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Peculiarities of Clinical Course Without Several Form of Epileptic Encephalopathy in Preschool Children

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Annotation. Epileptic encephalopathy is a condition when a pathological altered brain electrogenesis is the cause of impaired brain function [5,6]. The epileptic process leads to progressive impairment of brain functions. According to the literature, these disorders depend on the form of 5 to 40% of behavioral, mental and neuropsychological disorders [2,4,8,9]. Currently, some researchers consider interictal epileptic psychoses as a manifestation of epileptic encephalopathy. Epileptic encephalopathy is a condition where pathologically altered brain electrogenesis is the cause of brain dysfunctions. In which the epileptic process as such leads to progressive dysfunctions of the brain.

Keywords: Epileptic encephalopathy, epilepsy, West syndrome, Lennox-Gastaut syndrome, Otahara syndrome

Relevance. Currently, some researchers consider interictal epileptic psychoses as a manifestation of epileptic encephalopathies. Epileptic encephalopathy is a condition where abnormally altered brain electrogenesis is the cause of brain dysfunction. In which the epileptic process as such leads to progressive impairment of brain function.

Purpose of the study. To study the clinical features without the convulsive form of epileptic encephalopathy in preschool children.

Materials and research methods. The study included 25 children with a diagnosis without a convulsive form of epileptic encephalopathy. Most of them were sent for examination by a neuropsychiatrist for behavioral, cognitive disorders and delays in psychomotor, psychoverbal or general mental development. The average age of the observed children with no convulsive form of epileptic encephalopathy was 5.1±0.4 years. The onset of the disease was 3.5±0.54 years and varied from 3 to 7 years. In this work, general clinical, neurological, and instrumental research methods (EEG) were used.

Results and discussion. The average age of mothers was 26.5±3.1 years. An analysis of the obstetric history showed that the children of the main group were born from 1-2 pregnancies (60.0%) and 1-2 births (60.0%). Multiparous women accounted for 40.0%. Whereas in the comparison group, children born from 1-2 pregnancies were found in 64%, and from 1-2 births - 36%. The incidence of multiparous women in the comparison group was 36.0%, which is significantly lower than in the main group ($P<0.01$).

Mothers of newborns of the main group suffered such somatic diseases as anemia (72%), kidney disease (32%), gastrointestinal diseases (24%).

Endocrine pathology was recorded in 28% of cases and was represented by thyroid pathology (48%; 12 mothers), diabetes mellitus and prediabetes (36%; 9 mothers), obesity of I and II degrees (12.0%).

While in the comparison group, the frequency of somatic diseases was recorded lower ($P<0.05$), anemia (44.0%), endocrine diseases (12.0%) and gastrointestinal diseases (16%) were mainly encountered.

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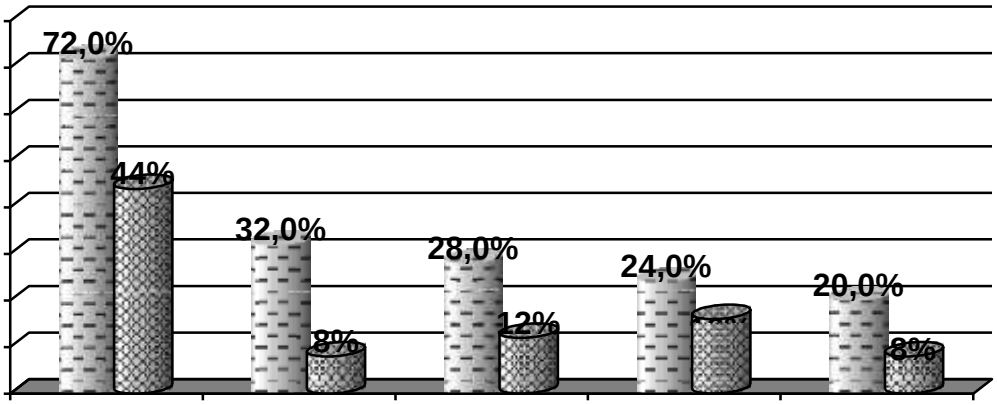

Diseases of the cardiovascular system were noted in 4 women (16%) of the main group, 20% (5) had arterial hypertension. In mothers of the comparison group in 8% of cases.

Undoubtedly, the high frequency of somatic pathology was one of the important reasons for the decrease in resistance and reactivity of the body, contributing to the development of this pathology.

Analyzing gynecological diseases of mothers of newborns born with this pathology, it was noted that in the structure of gynecological morbidity, nonspecific inflammatory diseases of the lower genital organs and pelvic organs are important. Studies revealed gynecological diseases in the form of cervical erosion in 4 (12%), chronic adnexitis in 2 (8%), and TORCH in 5 (20%) - infections in the form of CMV and HSV carriage. These data show how gynecological pathology affects the development of fetoplacental insufficiency, chronic intrauterine fetal hypoxia, the formation of hemorrhagic and ischemic brain lesions in newborns in the perinatal period.

In the study of obstetric anamnesis in mothers of the examined newborns of the main group, burden was noted: inferiority of the cervix (28%), infertility up to 3 years (12%), previous medical abortions (20%). It was also found that 16% (4) of mothers had spontaneous miscarriages, 8% (2) had placental abruption.

The most frequent complication of the first half of pregnancy was the threat of miscarriage (28), preeclampsia of I-III degree (32%), early toxicosis (36%). In half of the women, pregnancy was accompanied by preeclampsia (52.0%), acute infection was observed in 9 (36.0%) women. 40.0% (10) of mothers had preterm births, 12.0% (3) - late. Chronic intrauterine hypoxia occurred in 16.0% (4) of newborns, in 12% (3) - a violation of the fetoplacental circulation. The burden of obstetric history among the examined mothers of the main group was observed significantly more often than in the comparison group ($P<0.05$), especially in the presence of inferiority of the cervix (12% and 28%, respectively), preeclampsia (32% and 52%, respectively), threats of abortion (13% and 28%, respectively), fetoplacental circulation disorders (12% - the main group), polyhydramnios and premature birth (32% and 8%; 40% and 24%, respectively).

An important role in the occurrence of EE is played by such intranatal factors as early rupture of amniotic fluid (15, 34.1±5.1%), contaminated water (10, 22.7±4.5%), umbilical cord entanglement around the neck - 6 (13.6±3.3%) children.

Rapid delivery took place in 8 (32.0%) women, breech presentation in 3 (12.0%) women, and leg delivery in 2 (8.0%) women. Whereas in the comparison group, the presence of these intranatal factors was not detected. 20.0% (5) of mothers had a history of antenatal, perinatal and neonatal losses (mixed factor), in the comparison group they were significantly less common (4%).

Various pathological factors that adversely affect the intrauterine development of the fetus affected pregnancy outcomes: the proportion of adverse outcomes in the main group was 56.0%, which significantly differed from the comparison group (24.0%; $P<0.01$).

Examination of the children of the main group showed that the gestational age at birth ranged from 28 to 42 weeks. 40.9±5.3% (18) of children were premature (28 - 37 weeks); in 11.4±3.6% (5) cases, the gestation period was 40-42 weeks.

Most newborns weighed between 2500 and 3500 grams. 6.5% of full-term babies had low weight from 1500 to 1999 grams. According to the anamnesis, these children had intrauterine growth retardation. In premature babies, this figure was 40.9%.

Our studies have identified such risk factors for the development of EES in infants in the antenatal

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period, such as anemia (70.5%), preeclampsia (52.3%), preeclampsia (34.1%), kidney disease (31.8%) in mother and pathology of the course of pregnancy. Among the perinatal risk factors for the development of EES in newborns (the proportion of adverse pregnancy outcomes was 54.5%), urgent caesarean section (15.9%), traumatic delivery using forceps and vacuum extraction (13.6%) were observed.

An analysis of risk factors showed the role of an infectious disease of the upper respiratory tract, a slight head injury (bruising of the soft tissues of the head), and increased physical activity in the development of children in the main group.

Thus, in the anamnesis of children with EES and EE, the action of pre- and perinatal damaging factors took place, 52.3% had febrile convulsions, 11.4% had a head injury, and 34.1% had cases of mental illness in their family history. disease or epilepsy. In one observation, a father (with anxiety disorders) and a 12-year-old son with attention deficit hyperactivity disorder and learning disorders showed similar epileptiform generalized discharges on the EEG with an amplitude of up to 300 μV.

Epileptic seizures in this category of patients were either completely absent or occurred very rarely or in history (13.0%). Features of the neurological status of children with non-convulsive form of epileptic encephalopathy were characterized by a low percentage of strabismus (16% vs. 24%; $P<0.05$) and horizontal fine-sweeping nystagmus (24% vs. central paresis of the facial nerve (16% vs 20%; $P<0.05$).

When studying the indicators of higher cortical activity in the examined children with no convulsive form of epileptic encephalopathy, a lag in psychoverbal and mental development was noted. There were no gross changes in the neurological status.

Characteristics of the neurological status of children with EES

Clinical manifestations	abs	%
Strabismus	6	24
Nystagmus	8	32
Flattening of the nasolabial fold	5	20
Hypotension	16	64,0
Movement coordination disorder	17	38,0
Increased tendon reflexes	18	72,0
Pathological reflexes	19	76,0
Lag in psychoverbal development	20	80,0
Mental retardation	21	84,0

An EEG study revealed bursts of α-, β-, and λ-activity with an amplitude of 200-1000 μV (598±21.3 μV). The main EEG phenomenon, along with high-amplitude activity, was a gross rhythm disturbance. High-amplitude activity was slow in nature, often combined with epileptiform activity, which made it possible to classify this phenomenon as epileptic dysrhythmia. Such a gross violation of bioelectric rhythms indicates a severe disorder of the functions of the noted structures, which, as a rule, are pacemakers of epileptic activity in partial forms of epilepsy.

Conclusion. The described structural changes, which may persist even after the cessation of epileptic activity, are the cause of the persistence of clinical disorders in children with non-convulsive forms of epileptic encephalopathy.

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