CLINICAL AND NEUROLOGICAL CHARACTERISTICS OF FEBRILE SEIZURES IN CHILDREN IN THE ARAL SEA REGION

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Abstract: *Febrile seizures are one of the most common paroxysmal conditions in pediatric neurology, and in some areas, their course and complications have their own peculiarities. This study is aimed at determining the features of the clinical and neurological course of febrile seizures in children living in the Aral Sea region. The study examined 148 children aged 6 months to 6 years. Patients were divided into groups of simple and complex febrile seizures. Clinical, neurological, and anamnestic indicators were analyzed. The results showed that in the Aral Sea region, the proportion of complex febrile seizures is high, clinical symptoms are more severe, and signs of neurological deficit are more common. The obtained data justify the need to improve clinical assessment and observation, taking into account the regional characteristics of febrile seizures.*

Keywords: *febrile seizures, pediatric neurology, Aral Sea region, clinical course, complex febrile seizures.*

INPUT

Febrile seizures (FS) are an epileptic condition that develops against the background of fever in children aged 6 months to 5-6 years and is one of the most common neurological problems in the child population [1,7,16,29]. In world literature, it is noted that the frequency of febrile seizures is 2-5% [2,11,18,34]. However, in some ecologically and socially unfavorable areas, this indicator can be significantly higher [3,9,21,37].

The Aral Sea region is characterized by an ecological crisis, a lack of microelements, and a high incidence of chronic somatic diseases [4,14,26,35]. These factors negatively affect the neurometabolic stability of the child's body and can affect not only the frequency of febrile seizures, but also their clinical course [5,12,23,31].

In practical pediatrics and pediatric neurology, the differentiation of simple and complex forms of febrile seizures has important prognostic significance [6,19,28,38]. Because complex febrile seizures increase the risk of developing epilepsy later [8,15,33]. Therefore, an in-depth study of the clinical and neurological course of febrile seizures, taking into account regional characteristics, is relevant [10,17,30].

Materials and methods

The study was conducted in medical institutions located in the Aral Sea region. The study included 148 children admitted to the hospital with febrile seizures.

Research participants

The age of the children ranged from 6 months to 6 years, and the average age was 2.8±1.4 years. By sex composition, 82 (55.4%) boys and 66 (44.6%) girls were observed.

Patients were divided into two groups according to clinical features:

- Simple febrile seizures (OFT) - 89 children
- Complex febrile seizures (MFT) - 59 children

Evaluation criteria

The following indicators were assessed in all children:

- perinatal history
- Body temperature readings
- duration and recurrence of convulsions
- neurological status
- somatic background diseases

Clinical assessment was carried out on the basis of standard pediatric and neurological examination methods [13,22,36].

Descriptive methods, percentage comparison, and Student's t-test were used for statistical analysis. The level of reliability was taken as $p<0.05$.

Results

Clinical forms of febrile seizures

According to the study results, the simple form of febrile seizures was detected in 60.1% of cases, and the complicated form in 39.9% of cases. The high proportion of complex febrile seizures may be associated with regional factors [20,24,25,27,32].

Table 1. Distribution of febrile convulsive forms

Febrile seizure type	Number of patients	Share (%)
Normal FT	89.	60.1
Complex FT	59.	39.9

Duration and course of convulsions

In simple febrile seizures, the duration of the seizure was mainly up to 5 minutes. In complicated febrile seizures, seizures lasting 10-20 minutes or more were frequently observed.

The frequency of recurrence of seizures in children with complex febrile seizures was 2.3 times higher than in the normal group.

Characteristics of neurological status

During neurological examination, mild focal neurological signs were detected in 42.4% of children in the group with complex febrile seizures. In the group with simple febrile seizures, this indicator was only 12.3%.

Table 2. Frequency of neurological symptoms

Indicator	OFT (%)	MFT (%)
Neurological symptoms absent	87.7	57.6
Mild neurological symptoms	12.3	42.4

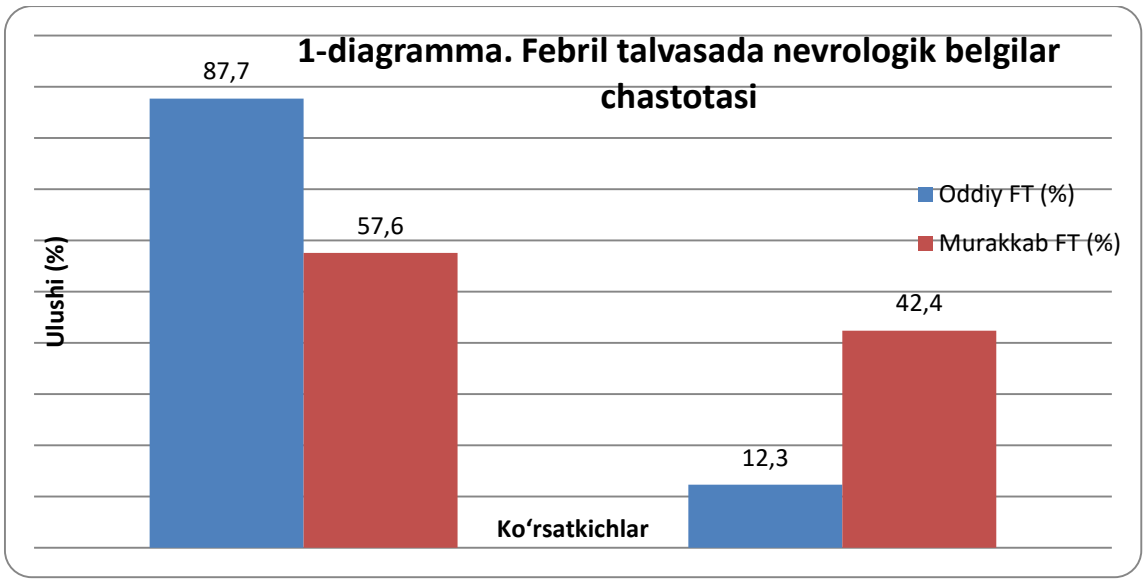

Diagram analysis (Diagram 1) clearly showed that the signs of neurological deficit are significantly higher in complex febrile seizures.

Somatic background and infectious factors

In 68.0% of children with complex febrile seizures, acute respiratory infections were severe. In simple febrile seizures, this indicator was 41.6%.

In addition, perinatal hypoxia, low birth weight, and chronic anemia were significantly more common in complicated febrile seizures ($p<0.05$).

Discussion

The obtained results showed that the clinical course of febrile seizures in the Aral Sea region is more severe than in other regions. The high proportion of complex febrile seizures may be associated with environmental and metabolic factors.

The increased detection of signs of neurological deficit in complex febrile seizures indicates a high risk of subsequent development of epilepsy and other neurological complications in these children. Therefore, such patients should be placed under separate dispensary observation.

Conclusion

In children living in the Aral Sea region, complicated forms of febrile seizures constitute a high proportion and have a more severe clinical course. In complex febrile seizures, the duration of seizures is longer, the frequency of relapses is higher, and signs of neurological deficit are more common. This situation indicates the need for early diagnosis of febrile seizures, strengthening individual monitoring and preventive measures, taking into account regional characteristics.

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