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Aggressive Forms of Behavior in Epileptic Disease (Literature Review)

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Abstract: Main provisions. Aggressive behavior is one of the frequently encountered disorders in epilepsy. The review examines risk factors for aggression development in epilepsy, the relationship between epileptic focus localization and aggression character; provides assessment of aggressive behavior within various psychopathological states. The prevalence of depressive disorders and suicidal behavior in epileptic disease is noted. The connection between individual forms of paroxysmal states characteristic of epilepsy and their stages with aggressive behavior is shown.

Key words: epilepsy, aggression, epileptic focus localization, suicidal behavior.

Introduction.

Rage and aggressiveness as characteristic behavioral features of some epilepsy patients were first described by W. R. Gowers (1881). Subsequently, aggressive manifestations were noted by other authors who classified various episodes of "disturbed behavior" in this category: from impulsive irritability to "relatively unprovoked rage" and attacks [2].

Considering the extreme diversity of behavioral disorders in epilepsy patients (anger, tension, tendency toward dangerous actions), not exhausted by the concept of "epileptic rage," A. G. Zemskaya et al. (1983) distinguished a syndrome of aggressive behavioral disorder in epilepsy patients. It can be defined as an involuntary, suddenly arising state characterized by affective reactions against the background of preserved or altered consciousness, with manifestations dangerous to the patient and others [5].

In modern research, great importance is given to risk factors for aggression development in patients suffering from epilepsy. One cause of aggressive behavioral forms is constitutional, genetically determined personality anomaly (explosive character). An important role in aggression development in epilepsy is played by upbringing conditions related to early disease development, frequent hospitalizations, lack of adequate school education and social environment [3].

The following factors having substantial influence on aggressiveness in persons with epilepsy have been identified: concomitant mental disorders, disability, number of medications taken, and disease duration [4].

When considering issues of relationship between epilepsy and violent actions, it is necessary to note periodic outbursts of aggressiveness or violence characteristic of such patients, which significantly exceed in their severity the psychosocial stresses that caused them [11].

Much attention in literature is devoted to identifying the relationship between epileptic focus localization and the nature of psychopathological disorders, including aggressive behavioral forms. Thus, orbitofrontal connection damage, including hippocampus or paracingulate area, leads to personality changes with appearance of pronounced social behavioral norm violations.

This type of behavior received the name "orbitofrontal syndrome." It includes increased irritability, disinhibition, impulsivity, tactlessness, talkativeness, emotional lability with tendency to euphoria and, alongside this, decreased critical assessment of one's actions, irresponsibility and laziness [8].

Temporal lobes, being the main part of the limbic system, participate in forming emotional reactions, fear, sexual behavior, hunger sensation, aggression, etc. A connection between temporal lobe damage in epilepsy patients and aggressive behavior has been described [7].

Anxiety, depression with suicidal thoughts, other affective and schizophrenia-like psychoses, as well as behavioral disorders, especially aggression, are most frequently noted in temporal epilepsy. Among behavioral disorders with this epileptic focus localization, conflict tendency, impulsivity, rudeness, "brutality" are distinguished [2].

With age, when seizures persist, most patients develop persistent mental disorders caused by involvement of both temporal lobes in the pathological process [6].

Aggression can be observed with both hemisphere damage, with focus location in the dominant hemisphere clinically manifesting as presence of "catastrophic reactions" in patients, while subdominant hemisphere pathology is characterized by mood swings, "affective tension requiring discharge" [8].

In males with aggressive behavioral forms toward people from immediate surroundings, electrophysiological examination revealed frontotemporal area damage in both hemispheres [9].

Limbic system structure pathology plays a certain role in autoaggression formation. V. S. Ramachandral (1998) established that during repeated attacks, destruction occurs of neurons in deep temporal lobe sections that protect the limbic system from excessive excitation. As a result, pathological connections and abnormal impulse circulation pathways form in the limbic system, subsequently leading to development of stable pathological behavior stereotypes.

Currently, aggression manifestations are assessed predominantly within one or another psychopathological disorder framework. One aspect of this problem is the relationship between aggressive behavioral forms and epilepsy [6].

Discussing the specificity of mental disorders in epilepsy, many authors indicate the predominance of affective disorders in this patient category [8]. Depression is considered the most frequently encountered disorder; it is viewed as an expression of the epileptic process itself; comorbidity and pathogenetic unity of affective disorders of anxiety and depressive spectrum and epilepsy are described [2].

High correlation of anxiety level with young age and short disease duration and significant association of anxiety and depression severity with low quality of life have been demonstrated [4].

Some specialists believe that suicidal actions due to depression should be considered as autoaggressive states. They also indicate that suicidal thoughts are an "obligatory" symptom of epilepsy. The prevalence of suicidal thoughts in epilepsy patients is greater than in persons without it (24% and 13% respectively) [12].

Suicidal behavior (including unsuccessful suicide attempt, interrupted attempt, preparatory actions or behavior with self-aggression) is observed in 21.1% of cases. Suicide risk in epileptic disease usually increases [3].

Three most common risk factors associated with suicidality have been identified: presence of anxiety disorders, past suicide attempts, hereditary mood disorders [39]. Depression and anxiety with suicidal thoughts and tendencies, emotional lability are the most frequent epilepsy symptoms regardless of whether they are seizure manifestations or noted in the interictal period [1].

Psychiatric, demographic and socioeconomic factors influence suicide risk in epilepsy patients. Statistically significantly high suicide risk was recorded in the first six months after diagnosis [6].

Among risk factors in this patient population are operations, conducted therapy (suicidal tendencies are 5 times higher in patients receiving pharmacological therapy), most frequently noted are presence of long-term mental disorders (affective states, schizophrenia-like disorders), drug addiction and substance abuse [2].

Acts of physical violence in epilepsy patients are connected with their character peculiarities - increased excitability, "fiery," in P. B. Gannushkin's expression, irritability, malice, egocentrism, vindictiveness and simultaneously tendency toward brutal and aggressive actions [2].

Aggression arises in patients due to characterological changes and manifests as inadequate reaction in duration and intensity [1]. Some researchers emphasize the presence of psychotic symptoms, behavioral disorders, which determines abnormal, and primarily aggressive, patient behavior.

Aggressiveness in some cases is based on epileptic equivalents and chronic mental changes. Pre-, post- and interictal aggression episodes can arise in the structure of transient psychotic states: dysphoric, twilight, oneiroid, delirious.

In twilight consciousness states, during epileptic delirium, during acute paranoid state, patients develop a tendency toward cruelty [3]. A patient in disturbed consciousness can carry out aggressive actions that reflect certain "understandable" motives and tendencies observed toward certain persons even before the pathological episode [8].

Psychopathological phenomena of epileptic oneiroid often serve as pathological motivating factor for committing socially dangerous actions distinguished by particular severity and cruelty [4].

Many authors connect aggressiveness and violence manifestations with behavioral disorders, social functioning impairment. A so-called second type of epileptic encephalopathy is described, characterized by mental, cognitive, behavioral and social disorders in the absence of epileptic seizures.

In progressive epilepsy course, gross behavioral disorders occur with moria-like mood coloring, dysphorias, aggressive tendencies and absurd behavior. Within the hypersthenic type of dysphorias in epilepsy, an explosive variant is distinguished, which manifests as mood decrease, excessive irritability, explosiveness, constant readiness for conflict, irascibility, malice, frenzied rage, aggression toward others, destructive actions, psychomotor agitation at attack height, accompanied by brief consciousness narrowing or clouding [10].

Researchers pay great attention to the connection of various forms of paroxysmal disorders characteristic of epilepsy, their stages with aggressive behavior. Significantly earlier than epileptic seizures, aggression may appear, which is subsequently observed independently of them [6].

Studying the aggressiveness phenomenon during seizure, some authors conclude that violent actions committed by patients in such state are significantly connected with psychopathology [4].

Additionally, there exists an opinion that "minor" manifestations of aggressive behavior are typical for epilepsy patients. The inconsistency of the viewpoint that aggressive behavior always follows a seizure is noted. Seizures themselves very rarely lead to directed aggression and almost never result in murders [7].

Foreign authors are convinced that there is no significant difference in aggression level among patients with psychomotor, generalized and other types of epileptic seizures. Clinical picture complication of paroxysms (appearance of polymorphic seizures) contributes to increased aggression [2].

Interictal aggression in epilepsy patients is more determined by psychopathological manifestation severity (up to dementia) than by epileptic activity, seizure character, etc. [4].

The connection between autoaggression, particularly suicidal activity, and convulsive seizures is of interest. Most suicide cases in epilepsy patients were a direct result of psychotic state during seizure and in the interictal period. Cases of aggressive behavior and suicide attempts during post-seizure psychotic state have been identified.

CONCLUSION. It has been noted that such mental disorders as depression, anxiety, psychosis and, especially, aggression frequently occur in epilepsy patients and have substantial impact on their life quality. Therefore, prevention of aggressive behavior, including suicidal behavior, is very important.

Modern research proposes measures for its prevention. Suicide prevention begins with identifying current depressive disorder with active suicidal thoughts in patients, followed by treatment prescription. Suicide risk factors can easily be identified in outpatient clinic.

Literature analysis indicates the necessity for closer consideration of aggressive behavior in epileptic disease, careful selection of practical strategies using pharmaco- and psychotherapy for suicidal behavior prevention, preventing criminal situations and improving patient quality of life.

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