MENTAL DISORDERS IN CHILD EPILEPSY

Elisabeta Racos – Szabo¹, Iringó Száva², Anamaria Todoran – Butila³

Abstract
Introduction
Epilepsy is a chronic condition characterized by the presence of recurrent paroxysmal brain seizures (epileptic seizures), as a result of an excessive discharge of neurons. The prevalence of mental disorders in epilepsy is of 30-40%, and those of psychoses of 1-3%, being higher in patients with temporal lobe epilepsy. Psychoses and personality disorders are 3 times more frequent in those with temporal lobe seizures. Among the mental disorders in child epilepsy we care to mention: cognitive impairment, behaviour disorders with aggressiveness and psychomotor agitation, learning disorders, depression, anxiety.

Material and methods
There have been evaluated 24 children with epilepsy, admitted in 2014 in the Clinic of Pediatric Neurology and Psychiatry Tg-Mures, with ages between 12 and 18. There have been applied Raven's Matrices, various scales for depression and anxiety (MASC, Hamilton, Beck, Bender). The diagnosis of mental disorders has been established based on the criteria DSM-V and ICD 10.

Results
The prevalence of mental disorders in child epilepsy was of 12%, with the highest incidence in the group age between 10 and 12. These mental disorders have been: cognitive disorders (79%), behaviour disorders (37,5%), disharmonic personality developments (33%), anxiety (20,8%), psychosis (8,3%), depression (4,2%).

Discussions
Child epilepsy evolves having a high risk for the occurrence of cognitive impairment, behaviour disorders, language or mood disorders all the more so as the underlying structural disorders are higher. The early onset of the epileptic seizures under the age of 3, in a child with a psychic under development represents a vulnerability factor. Patients with temporal lobe epilepsy present a risk for psychoses, also 1/3 of the epileptics develop personality disorders.

Conclusions
The onset of epileptic seizures under the age of 3 constitutes a risk factor for the occurrence of language disorders, cognitive or behaviour disorders.

Prognostic in mental disorders in the epileptic child is influenced by the underlying structural brain anomalies responsible for the occurrence of epileptic seizures.

Key words : epilepsy, mental disorders, child.

Rezumat
Introducere
Epilepsia este o afecțiune cronica caracterizata prin prezența crizelor cerebrale paroxismale recurente (crize epileptice), ca urmare a unei descarcări excesive a neuronilor.

Prevalenta tulburarilor psihice in epilepsie este de 30-40%, iar cea a psihozelor de 1-3%, fiind mai mare la pacientii cu epilepsie de lob temporal. Psihozele si tulburarile de personalitate sunt de 3 ori mai frecvente la cei cu crize de lob temporal. Dintre tulburarile psihice in epilepsia copilului amintim: deficitul cognitiv, tulburarile de comportament cu agresivitate si agitatie, tulburarile de invatare, depresia, ansietatea.

Metode

Rezultate
Prevalenta tulburarilor psihice in epilepsie a fost de 0,14%, cu incidența cea mai mare la grupa de vârstă între 10 și 12 ani (33%). Acestea au fost: tulburări cognitive (8,3%), tulburări de comportament (37,5%), dezvoltări dizarmonice de personalitate (33%), anxietatea (20,8%), psihoză (8,3%), depresia (4,2%).

Discuții
Epilepsia copilului evoluează cu risc crescut de apariție a deficitului cognitiv, tulburărilor de comportament, a celor de limbaj sau de dispoziție cu atât mai mult cu cit tulburările structurale subiacente sunt mai mari. Debutul precoce al crizelor epileptice sub vârsta de 3 ani, la un copil cu un psihic în dezvoltare reprezinta un factor de vulnerabilitate. Pacientii cu epilepsie de lob temporal perzinta risca pentru psihoz, de asemenea 1/3 dintre epileptici dezvoltă tulburări de personalitate.

Concluzii
Debutul crizelor epileptice sub vârsta de 3 ani constituie factor de risc pentru apariția tulburărilor de limbaj, a celor cognitive sau de comportament.

Cuvinte cheie : epilepsie, tulburări psihice, copil.
Introduction

Epilepsy is a chronic condition characterized by the presence of recurrent paroxysmal brain seizures (epileptic seizure), as a result of an excessive discharge of the neurons within a structural or biochemical epileptogenic brain injuries (according to the International League Against Epilepsy approved by World Health Organization).(1,2)

The association of epilepsy with mental disorders is already known from antiquity(8). Later Kraepelin affirmed that patients with epilepsy present personality disorders and predisposition for psychoses.(9)

The prevalence of mental disorders in epilepsy is of 30-40%, being able to exceed even 60% in those with different neurological impairments, and the psychoses one is of 1-3%, being higher in patients with temporal lobe epilepsy(5,7). Kaplan mentions that epileptics present mental disorders, depression being present in 7.5 up to 34% of them. At the same it is to be mentioned that psychoses and personality disorders are 3 times more frequent in patients with complex partial seizures. (9) The most frequent comorbidity in epilepsy is depression, the estimated prevalence of it vary between 50-55% in patients attending hospital, or ambulatory system, 20-30% in those with recurrent seizures, and 6-9% in those in remission. Depression can appear after epilepsy surgery too.(4) The suicide rate in population suffering of epilepsy is 5% (in the whole population 1,4%).(11) The epilepsy treatment can also lead to depression, nervousness, abnormal thinking (Topiramate, vigabatrin) (4,6).

The mental disorders in the epileptic child are different depending on age(10). Thus, we care to mention behaviour disorders with instability and psychomotor agitation, cognitive impairment, personality disorders (with viscosity, aggressiveness, irritability, egocentrism), learning disorders, attention deficit, hyperactivity disorder, anxiety, depression, psychosis. (12)

Material and methods

A study has been performed within the Clinic of Pediatric Neurology and Psychiatry from Tg-Mures during 2014, being monitored 24 children with various forms of epilepsy, aged between 10 and 18, who presented neurological disorder as well. The patients have been examined neurologically, paraclinically by EEG, brain imaging (CT scan and brain MRI), also psychiatrically by Raven’s Matrices, projective tests, depression and anxiety scales (MASC, Hamilton, Beck, Bender).

Results

Out of the 171 cases of epilepsy diagnosed in our Clinic of Pediatric Neurology and Psychiatry from Tg-Mures in 2014, the prevalence of epilepsy associated with mental disorders was of 12%.

The specialized literature mentions a higher incidence of epilepsy in male gender, in the studied cases this being of 71%.

The maximum incidence of mental disorders in epileptic children has been in the group with ages between 10 and 12, namely 33% (6 cases), 12-14 years old 29% (7 patients), 14-16 years old 25% (6 patients), 16-18 years old 13% (3 patients).

Figure 1: Mental disorders prevalence in child epilepsy

Figure 2: Distribution of cases on genders

Figure 3: Distribution of cases on age groups

Figure 4: Incidence of mental disorders in child epilepsy

The incidence of mental disorders in epileptic children according to their background has been equal between the
The mental disorders encountered in the child diagnosed and treated for epilepsy have been:
- cognitive disorders: (37%);
- behaviour disorders: (17%)
- disharmonic personality developments: (15%)
- attention deficit hyperactivity disorder: (9%)
- anxiety: (9%)
- learning disorders: (7%)
- psychosis: (4%)
- mood disorders of depressive nature: (2%)

Behaviour disorders have been encountered in 11 patients consisting in irascibility (2 cases), disobedience and stubbornness (4 cases), auto- and hetero-aggressive manifestations (5 cases).

Personality disorders have been encountered in 8 cases, consisting in withdrawal (1 case), viscosity (1 case), impulsiveness (4 cases), antisocial manifestations as theft and consumption of alcohol (2 cases).

The psychotic type of disorder has been the most severe mental disorder in the epileptic child, consisting in mystical and paranoid delirious ideas, in 2 cases (8%). Language disorders were also present consisting in dyslalia, stuttering, dysarthria in 13 children. Also there have been encountered affective and mood disorders namely: 1 case of depressive disorder, and also 1 case of anxiety.

The associated cognitive impairment in the children patients with epilepsy under treatment, has consisted in mild mental retardation (intellectual disability) with schooling in aided school in 25% of cases, moderate mental retardation in 17% of cases and severe mental retardation in 37% of cases, and 21% of the patients had a normal cognitive level.

The severity of the cognitive impairment has been correlated with the age at the epilepsy onset, thus in 45.8% of cases the onset of the epileptic seizures has occurred before the age of 3. 17% of the epileptic children have not been schooled, due to the seizures frequency and lack of favourable response to the antiepileptic treatment, at the same time due to the associated cognitive impairment.

**Discussions**
Recent studies point out the fact that child epilepsy evolves with a high risk for the occurrence of cognitive impairment, behaviour disorders, emotional disorders, language or mood disorders. This risk is all the more higher as the structural underlying disorders to the epileptic process are more pregnant(2). The monitored patients presented a cognitive impairment in most of the cases (79%), only 21% of them having a normal cognitive level. At the same time the behavioural disorder consisting in disobedience, irascibility, impulsiveness with auto- and hetero-aggressiveness has been present in 11 patients.(12) In most of the epileptic children within the study (45.8%) the onset of the epileptic seizures occurred before the age of 3, when the child's psychic is at its peak of development, therefore the psychic vulnerability is higher, aspect mentioned also in the specialized literature (1,2,6) Personality disorders appear in a 1/3 of the epileptic
patients, fact emphasized also in the children within the study, namely in 33% of them, under the form of viscosity, adhesiveness, antisocial type of elements, instability, impulsiveness, consistent with the specialized literature data.\(^{(9,12)}\)

It is mentioned the occurrence of psychosis in patients with temporal lobe seizures.\(^{(5)}\)

Epileptic children with psychotic decompensation within our study (2 cases) have presented seizures of complex absence type, complex focal seizures secondarily generalized, the structural lesion being in the temporal lobe.\(^{(5,7)}\)

Some of the antiepileptic medications may cause reactions of behavioral or cognitive type.\(^{(12)}\) Within the study performed it could not be established if cognitive or behavioral disorders had a bearing on the antiepileptic medication treatment.\(^{(6)}\)

**Conclusions**

Among the mental disorders in epileptic children, the most frequently emphasized was the cognitive impairment (79%).

The maximum incidence of mental disorders was in the age group between 10 and 12.

The early onset of epileptic seizures under the age of 3 constitutes an unfavourable prognostic factor for the occurrence of mental disorders as language disorders, cognitive impairment, behavioral disorders.

The prognostic of mental disorders in child epilepsy is influenced by brain structural anomalies responsible for the epileptic seizures, also the therapeutic response at specialized medication.

**Bibliography**


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