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Editorial commentary

Neuropsychiatric Diseases in Epilepsy and Headache: Pathogenetic Basis and Psychotherapy Role

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Editorial commentary

It is known that some neurological conditions such as epilepsy and headache may be associated with psychiatric diseases such as mood and psychotic disorders. In this work, we analysed the usefulness mechanism of this comorbidity and examined the role of cognitive behavioral therapy (CBT) and other psychotherapeutic approaches for the treatment of psychiatric aspects in epilepsy and headache.

Recently, Young et al. (2024) provided electrophysiological correlates of depressive symptoms in depressive patients, showing that the phase amplitude coupling registered in 34 invasively monitored drug resistant epilepsy patients' brain recordings could be an important electrophysiological biomarker candidate to detect depression comorbid with epilepsy and, in turn, a treatment target for neuromodulation [1]. Moreover, it was hypothesized that psychotic disorders may sometimes have a relationship with seizures, leading some authors to suggest more Tomography computerized (TC) or magnetic resonance imaging (MRI) in schizophrenic patients [2].

A study examined the occurrence of psychosis in patients with epilepsy treated with tiagabine (TGB) or psychotherapy. The authors divided epileptic patients in two groups based on treatment received after an 8- or 12-week baseline phase, double-blind treatment consisted of a 4-week titration period (with TGB dose gradually increased to 32 or 56 mg daily) and an 8- or 12-week fixed-dose period: tiagabine group (N=353, M=207, F=146, age range=12-72 years) and placebo group (N=198, M=113, F=85, age range=12-77 years). Participants were assessed for the presence of adverse events associated with psychosis, treatment intolerance and effectiveness in reducing complex partial seizures (CPS). Results showed that no significant risk of psychosis was induced by TGB [3].

To investigate the neuropsychological profile of patients with psychosis and epilepsy, Allebone et al.(2023) enrolled 12 individuals (M=8, F=4, age range=26-62 years) with epilepsy and psychosis, 12 individuals with only epilepsy (M=7, F=5, age range=23-65 years) and 42 healthy controls (M=9, F=33, age range=18-59 years), who were analyzed through standardized neuropsychological tests of memory and executive functioning. It was concluded that people with psychosis and epilepsy had worse performances than individuals of the other two groups [4].

Regarding panic disorder in epilepsy, the literature reports a case of a 51-years old woman suffering from seizures non-traumatic intracranial hemorrhage who developed anxiety and panic attacks. The authors highlighted the importance of an appropriate differential diagnosis between

peri-ictal fear and panic attack. Interestingly, it was concluded that the cognitive behavior therapy (CBT) could be considered a treatment of choice in epilepsy associated with anxiety disorders, also considering that some antidepressants such as venlafaxine or tricyclics may mildly increase seizures risk [5].

When examining therapeutic aspects of psychiatric comorbidity in epileptic patients, we should make some considerations. Some drugs employed in mood disorders, such as clozapine, bupropion and tricyclic antidepressants and others, may alter seizure thresholds and facilitate epileptic seizures. Another point is adherence to treatment, which has resulted in low adherence in epileptic patients with psychiatric comorbidity [6]. Starting from these considerations, it could be advisable to also consider psychotherapeutic approaches to the psychiatric comorbidities of epilepsy. Moreover, a recent meta-analysis showed that CBT is effective not only for the treatment of anxiety and depression in epilepsy, but also for improving quality of life [7].

As well as epilepsy, headache often presents comorbid with other neuropsychiatric conditions, such as autism spectrum disorder (ASD). In fact, autistic individuals may present, especially during adolescence, behavioral problems, such as aggression, self-injury, disruption, agitation and tantrums, often due to organic causes including psychiatric and non-psychiatric conditions such as acute pain [8]. In this framework, this paper aims at giving some insights into the relationship between hyperactive behaviors and associated headaches in autism.

A work by C. Sullivan et al. (2014) investigated 81 ASD individuals, divided into migraine (N = 23) and non-migraine people (N = 58). The authors asked parents to report their child's migraine occurrence, sensory hyperreactivity, assessed by the Sensory Over-Responsivity Inventory, and anxiety symptoms, measured through the Spence Child Anxiety Scale. In addition, parents reported their children presence of other psychiatric and non-psychiatric comorbidities in their children, such as sensory processing disorder, ADHD, anxiety disorder, obsessive-compulsive disorder (OCD), dyspraxia or movement disorder, and language disorder. It was suggested that migraine headaches, sensory hyperreactivity, and anxiety symptomatology are reciprocally connected in autism spectrum disorders, thus suggesting the idea of a common pathogenetic basis [9].

Later, a review by Vetri (2020) deepened the association between autism and migraine. It was stated that ASD people altered pain sensitivity could be at the basis of their perception of headache. What's more, it seems that both autism and migraine share common pathophysiological changes including neurotransmission dysregulation, altered immune response, anatomical abnormalities such as the cortical minicolumn organization, the dysfunctional gut–brain axis and susceptibility genes [10].

On the other side, it is known that in ASD, headaches are often underdiagnosed, due to difficulties in communication. That's why clinicians should suspect a diagnosis of headache in ASD population especially in presence of some symptoms such as changes in facial expression, increased irritability and agitation, seeking isolation and avoiding stimuli, sleep pattern alteration, changes in eating habits [11].

Therapeutic strategies for ASD agitation and irritability consist of a pharmacological approach that includes antipsychotics such as risperidone and aripiprazole, while some benefits have been reported to come from neuromodulation techniques [12]. To date, non-pharmacological strategies, based on environmental modifications such as reducing background noise, providing dimmed light sources, or using tinted lenses to minimize exposure to fluorescent lights or relaxation techniques seem to be valid therapeutic approaches for headache in ASD individuals with maladaptive and self-injury behaviors [13,14]. To the best of our knowledge, given difficulties in understanding their own body message and in properly communicating their emotions, ASD people may benefit from a psychotherapeutic approach [11].

Finally, both epilepsy and headache may be related with other disorders including ASD, psychosis, depression, anxiety, for whom CBT could potentially play a role, and that clinician should always consider together with other therapeutic approaches.

Conflict of interests: None.

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