

## LAMOTRIGINE TREATMENT OF A PATIENT AFFECTED BY EPILEPSY AND ANXIETY DISORDER

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### SUMMARY

*Epilepsy often occurs in comorbidity with mental diseases and disorders. Early detection and/or treatment of such disorders in patients affected by epilepsy, as well as their socialisation are crucially important since epileptic patients tend to suffer more due to lack of social support than to frequent epileptic seizures.*

*Prevalence of psychiatric disorders is higher in patients with epilepsy than in general population, the most frequent being: anxiety, depression, panic attacks, behavioural disorders as well as psychotic states with paranoid elements.*

*The efficacy of AE treatment of patients affected by epilepsy and mood disorders has also directed clinicians to investigate possible AE benefits in treating other mental disorders such as anxiety states, depression and bipolar disorder.*

*The examined case displays complex partial epilepsy and comorbid mental disorder. The use of lamotrigine, a fourth-generation antiepileptic, which is also a mood stabilizer, has assured a favourable remission of symptoms related to both epilepsy and mood disorders. Side-effects caused by lamotrigine were only temporary and dose reduction was sufficient to eliminate their symptoms.*

**Key words:** *epilepsy- lamotrigine- anxiety disorders*

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### INTRODUCTION

Epilepsy is one of the most common neurological problems affecting approximately 1% of the world's population. The impact of social support on health related quality of life in persons with epilepsy is well known (Charyton et al. 2009, Hills & Baker 1992). One of the greatest challenges in treating epilepsy is seizure freedom as well as the ability to predict which antiepileptic drugs (AED) will be most likely to control seizures in an individual patient without AED side-effects. A rational approach to drug therapy requires a full understanding of both the pathophysiology of the disease and the mechanisms of action of available drugs.

Epilepsy may appear in comorbidity with other mental diseases and disorders. It is crucial to detect and/or treat such mental disorders and support socialisation of epileptic patients.

Literature reveals that epileptic patients suffer more in case of lack of social support than from frequent epileptic seizures (Droge et al. 1986).

Numerous factors such as epileptic seizures, cerebral damage, antiepileptic side-effects and psychosocial factors may interact and be held responsible for the development of cognitive dysfunctions and mental disorders in epileptic patients.

Quality of life of certain epileptic patients is impaired more by mental disorders and cognitive deficits than by the seizures themselves, especially in

case of partial seizures with elementary symptoms or nocturnal crises.

Although the association between epilepsy and mental disease has been recognised for a long time, it has often been regarded a controversial topic. The risk of acute and/or chronic mental disorders in persons suffering from epilepsy is higher than average, while prevalence of psychiatric disorders among epileptic patients is higher than prevalence in general population as well as among patients affected by other neurological disorders (Kanner et al. 2000, Kanner & Palac 2000, Smith et al. 1986).

### CASE REPORT

A 35-year-old man, married with two children. He was the older child (of two) and was raised in a two-parent family. His early psychomotor development was regular and at the age of 14, after a fall and head injury, he experienced a loss of consciousness and suffered a minor concussion. He completed both primary and secondary education with average grades. At the age of 22 (a year after a tragic death in immediate family) mental disturbances, i.e. undifferentiated fear were revealed. After waking up, the patient felt tense, agitated and irritable and often thought about "severe" diseases. He canalised and manifested such anxiety through non verbal actions and numerous somatic (gastrointestinal and cardiologic) abreactions.

The patient visited a psychiatrist and 1,5 mg alprazolam/day combined with 100 mg sulphiride / day were introduced. Supportive psychotherapy once a week was also advised after anxiety disorder had been diagnosed.

Soon after that the patient visited a neurologist due to the manifestation of paroxysmal episodes with perceptual alteration accompanied by strong uneasiness and psychomotor agitation. For one to two minutes he would stop communicating, would turn pale and such crises became more frequent and without any presentiment and were noticeable to others.

EEG was performed several times and revealed focal changes in left temporal region, which, after hyperventilation and intermittent photic stimulation, tended to gather and form short generalised paroxysms. Neuroimaging findings (CT and MR-1,5 T) were within standard values. Brain perfusion scintigraphy (SPECT) revealed left frontotemporal hypoperfusion.

The diagnosis of complex partial epilepsy was established after taking the anamnesis and performing neurological examinations.

Lamotrigine was introduced in a daily dose of 25 mg (and was gradually increased every two weeks) in order to reach a stable dose of 500 mg. Six months later the patient attended a neurological check-up and reported a sense of instability while walking, fatigue and mental confusion. He also denied having any epileptic crises while EEG revealed considerable improvement - lighter diffuse dysrhythmic changes.

Lamotrigine was gradually reduced to 200 mg/day over two months and the aforesaid symptoms ceased.

For the next five years the patient regularly attended neurological check-ups, EEG was performed several times and it disclosed mild bilateral centrottemporal dysrhythmic changes.

Ever since epileptic seizures have only occurred once or twice a year and have always been related to either external stressors or psycho-physical exhaustion.

## DISCUSSION

The connection between epileptic seizures, epileptogenesis and differential psychopathology has continuously challenged researchers. Therefore a multidisciplinary approach and the cooperation between psychiatrists and neurologists turns out to be of crucial importance since such approach contributes to a greater improvement of life quality of patients affected by epilepsy (Jacoby & Baker 2008, Suurmeijer et al. 2001).

The most frequent mental disorders affecting epileptic patients are anxiety disorders, depression, panic attacks, behavioural disorders as well as psychotic states with paranoid elements (Resinger 2009, Elliott 2008, Kanner & Nieto 1999).

Biological antagonism between epilepsy and schizophrenia has often been discussed in literature. Farmacoresistant temporal epilepsy is often combined

with behavioural disorders, while differential diagnostic difficulties may be caused by paroxysmal fear in panic attacks compared to ictal fear as the aura of complex partial seizure.

Organic and functional abnormalities of central nervous system suggest that postictal mania is a manifestation of frontal lobe epilepsy, while postictal psychosis is often associated with temporal lobe epilepsy. Brain MR imaging of patients presenting postictal and interictal psychiatric disorders often revealed bilateral hippocampal sclerosis.

There are different factors causing psychotic episodes in epileptic patients and treatment with antiepileptic drugs is one of the risk factors which are often not detected. Recent studies suggest that more than 40% of psychotic episodes in patients suffering from epilepsy are iatrogenic and are mostly caused by the prolonged use of antiepileptic drugs of older generation.

Severe psychiatric complications due to lamotrigine use are quite rare. Psychotic disorders and depression only occur in isolated cases (Fitton & Goa 1995). Hereditary predisposition to psychotic disorders, positive family anamnesis of mental diseases as well as psychotic episodes experienced before have also been stated as risk factors.

Psychotic reactions may occur as an adverse effect of most AED, the risk being elevated especially in the application of fenitoin, topiramate, tiagabine and zonisamide. However, side-effects affecting mental health tend to be reversible and often require just a reduction in dosage. The efficacy of AE treatment of patients affected by epilepsy and mood disorders has also directed clinicians to investigate possible AE benefits in treating other mental disorders such as anxiety states, depression and bipolar disorder.

## CONCLUSION

The use of antiepileptic drugs to control seizures (while minimizing side-effects) remains the predominant approach to epilepsy management. AEDs may impair cognition or produce positive or negative psychotropic effects. New research with modern AEDs continues to expand our understanding and hence our ability to manage epilepsy effectively. The antiepileptic drug lamotrigine, in addition to its anticonvulsant effects, improves mood in bipolar disorders, social interaction and general well-being in patients with epilepsy (Calabrese et al. 1999, Fatemi et al. 1997).

The examined case displays complex partial epilepsy and comorbid mental disorder. The use of lamotrigine, a fourth-generation antiepileptic, which is also a mood stabilizer, has assured a favourable remission of symptoms related to both epilepsy and mood disorders. Side-effects caused by lamotrigine were only temporary and dose reduction was sufficient to eliminate their symptoms. A multidisciplinary

approach turned out to be vital in treating the patient affected by epilepsy and comorbid mental disorders in order to improve his quality of life.

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