. 3. – №. 1.

6. 6. Azizova RB et al. CLINICAL AND NEUROLOGICAL PECULIARITIES OF TRAUMATIC BRAIN DISEASE AT THE STAGES OF REHABILITATION // Journal of Neurology and Neurosurgical Research.– 2020. – T. 3. – №. 1.
7. 7. Sadriddinovn A. N., Taxirovna D. A., Suratovna I. S. Clinical and electromyographic prediction of facial nerve neuropathy in children // Journal of Neurology and Neurosurgical Research. – 2020. – T. 3. – №. 1.
8. Toshtemirovich N. S. et al. Complex Forecast Of The Consequences Of Secondary Encephalitis In Children //The American Journal of Medical Sciences and Pharmaceutical Research. – 2020. – T. 2. – №. 08. – C. 37-42.
9. 9. Gafurova Zh. F. et al. Analysis of acute disorders of cerebral circulation depending on early and late examination // Achievements of science and education. - 2020. - No. 3 (57).
10. Kholmurodov D. B. et al. Evaluation of treatment efficiency and informativity of mri studies in patients with migraine // Journal of Neurology and Neurosurgical Research. - 2020. - T. 3. - No. one.
11. Shomurodova D., Djurabekova A., Utaganova G. Peculiarities and forecast of nervous system loss in pregnant women with preeclampsia characterized by biochemical methods // InterConf. - 2020.