



Evaluate the Neuropsychological, Clinical-Neurological and Neurophysiological Characteristics of Febrile and Afebrile Seizures

Gaffarova Visola Furqatovna

Department of Nevrology,
Bukhara State Medical Institute named after Ali Abu ibn Sino, Uzbekistan

Abstract: Febrile seizures (seizures, FS) are the most common variant of paroxysmal conditions in pediatric practice today. These episodes of epileptic seizures occur in preschool children with hyperthermia and are not associated with neuroinfection. FS is a benign, age-related, genetically determined condition in which the brain becomes susceptible to epileptic seizures in response to high temperatures. In children of preschool age, FS is considered transient in most cases, but at the same time it can be part of separate epileptic syndromes. The prevalence of febrile seizures in children aged 6 months to 6 years is 2-5%. Boys are more affected than girls, with a ratio of 1.5-2:1. The peak of the disease is observed at the age of 18 months. Epilepsy episodes of various etiologies are identified in the family anamnesis of 80% of patients. 25% of children's parents also suffer from similar symptoms in childhood.

The purpose of the study: It consists in studying the correlation of indicators of speech disorders, clinical-neurological, neuropsychological and paraclinical characteristics of mental development in children with febrile seizures, as well as developing an algorithm of preventive measures.

Object and subject of research. The study is based on clinical and neurological analysis. In order to study the clinical characteristics of febrile seizures, the risk factors of their recurrence, a group consisting of 30 children with febrile seizures aged 6 months to 5 years, who were treated inpatient and outpatient at the neurology department between 2016 and 2021 and who met the criteria for inclusion in the study, was selected. 30 children with afebrile epilepsy aged 6 months to 5 years were included in the comparison group. Catamnestic studies were conducted in 60 children with a history of febrile seizures.

Research methods.

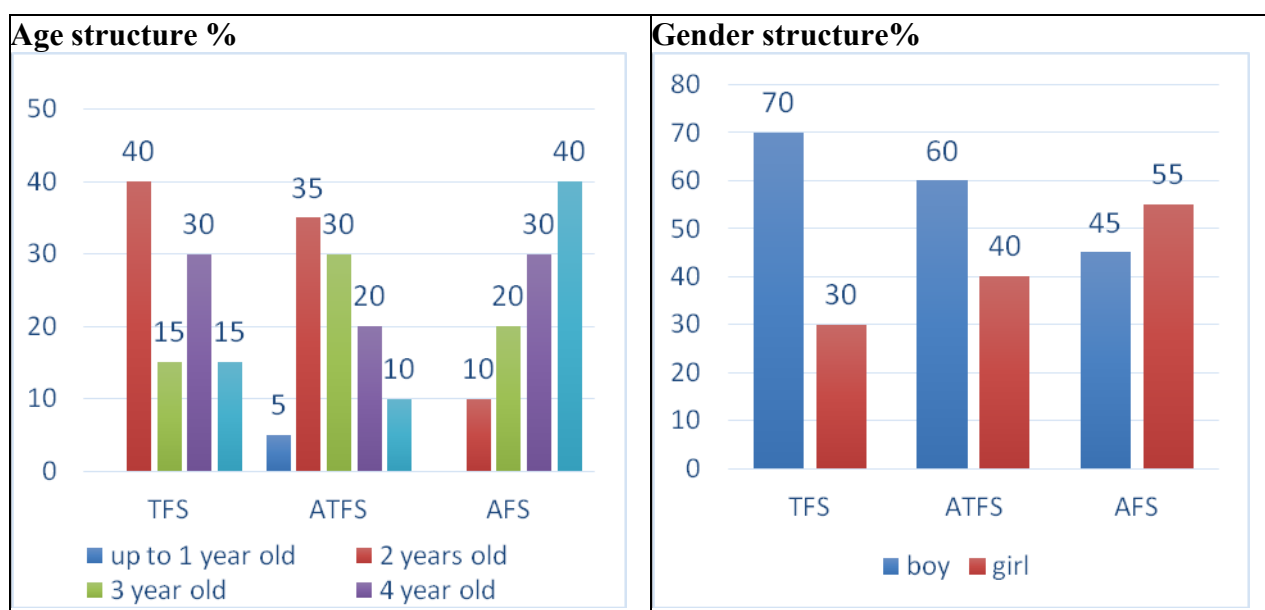
- clinical-neurological (risk factors of febrile seizures, neurostatus, studies of the level of psycho-speech development);
- paraclinical (brain MRI, brain EEG);
- statistical (use of a special computer program for medical-biological research, Spirmen's color correlation method, development of a mathematical model of forecasting).

Research results. To study the clinical characteristics of febrile seizures, their recurrence and the risk factors for transition to afebrile form, from 01.01.2016 to 01.01.2021, who were treated in the neurology department and met the criteria for inclusion in the study, aged 6 months to 5 years (average age $3.4 \pm 1,15$), a group consisting of 60 (35 boys and 25 girls) children with febrile seizures

was allocated. We divided this group of patients into 3 subgroups according to the nature of febrile seizures: subgroup 1 - 20 patients (6 girls and 14 boys) aged 6 months to 5 years (average 3.0 ± 1.17) with typical febrile seizures) child; Subgroup 2 - 20 children (8 girls and 12 boys) aged 6 months to 5 years (average age 3.2 ± 1.06) with atypical febrile seizures; Subgroup 3 - 20 (8 girls and 12 boys) children aged 6 months to 5 years (average age 4 ± 1.03) with afebrile seizures.

Among the children examined in the main group, mainly 2-3-year-old children were noted. Thus, for example, about 55% of children with typical febrile seizures, and 65% of children in the group with ATFS, were in this age group. However, in the group with afebrile seizures, on the contrary, 4-5-year-old children prevailed (70%), while in the groups with TFS and ATFS, their number was 45% and 30% respectively. The smallest group was children under 1 year old, in which 1 child was examined (3.3%).

SEPARATION OF CHILDREN WITH FEBRILE AND AFEBRILE SEIZURES BY AGE AND SEX



Distribution of children with febrile and afebrile seizures by age and sex. Among examined children with febrile seizures, males predominated - 70% and 60% in TFS and ATFS subgroups, respectively. In the afebrile group, girls slightly predominated (55%).

Fever is one of the main conditions for the occurrence of febrile seizures. We analyzed the individual temperature characteristics associated with the onset of febrile seizures: the temperature level at the onset of seizures, the presence of fever before the onset of seizures, the rate of temperature increase at the onset of seizures.

Table 1: FS and AFS are the rate of the temperature increase at the beginning of seizures.

	TFS		ATFS		AFS	
	H 20	%	H 20	%	H 20	%
The temperature which seizures occur						
Till 38,0°C	6	30	3	15	3	15
Above 38,0°C	14	70	17	85	17	85
Occurrence of seizures						
When the temperature rises sharply	12	60	11	55	11	55
Not important	8	40	9	45	9	45

From the given data, it can be seen that febrile seizures in all groups often occurred when the temperature was higher than 38.0 C, while 30% of children in the TFS group had FS at a temperature of 38.0 C, while in the ATFS and AFS groups, this figure was equal to 15%.

Seizures were the first sign of febrile illness in 10% of patients and 90% of children were previously ill and had fever. In more than 50% of patients in each subgroup, FS often occurred during a rapid increase in temperature.

Genetic factors play important role in the development of febrile seizures. We determined the presence of febrile seizures/epilepsy and the frequency of febrile seizures among relatives of children with febrile seizures and epilepsy to determine genetic predisposition.

Hereditary predisposition to febrile seizures was most often noted in the ATFS group (35%), while in the AFS and TFS groups, this figure was 20% and 15%, respectively. As for the level of kinship, the genetic predisposition was mainly found in the first family relatives. Hereditary predisposition to afebrile seizures was found more in the AFS group (40%), while in the ATFS and TFS groups, this figure was 25% and 30%, respectively. As for the level of kinship, in this case, the genetic predisposition was also determined in the first family relatives.

Factors that increase the likelihood of febrile seizures include perinatal pathology, which can affect the clinical course of FS, as well as their outcome.

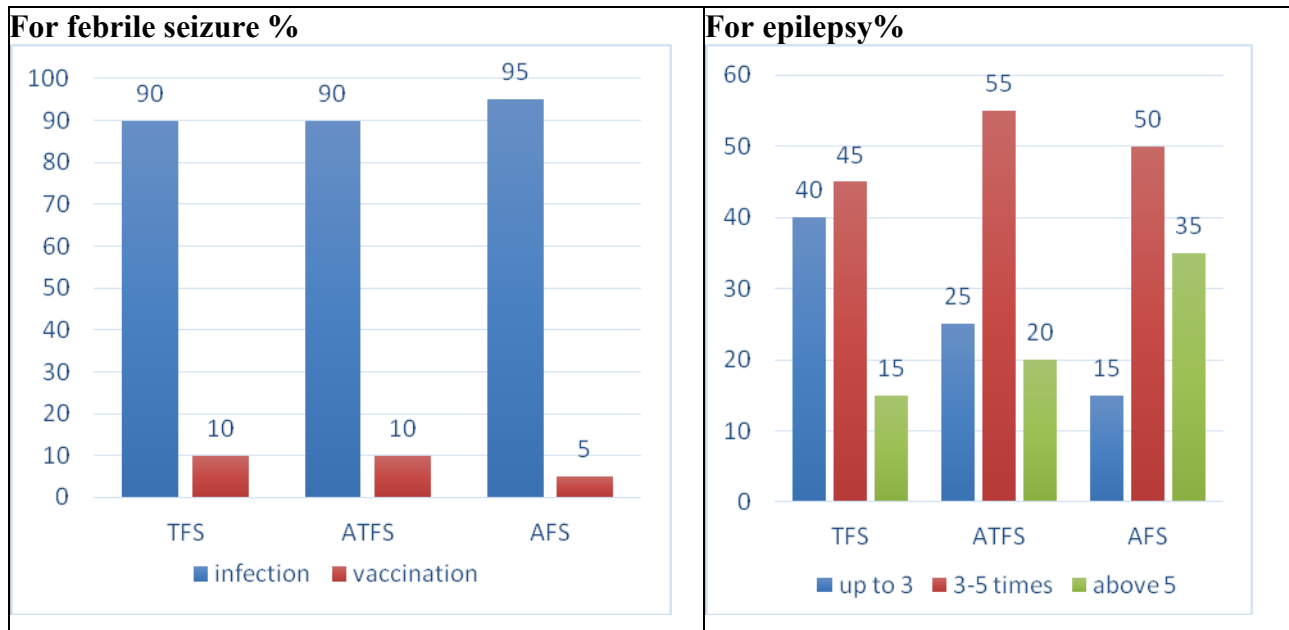
We studied the course of pregnancy (gestosis, the risk of termination of pregnancy and the presence of chronic fetoplacental insufficiency) and the immediate intranatal periods in which labor weakness, preterm labor and surgical delivery can be observed.

The negative course of pregnancy was observed more in patients with afebrile seizures - 75%, in which mothers were most often diagnosed with gestosis (50%), while the risk of termination of pregnancy was noted in 25% of mothers: in patients with ATFS, the disorder of the course of pregnancy was in 55% of mothers, with predominance of gestosis in 40% of the children, the risk of miscarriage was found in 15% of cases. Pregnancy pathology was the least detected in children with FS (in 40% of cases), and all of them were manifested by gestosis. It should be mentioned that chronic fetoplacental insufficiency was found only in patients with AFS (15%).

As for the intranatal period, in this case, 70% of the patients we examined gave birth physiologically on time. Poor labor was more common, but no significant differences were found between the groups. Birth weight varied between 2.5 kg and 4.5 kg in 71.7% of patients. About 16.7% of all children were born underweight, and 11.6% were born overweight.

Fever which causes febrile seizures, is often caused by acute infectious diseases: ARVI, otitis, pneumonia, intestinal infections, inflammation of the urinary tract.

DISEASES AND VACCINATION IN CHILDREN WITH FEBRILE SEIZURES



These infections are the cause of most childhood seizures. Also a febrile reaction to vaccination can be considered a cause of FS. In our study, the main reason for the occurrence of FS in children was the presence of an infectious process - 88.3%, and the reason for the increase in febrile seizures during vaccination was acute respiratory infection in most cases (88.7%), the number of children who experienced seizures after vaccination - 7 (11.3%).

However, it should be noted that the frequency of occurrence of infectious diseases affected the probability of occurrence of seizures. So, for example, most of the children we examined were frequent patients, patients with infectious diseases more than 3 times a year. We analyzed the characteristics of febrile seizures in children. In 68.3% of the patients we examined, the onset of febrile seizures corresponded to 1-3 years of age, in 25% of patients, febrile seizures began before the age of one year, and in only 6.7% of patients, FS began after 3 years of age. In the AFT group, seizures did not start after 3 years of age. 30% of children in the TFS-observed group had FS before 1 year of age.

In most children (90%), seizures had a general appearance. Of these, 63.3% of children had general tonic-clonic seizures and 13.3% had clinical seizures, 10% of patients had seizures that started with weakness. All attacks were characterized by a sudden and complete loss of consciousness. A tonic spasm with an upward movement of the eyelids, followed by clonic tremors in the limbs, facial muscles, breath holding, and cyanosis of the nose-lip triangle became characteristic of a general tonic-clonic attack. Seizure duration was usually up to 5 minutes, and the post-seizure period was characterized by weakness, mild loss of consciousness, and post-seizure sleep.

As for focal seizures, they were most often noted in the AFT observed group and accounted for 40% of the examined children in the group. In comparison, in the group with ATFT, only 4 (20%) children had focal different seizures, whereas in the group with typical FT, no such seizures were observed. These attacks began with a focal component, and then passed to a secondary-general appearance. Basically, the focal component was imperceptible to parents, it was noted only when we identified complaints.

The study of the neurological condition was carried out in the traditional way. During the examination, disorders in the neurological status were found in 70% of the examined children. Disturbances in neurostatus were found more often in the AFT and ATFT groups (80% and 75%, respectively), in the TFT observed group, focal symptoms were found in more than half of the patients.

Most often, during the evaluation of the neurological status in typical febrile seizures, diffuse small focal symptomatology was detected in 8 (40%) children in the form of autonomic disorders, which

were manifested in the form of profuse sweating and discoloration of the skin. In 6 (25%) children, increased alertness and tendon reflexes were observed. In the form of flattening of the nasolabial fold and facial asymmetry, disorders in the brain were detected a little less - in 15% of the examined children. Delay in speech and psycho-speech development was observed in 20% of patients.

Children in the group with atypical febrile attacks also complained of impaired autonomic functions (in 55% of cases). 40% of children had disturbances in the reflex field. In this group of patients, facial nerve pathology was added, as well as eye movement disorders in the form of squint (10%) and nystagmus (15%), bulbar disorders in the form of dysarthria (10%), and discoordinating disorders were noted in 10% of patients. Delay in speech and psycho-speech development was noted in 25% of children.

Most often, neurostatus disorders were detected in the group of children with afebrile seizures. As in the above-mentioned groups, vegetative dysfunction and disturbances in the reflex field were detected in children (60% and 65%, respectively, but in this group, the delay in speech and psycho-speech development came to the fore, it was observed in 80% of children. Also, facial asymmetry in children of this group (40% of children) and smoothing of the nasolabial fold (45% of subjects) facial nerve pathologies, as well as eye movement disorders in the form of squint (15%), nystagmus (15%) and ptosis (5%) and dysarthria (35%) to bulbar disorders, hyperkinesis (30% of examined children) and pathological reflexes (15%) were added, coordination disorders were noted in 15% of children.

Conclusion: In the course of the research, we determined the frequency of febrile seizures among children and the risk factors for their transition to afebrile. Analyzing the results obtained on the basis of the diagnostic table of risk factors for the transition to afebrile and development of febrile seizures, it is possible to improve the prevention, treatment and preventive measures of the risk of transitioning to afebrile. development of an algorithm.

LITERATURE

1. Филичева Т. Б., Чиркина Г. В. Устранение общего недоразвития речи у детей дошкольного возраста. Практическое пособие. — М.: Айрис-пресс, 2004.
2. Ходжиева Д.Т., Гаффарова В.Ф. Особенности течения фебрильных и афебрильных судорог у детей. // Журнал неврологии и нейрохирургических исследований №4.2020.-С. 57-59.
3. Gaffarova V.F. Clinic-eeg correlation somatogenous of conditioned febrile seizures in children. // International Journal of Human Computing Studies.2021. –P.114-116.
4. Gaffarova V.F. Characteristics of seizures children.// International journal of conference series on education and social sciences.Turkey 2021. –P. 22-23.
5. Gaffarova V.F. Method of predicting psychorechological disorders in febrile convulsions in children. Methodical recommendation. 2021.-p.18.
6. Gaffarova V.F. Method for prediction of psycho-speech disorders during febril conversions in children.//ScienceAsia 48 2022. -P. 951-955 (Scopus)
7. Рахматова Д.И. Нетрадиционные методы терапии невropатии лицевого нерва на разных этапах развития заболевания // Проблемы биологии и медицины. – Самарканд, 2019. - №2 (107). - С. 180-183
8. Саломова Н.К. //Эффективность применения психологических тестов для диагностики психологических расстройств у больных перенесших COVID-19.// Central Asian Journal of Medical and Natural Science. 2021.-С. 323-326.
9. Рахматова Д.И. Особенности клинического течения невropатии лицевого нерва коморбидного с соматической патологией // Тиббиётда янги кун. – Бухара, 2019. - №3(27). - С. 222-226.

10. Рахматова Д.И. Оптимизация терапии тяжёлых форм невропатии лицевого нерва // Тиббиётда янги кун. – Бухара, 2020. - №1(29). - С. 351-354.
11. Salomova N.Q. //Measures of early rehabilitation of speech disorders in patients with hemorrhagic and ischemic stroke// Europe’s Journal of Psychology.2021. Vol. 17(3).-P.185-190. Graves R.C., Oehler K, Tingle L.E. Febrile seizures: risks, evaluation, and prognosis. Am Fam Physician 2012; 85(2): 149-153.
12. Gupta A. Febrile Seizures. Continuum (Minneapolis Minn) 2016; 22(1): 51-59. DOI: 10.1212/CON.0000000000000274
13. Rakhmatova D.I. Features of the clinical course of Facial Neuropathy in Patients with other somatic pathologies // Тиббиётда янги кун. – Бухара, 2020. - №2(30). - С. 515-518.
14. Gaffarova V.F. , Khodjieva D.T. Features of the course of febrile seizures in children. // Asian Journal of Pharmaceutical and Biological Research. 2021. -P. 4-6.
15. Zafarovna O.M. Negativ Effect of Industrial Dust on the Human Body // Amaliy va tibbiyot fanlari ilmiy jurnali.-2022.-с.128
16. Salomova N.Q. //Measures of early rehabilitation of speech disorders in patients with hemorrhagic and ischemic stroke// Europe’s Journal of Psychology.2021. Vol. 17(3).-P.185-190.
17. Salomova N.K //Features of neurorehabilitation itself depending on the pathogenetic course of repeated strokes, localization of the stroke focus and the structure of neurological deficit// european journal of research development and sustainability (ejrds) vol. 3 no. 11, november 2022/8-12/
18. Salomova N.K // Risk factors for recurrent stroke// Polish journal of science N52(2022). 33-35.
19. Salomova N.Q //The practical significance of speech and thinking in repeated stroke// ScienceAsia 48 (2022): 945-949. Salomova N.Q., Radjabova G.B. //Diagnostics of night breathing disorders clock and respiratory therapy for copd patients// Europe's Journal of Psychology, 2021 Vol. 17(3).-P-181-184.
20. Gaffarova V.F. Clinic- EEG correlation somatogenous of conditioned febrile seizures in children. // International Journal of Human Computing Studies.2021. –P.114-116
21. Oxunjanova M. Z. Rehabilitation of Stroke Patients// Central asian journal of medical and natural sciences// Vol: 03 Issue: 02 | Mar-Apr 2022. C319-323.
22. Mewasingh L.D. Febrile seizures. BMJ Clin Evid 2014; 2014: pii: 0324.
23. Sharko, E.E. Quantitative electroencephalographic analysis in epilepsy children / E.E. Sharko // Med. Razgl. – 2012. – Vol. 51, Suppl. 5. – P. 66.