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Frequency of Depression and Anxiety among Patients with Psychogenic Non-Epileptic Seizures

Nahid Ashjazadeh[1]✉, Kaveh Kashani[2], Ali Sahraian[3], Ali Akbar Asadi-Pooya[1,4]

[1]Shiraz Neurosciences Research Center, Department of Neurology, Shiraz University of Medical Sciences, Shiraz, Iran.
[2]Clinical Neurology Research Center, Shiraz Medical School, Shiraz University of Medical Sciences, Shiraz, Iran.
[3]Research Center for Psychiatry and Behavioral Sciences, Department of Psychiatry, Shiraz Medical School, Shiraz University of Medical Sciences, Shiraz, Iran.
[4]Jefferson Comprehensive Epilepsy Center, Department of Neurology, Thomas Jefferson University, Philadelphia, USA.

Abstract

Background: Diagnosis of psychogenic non-epileptic seizures (PNES) particularly in patients with epilepsy poses a challenge to physicians to care. This study is aimed at determining the frequency of depression and anxiety among Iranian patients with PNES. **Materials and Methods:** Sixty patients with PNES and one hundred age-and-sex matching healthy controls were enrolled in this study from January 2010 to January 2011. Patients had at least one psychogenic non-epileptic seizure recorded during video-EEG monitoring in an epilepsy care unit of Namazi Hospital, Shiraz, Iran. Demographic data were collected and Iranian validated versions of Beck Depression and Anxiety Inventory-2 questionnaires were used. Statistical analysis was conducted using Mann-Whitney U-test, Pearson's chi-square test and independent T test. $P < 0.05$ was considered statistically significant. **Results:** Of 60 PNES patients, 37 (61.7%) were female and 23 (38.3%) were male (P=0.767) and mean of the patients' age was 24.9 ± 6.6 years (P=0.674). Among controls, 64 (64%) persons were female and 36 (36%) were male; mean age was 24.4 ± 2.1 years. Forty two patients (70%) and 36 controls (36%) had moderate to severe depression (P=0.001). Thirty eight patients (63.4%) and 10 controls (10%) had medium to high levels of anxiety (P=0.001). **Conclusion:** Frequency of depression and anxiety among patients with PNES is much higher than general population. Prompt diagnosis of these two common coexisting psychiatric disorders may help physicians for better evaluation and appropriate management of PNES patients. **[GMJ. 2014;3(4):202-6]**

Key Words: Psychogenic Non-Epileptic Seizures (PNES); Anxiety; Depression; Frequency; Video-EEG Monitoring.

Introduction

Psychogenic non-epileptic seizures (PNES) consist of paroxysmal changes in responsiveness, movements, sensations, and/or behavior similar to epileptic seizures, but do not have a neurological origin and are not associated with electrophysiological changes of the epileptic seizures [1]. The prevalence of PNES varies widely from 2 to 33/100,000 in general population. PNES tends to begin in adolescence and young adulthood, although the seizures can occur in a wide range of ages [2]. There is a female preponderance with a

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Fax: +98 731 2227091
PO Box 7461686688
Email:info@gmj.ir

✉ **Correspondence to:**
Nahid Ashjazadeh, MD, Associate Professor of Neurology, Shiraz Neurosciences Research Center, Department of Neurology, Shiraz University of Medical Sciences, Shiraz, Iran.
Telephone Number: (+98)71-36234508
Email Address: neuroscien@sums.ac.ir

female to male ratio of 1:1 to 4:1 in various studies [1-4]. PNES is a major diagnostic challenge in neurology and epilepsy clinics. They account for up to 20% of presumed intractable epilepsy patients who were referred to tertiary epilepsy centers [3-5].

PNES has several etiologies. Among possible etiologic factors, psychopathological mechanisms, abnormal coping strategies and abnormal behavior are responsible. It seems that patients with PNES have impaired coping strategy to handle stress and transform their psychological conflict into a somatic symptom [2]. About two-thirds of patients with PNES have coexisting psychiatric problems [2] in which the most common ones are post-traumatic stress disorder, anxiety disorders [2,5], depression [2,6], conversion and borderline personality disorders [2,4,7]. The gold standard test for diagnosis of PNES is inpatient video-electroencephalography (video-EEG) monitoring and observation of at least one attack which is confirmed by the patient's family as a typical event [2,4,8]. Treatment should directly target the underlying psychogenic etiology of the PNES. Slow tapering of antiepileptic drugs (AEDs) along with appropriate psychotropic medical therapy and psychotherapy is recommended. This study was conducted to determine the frequency of depression and anxiety among patients with definite diagnosis of PNES at a tertiary epilepsy center in the south of Iran.

Materials and Methods

In this cross-sectional study, 60 patients with a clinical diagnosis of PNES were recruited from January 2010 to January 2011 in the epilepsy care unit of Namazi Hospital, Shiraz University of Medical Sciences. The diagnosis of PNES was made based on the clinical and video-electroencephalographic grounds. One hundred age-and-sex-matching healthy controls were enrolled from hospital staff and factory workers. Written informed consent was obtained from all patients and controls.

Inclusion criteria include having at least one psychogenic non-epileptic seizure recorded by video-EEG monitoring and a minimum level of eight years of education to be able to fill in the questionnaires. Exclusion criteria were concomitant epileptic seizures or any serious medical or known psychological diseases. Demographic data (e.g. sex, age, age of onset, education level, etc.) were collected. There was no limitation regarding the patients' degrees of education. We used Iranian validated version of Beck Depression and Anxiety Inventory-2 questionnaires to investigate the frequency of depression and anxiety among patients and controls [9].

SPSS software version 16 (SPSS Inc., Chicago, IL) was used for the statistical analysis of the data. Frequency, mean and standard deviation (SD) were utilized for analysis of quantitative data and Mann-Whitney U-test, Anova One Way test and Pearson Chi-Square test were used for comparison of qualitative data in two groups of patients and controls. $P<0.05$ was considered statistically significant.

Results

Of 60 PNES patients, 37 (61.7%) were female and 23 (38.3%) were male (P=0.767). Mean of the patients' age was 24.9 ± 6.6 years (P=0.674). Demographic data and clinical characteristics of the patients and controls are shown in Table 1. Latency to diagnosis of PNES in the studied patients was below 1 year in 47 (78.3%), 1 year in 8 (13.3%), and 2 years in 5 (8.3%). Frequency of depression and anxiety among patients and control groups, according to Beck Depression and Anxiety Inventory-2 questionnaires score, is demonstrated in Table 2. There were no significant relationships between depression and age (P=0.3), sex (P=0.7), marital status (P=0.1), and education (P=0.4) of the patients and controls. In addition, no significant relationship between anxiety and age (P=0.8), sex (P=0.5), marital status (P=0.8) or education (P=0.4) was found in patients and controls. Of 60 PNES patients, 33 patients (55%) had received some AEDs before their admission. The results showed that there weren't any different frequencies in depression (P=0.8) or anxiety (P=0.8) in patients who were taking either AEDs or nothing. Slow discontinuation of AEDs in these patients along with appropriate psychotherapy was done and 34 patients (56.7%) were seizure free after 6 months of follow-up. There was also no significant re-

lationship between continued PNES and patients' sex (P=0.5), education (P=0.7) and marital status (P=1).

Discussion

PNES is a common and major diagnostic challenge in neurology and epilepsy clinics [3-5]. Female predominance and mean age of patients with PNES in our study were comparable with previous studies [2,4].

Table 1. Demographic and Clinical Characteristics of Patients and Controls

Variable	Patients (n=60)	Controls (n=100)	P value
Age (Mean±SD)	24.85±6.56	24.48±2.17	0.674
Sex (%)			
Male	23 (38.3%)	36 (36%)	0.767
Female	37 (61.7%)	64 (64%)	
Education (%)			
Illiterate and non-academic	46 (76%)	81 (81%)	0.820
Academic	14 (24%)	19 (19%)	
Marital status (%)			
Single	36 (60%)	62 (62%)	0.802
Married	24 (40%)	38 (38%)	

Table 2. Frequency of Depression and Anxiety among Patients with PNES and Controls according to Beck Depression and Anxiety Inventory-2 Questionnaires

Variable	Patients (n = 60)	Controls (n =100)	P value
Depression (%)			
Non	4 (6.7%)	41 (41%)	0.001
Mild	14 (23.3%)	23 (23%)	NS*
Moderate	26 (43.3%)	29 (29%)	0.001
Severe	16 (26.7%)	7 (7%)	0.001
Anxiety (%)			
Non or very mild	22 (36.7%)	90 (90%)	0.001
Moderate	22 (36.7%)	70 (10%)	0.001
Severe	16 (26.7%)	0	0.001

* NS: Not Significant.

High index of suspicion is always necessary in managing patients with seizures, particularly those with unusual manifestations or uncontrolled seizures to make a correct diagnosis. The majority of our patients had relatively short latency interval to diagnosis of PNES, while long latency intervals to PNES diagnosis were reported in some previous studies [10,11].

In the current study, about two-thirds of the patients were illiterate or had non-academic education and more than half of them were unmarried. Higher prevalence of PNES among people with lower education level and unmarried patients has been reported in previous studies [12,13].

Many patients with PNES have coexisting psychiatric problems [1-8,12,13]. In the current study, the frequency of depression and anxiety among patients with PNES was very high (93.33% and 60.33%, respectively). Several studies have documented high prevalence of depression and anxiety among patients with PNES [2,12-17]. D'Alessio *et al*. [18] reported prevalence of depression and anxiety in 54% and 25% of 24 patients with pure PNES, respectively. Bora *et al*. [13] also reported frequency of major depressive and generalized anxiety disorders in 31% and 15% of 67 cases with PNES, respectively. There are some studies on the prevalence of mood disorder in Iranian population [19]. Sadeghirad *et al*. [19] in a systematic review showed overall prevalence of major depressive disorder in 4.1% of Iranian population. However, the frequency of depression and anxiety among our patients was higher than what was reported in previous studies [12]. This finding could be related to different methodologies (e.g. using questionnaire and milder form of depression in our study or questionnaire versus interview in various studies). However, other factors including cultural differences, political and economic conditions, and religious differences might play a role. This difference needs further exploration in future studies.

After appropriate medical and psychological managements, psychogenic non-epileptic seizures stopped in 16% to 50% of patients with PNES [2-4,20-22]. Longer periods of psychogenic seizures before making diagnosis, concomitant epilepsy, severe personality disorder

and repeated sexual trauma are some of the main factors for poor outcome among these patients [1-3]. Psychogenic non-epileptic seizures stopped in 56.7% of our patients. This high success rate in treating these patients could be related to the short latency to diagnosis in the majority of our patients (less than one year in 78.3%, Table 1) and exclusion of those with concomitant epilepsy in this study. This was a clinic-based series and because of the possibility of selection bias, it may not represent the full spectrum of patients with PNES. The follow-up period was relatively short.

Conclusion

Frequency of depression and anxiety among patients with PNES is much higher than general population. Prompt diagnosis of these two common coexisting psychiatric disorders may help physicians for better evaluation and appropriate management of PNES patients.

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