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Prevalence of Mood Dysfunction in Epilepsy Patients in Croatia

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A B S T R A C T

Fifty consecutive and consenting epilepsy patients from the Zagreb Epilepsy Center were examined for the presence of depressive symptoms using the Beck Depression Inventory (BDI). This questionnaire has been previously validated for use in the Croatian population. Mean age of the patients was 30.8±13.5 years, 60.4% were females. Majority of them were employed (72.9%) and single (62.5%), and 35.4% had a university degree. Most of them had complex partial seizures (n=40, 80%), and 6 (12%) were diagnosed with idiopathic generalized epilepsy. Assessment with the BDI showed that 33.3% of patients had recent depressive symptoms: 6.3% had mild depressive symptoms, 8.4% moderate and 18.6% severe depressive symptoms. Three patients (6.4%) attempted suicide in the past, two of them had current suicidal ideation, and all of them were severely depressed. This is the first and preliminary study assessing mood dysfunction in epilepsy patients in Croatia. Increased prevalence of depression in epilepsy patients suggests specific approach and need for early treatment.

Key words: *epilepsy, mood, depression, suicide, Beck Depression Inventory, Zagreb Epilepsy Center, Croatia*

Introduction

Epilepsy is a chronic disorder that has complex relations with social, vocational and psychological functioning. Recent studies showed that frequency of mood disorders in patients with epilepsy is increased and include depression, anxiety and psychosis.

In the patients with pharmacoresistant epilepsy prevalence of depression ranges between 20–55% and it is lower, but still increased at about 8–10%, in the patients with fully controlled seizures[1,2]. In general population the prevalence of depression is 2–4%[3]. Current data indicate that mood dysfunction affects patients' perspective of quality of life[4]. In a patient sample from a video/EEG seizure monitoring unit, Boylan et al. found that 50% of epilepsy patients had depressive symptoms and only 17% of them were currently treated with an antidepressant. Mendez et al.[6] used the Hamilton Depression Rating Scale in 175 consecutive patients in an outpatient epilepsy clinic, reporting that 55% met criteria for depression. In a community-based study using the Hospital Anxiety and Depression Scale, Jacoby et al.[1] observed that 21% of 168 patients with medication refractory seizures were depressed. O'Donoghue et al.[8] used the same scale to demonstrate that in 155 patients from two large primary care practices in the United Kingdom, 33% with recurrent seizures and 6% of those in remission had symptoms of depression. Although these studies have methodological variabilities, prevalence of depression is considerably increased in patients with pharmacoresistant epilepsy than in general population.

However, reports of the prevalence of depressive symptoms in the patients with epilepsy have been mostly reported from developed countries. There are only few studies performed in developing countries that include Croatia. These studies show that prevalence of depressive symptoms appears to be in the similar range. In a hospital based cross-sectional study in four major cities in China[8] and the population study in the Nigeria[9], prevalence of depressive symptoms was 38.6%, and 30.8%, respectively. Both studies used the same, Hospital Anxiety and Depression (HAD) scale. Highest prevalence of deressive symptoms in patients with epilepsy (84%) was reported in Togo and Benin (West Africa) using a significant modification of the Goldberg's anxiety and depression scale[10].

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A number of recent studies assessing self-reported quality of life in epilepsy patients showed stronger association with depression, than with seizure factors, including seizure frequency[11–16]. Gilliam et al. suggested that depression in epilepsy patients is the strongest predictor of multiple measures of health outcomes. This group found that depression is more closely related to the overall function and well-being of the patient, than it is with seizure frequency, severity of seizures, IQ or employment. Similar findings, that depression was the single strongest predictor for each Health-Related Quality of Life domains (HRQOL), were observed by Lehrner et al. in 56 consecutive patients with temporal lobe epilepsy (TLE). The significant association of depression with HRQOL persisted after controlling for seizure frequency, seizure severity, and other psychosocial variables. Reports also suggest that people with psychiatric depression and normal neurological examination are at increased risk for developing epilepsy[17]. Hesdorffer et al. showed that attempted suicide should be considered as a predictor for unprovoked seizures in a survey from the Icelandic general practice database[17]. This risk remained when averaged for age, gender, length of medical follow-up, and medical therapies for depression. Some authors also argued that antiepileptic drugs can in some individuals cause or aggravate depressive symptoms[15].

Specific screening and diagnostic tests have been developed for the evaluation of depression in epilepsy. One well validated and reliable instrument for assessment of depressive symptoms in epilepsy patients is the Beck Depression Inventory (BDI)[18]. Jones et al. showed that this test reliably detects depressive symptoms and possibly substitute for larger psychiatric assessment[19].

In this study we determined prevalence of depressive symptoms in epilepsy patients in Croatia. This is the first and preliminary study to examine prevalence of mood dysfunction in epilepsy patients in Croatia.

Patients and Methods

We examined 50 consecutive and consenting epilepsy patients at the Zagreb Epilepsy Center during 2005. Clinic at the Zagreb Epilepsy Center is visited by approximately 500 epilepsy patients annually, and about 25–30% of them are newly diagnosed with epilepsy. The Center is fully equipped with standard EEG machines and accommodates a one bed long term video/EEG monitoring unit. The patients were also referred to the Center by general practitioners or neurologists from other hospitals in Croatia.

Clinical data for patients included age, gender, seizure factors (seizure frequency and type, epilepsy duration, time to initial diagnosis and epileptic region lateralization), education, employment and marital status. These variables were collected in the clinic and the epilepsy evaluation was done on standard digital EEG recordings. Seizure frequency was self-reported by the patients and then averaged for each month for the previous six months. All subjects were evaluated using the BDI. This questionnaire has been widely used for evaluation of recent (during past two weeks) depression symptoms in persons with epilepsy. This test has been previously validated for use in the Croatian population. The BDI requires a self-rating from 0–3 on 21 items; a cumulative total from the addition of individual scores is recorded. Scores of 11 to 15 are indicative of mild, 16–23 of moderate, and 24 or greater of severe depression. The questionnaire was given to the patients by an epileptologist (HH) before further clinical evaluation. This epileptologist explained to patients a completion of the questionnaire in great detail. Each patient also signed the consent form. After completion, the answers were immediately entered into our data base. Patients with the BDI scores indicative of clinical significant depression and patients with previous or current suicidal ideation or suicidal attempt have been referred to a psychiatrist. Statistical analysis was performed using the SPSS (Chicago, IL, v.11.0) program.

Results

Mean age of the patients was 30.8±13.5 years. Majority of them were females (60.4%), employed (72.9%), single (62.5%) and 35.4% of subjects had a university degree (Table 1). Most of the patients had complex partial seizures (n= 40, 80%), and 6 (12%) were diagnosed with idiopathic generalized epilepsy. For four patients the type of epilepsy was not defined. The mean self-reported monthly seizure frequency rate, adjusted for the previous six months, was 2.0±3.4. At the time of their office visit

TABLE 1
DEMOGRAPHIC AND CLINICAL VARIABLES FOR EPILEPSY PATIENTS

Age (y)	30.8±13.5
Gender (M/F, %)	39.6/60.4
Employed (Y/N, %)	72.9/21.1
Marital status (Y/N, %)	37.5/62.5
Seizure type:	
IGE	12% (n=6)
CPS	80% (n=40)
Seizure frequency (average for the past 6 months)	2.0±3.4
Epilepsy duration (y)	10.8±8.94
No. of AEDs (%)	
1	45.8
2	18.8
≥3	4.2
Total BDI score >11	
Depressive symptoms:	33.3%
Mild (total BDI 11–15)	6.3%
Moderate (total BDI 16–24)	8.4%
Severe (total BDI > 24)	18.6%
Past suicide attempt (n=3)	6.4%

M – male, F – female, Y – yes, N – no, y – years, IGE – idiopathic generalized epilepsy, CPS – complex partial seizures, AED – antiepileptic drug, BDI – Beck Depression Inventory

31.3% were recently diagnosed patients with epilepsy, 45.8% of all subjects received AED monotherapy, 18.8% had two, and 4.2% had three antiepileptic drugs (AED).

Assessment with the BDI showed that 33.3% of patients had recent depressive symptoms: 6.3% had mild depressive symptoms, 8.4% moderate and 18.6% had severe depressive symptoms (Figure 1). Three (6.4%) patients attempted suicide in the past, two of them had current suicidal ideation, and all three were with severe symptoms of depression.

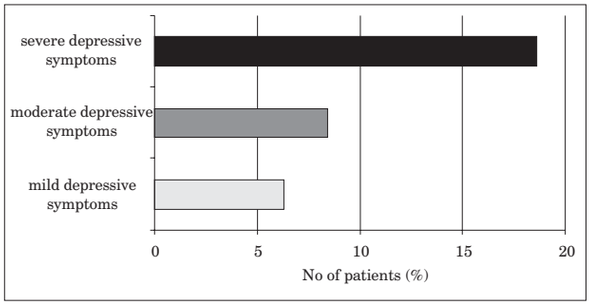

Fig. 1. Prevalence and severity of depressive symptoms in patients with epilepsy.

Discussion

This is the first study assessing mood dysfunction in epilepsy patients in Croatia. We confirmed an increased prevalence of depression in epilepsy patients and showed that every third patient had recent depressive symptoms. There were more subjects with clinically significant depressive symptoms than with mild depression. Additionally we found that 6.4% of our patients attempted suicide in the past and endorsed current depression.

Our study consisted of predominantly younger population with an average socioeconomic background. Almost half of them were on AED monotherapy and had complex partial seizures. Average duration of epilepsy was a decade. Although studies suggest that only a complete seizure freedom can improve quality of life, some of them found that decreased quality of life is due to increased seizure severity, epilepsy duration, patient age and medication toxicity. Others observed that patients with temporal lobe epilepsy have increased levels of depression or suicidal ideation in the postictal state[21]. Baker et al.[22] evaluated social factors and reported that high seizure frequency and lower levels of knowledge about epilepsy lead to depressive symptoms, lower self-esteem and higher levels of social anxiety. In our study 33% patients had recent depressive symptoms. The majority of our depressed patients endorsed severe symptoms (18.6%).

Possible reasons for inadequate detection and treatment include underestimation of the importance of the impact of depression on quality of life, fear of seizure exacerbation by antidepressants, and thoughts that antidepressants are ineffective in epilepsy patients. The relative importance of depression in epilepsy compared to other variables such as seizure frequency and severity has only recently been examined. Depression, and not social and vocational factors, appears to be a stronger predictor of quality of life than seizure frequency partial reduction in patients with active epilepsy. This has important implications on treatment of patients with epilepsy. Recognition of depression in patients with epilepsy is essential to avoid complications directly resulting from severity of depressive disorder, including worsening of the seizure disorder. Thus, we suggest that screening for mood dysfunction should be regularly done in epilepsy clinics.

There are number of limitations of the current study. In this study we included only patients from a tertiary care center. These subjects might not be representative epilepsy patients in general population. Seizure frequency was self-reported by the patients and their answers might have bias due to stigma or unawareness of all their seizures. We used BDI test and not the full psychiatric evaluation to assess for depression and other psychiatric comorbidities. Some symptoms, albeit minor, can potentially be influenced by use of antiepileptic drugs. One suggestion is to use the Neurological disorders depression inventory for epilepsy (NDDI-E)[19] in future studies, a test that evaluates symptoms of depression without influence from AED side effects.

Available evidence indicates that most patients with epilepsy are not screened for depression, and a small proportion of affected patients are subsequently treated. The hesitance to screen and treat may be partially based on the belief that antidepressant medications lower the seizure threshold, despite the recent evidence not supporting this assumption. Many questions including risk factors and neurobiology of depression in epilepsy, its chronicity, contributions to long-term disability and poor health status, most effective treatments, and predictors of refractoriness will need to be addressed before optimal management strategies can be implemented to improve the lives of persons with epilepsy. Our results strongly suggest ethnic and cultural similarities in prevalence of depression in epilepsy in developed and developing countries and importance of mood dysfunction in health outcomes in epilepsy.

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PREVALENCIJA POREMEĆAJA RASPOLOŽENJA KOD BOLESNIKA S EPILEPSIJOM U HRVATSKOJ

SAŽETAK

U ovoj studiji je prikazano 50 konsekutivnih bolesnika s epilepsijom i njihova evaluacija u Centru za epilepsije »Zagreb« pojave simptoma depresije pomoću Beck Depression Inventory (BDI). Svi bolesnici su dali svoju suglasnost za sudjelovanje u studiji. Srednja dob bolesnika je bila 30.8±13.5 godina, 60.4% su bile žene. Većina bolesnika je bila zaposlena (72.9%), izvan bračne zajednice (62.5%), a 35.4% ispitanika je imalo završenu visoku stručnu spremu. Većina ispitanika je imala kompleksne parcijalne napadaje (n=40, 80%), a 6 bolesnika (12%) je imalo idiopatsku generaliziranu epilepsiju. Rezultati BDI studije su pokazali da je 33.3% ispitanika imalo recentne depresivne simptome, 6,3% blage, 8.4% umjerene te 18.6% teške depresivne simptome. Tri bolesnika (6.4%) su imala suicidalne namjere u prošlosti, dva ispitanika su imala sadašnje suicidalne misli, a svo troje je i dalje imalo simptome teške depresije. Ovo je prva i preliminarna studija koja je analizirala prevalenciju poremećaja raspoloženja kod bolesnika s epilepsijom u Hrvatskoj. Povećana prevalencija depresije u bolesnika s epilepsijom zahtjeva poseban pristup i potrebu za ranom dijagnozom i liječenjem.