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A CLINICO-ELECTROPHYSIOLOGICAL STUDY OF PYSCHOGENIC NON EPILEPTIC SEIZURES IN EASTERN INDIAN POPULATION

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INTRODUCTION

Psychogenic non epileptic seizures (PNES) are events which resemble seizure clinically but do not have an electrical co-relation in Electroencephalogram and have an underlying psychological cause for the same.[1-3] Incidence of PNES is approximately 1.5/100,000 persons per year. The incidence is about 4% of that of incidence epilepsy.[4-5] However in Epilepsy units the almost a quarter of patients with difficult to treat epilepsy may be actually having non epileptic events.[6-7]

KEYWORDS: The incidence is about 4% of that of incidence epilepsy.

It becomes very important not to misdiagnose PNES as epileptic disorder. Antiepileptic medications do not control PNES and it is seen almost 80% of PNES are initially treated with antiepileptic agents.[8-9]

Antiepileptic agents may lead to unnecessary adverse effects including teratogenicity. PNES can be falsely diagnosed as status epilepticus which may lead to unnecessary parental antiepileptic and invasive procedures like intubation and ventilation.[10-11]

PNES being diagnosed as epilepsy may lead to social, economic, personal and professional implications in an adverse manner. The underlying psychological issues may give rise to increased risk of suicidal events.[12-14]

Video EEG is the gold standard investigation to diagnose epilepsy as well as PNES 15. PNES may occur on giving suggestions and simple techniques like using cotton patches, Tuning forks, Saline injections etc may be quite useful in precipitating the habitual events without causing any harm. Inter Ictal EEG may be quite nonspecific in the diagnosis of PNES.[16-17]

Frontal seizures may sometimes like surface EEG changes or may obscure the EEG with muscle artefacts giving rise to false negative reports and misdiagnosing epileptic attacks as PNES.[18-21]

This study was undertaken as there was lack of Indian studies on PNES and its clinical features. This study would help us through light on the various clinical and demographic aspects of PNES in Eastern Indian population.

MATERIALS AND METHODS

This is a retrospective study done at a referral Neuroelectrophysiology Laboratory at Durgapur, West Bengal. Patients with a diagnosis of Psychological Non Epileptic Attacks (PNES) were studied during the study period of January 2019 to February 2020. Patients Demographics, Co morbidities and Clinical phenomenology were studied.

AIMS AND OBJECTIVES

To study the clinical profile and co morbidities of patients diagnosed with Non epileptic events at Aarogyam Neurodiagnostic Laboratory.

Inclusion criteria

All patients had clinical history of seizure like episodes
Video EEG was done in all patients who were included in the study and all of the patients had either one or more habitual event identified by a patient relative during the video EEG recording without any EEG co-relation.

Exclusion criteria

All patients with History or Investigation suggestive of Vasovagal syncope or Cardiac diseases.

The VIDEO EEG was done using a Nicolet V44 Machine. All the episodes were witnessed and the EEG was analyzed in detail by the Technologist. The findings was reconfirmed by Neurologist.

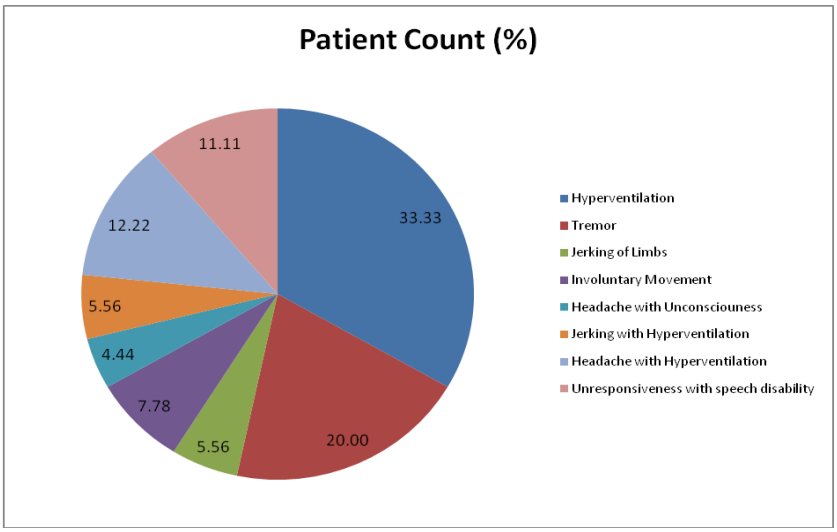
The clinical features during the confirmed Non epileptic attack was studied. The patients demographic profile and co morbidities were noted from the case sheet.

RESULTS

A Total of 90 patients were diagnosed with PNES during the study period. Out of which 68 were female (75.56%) and 22(24.44%) were male. The most common age group was from 11-30 years which constituted about 67% of the study population. The least common group was above 40 years (5.5%). Rest of the details have been mentioned in the Table no 1 Below.

Age Group	Number of patients	(%)Percentage of total sample(n=90)
< 10 yrs	8	8.89
11 - 20 yrs	34	37.78
21 - 30yrs	26	28.89
31 - 40yrs	17	18.89
>41yrs	5	5.56

The clinical features observed were classified into common patterns observed in the study population. The most common pattern during the non epileptic attacks were Hyperventilation in one third of the patients. Tremor of limbs was seen in 20% of the patients. Other common clinical patterns were unresponsiveness with speech difficulty, Flinging movements of limbs. 10% of patients had crying along with the other manifestations. None of our patients had tongue bite, urinary or fecal incontinence.



The details of the clinical features has been represented in Figure 1.

The common comorbidities in the study population was underlying pyschological diseases in 20 patients (18.2%). Generalised anxiety disorder and panic disorder (15.5%) and depression(6.6%) were the common disorders related to PNES. Migraine and other headache disorders like Tension Headache was seen in 25 patients (27.7%). Pain disoders like fibromyalgia and myofascial pain was associated in 15 patients (16.5%). 5 patient had a diagnosis of epilepsy with associated PNES. It was observed that almost 20% of the study population excluding those with epilepsy were started on antiepileptic agents for the PNES which was subsequently stopped after the confirmation of the diagnosis of PNES.

DISCUSSION

This condition has been termed as pseudoseizures, Non epileptic fits, hysterical attack or pyschoseizures. Some of the terminology may have a stigma associated with it. Hence PNES(Pyschogenic non epileptic seizures) has been accepted as a preferable terminology. This condition can have a huge economic burdern especially in developing countries. Ten percent of patients may present with status epilepticus like presentation.[22]

There may be some clinical pointers towards PNES like fluctuating consciousness, out of phase jerky movements, pelvic thrusting, sideways head movements during the attack and tight eye closure.

Closed eyes with resistance to eye opening is a reliable feature of PNES and helps to differentiate from epileptic fits. Wild flinging of limbs, yelling of words, teeth clenched during tonic phase of the suspected seizure activity may be pointers towards a non epileptic event.[23-25]

Our study showed a female predominance with the first and second decade being the commonest age group which was effected. The most common clincial pattern seen during PNES was hyperventilation, tremors and jerking of limbs, unresponsivness, bizzare movements of lmbs and oher manifestations which are discussed above in results section.

The common comorbidites were pyschiatric issues like generalised anxiety disorder, panic attack, depression, migraine and other primary headache disorders, Pain syndromes like fibromyalgia andd myofascial disorders. Most of the findings in our study was comparable to various studies analysed in literature review.

A model explaining the pathogenesis of the PNES was postulated by Reuber and Elger.[26] There are five levels of this model-Psychological etiology, Vulnerability, Shaping factors, Triggering factors and Prolongation factors.

The key to diagnosis of the PNES is to obtain a detailed clinical history of the event by a reliable witness. A video recording of the event may be very useful. During examination of a patient during the attack certain findings are reliable. Tight closure of eyes with resistance to opening, Patients hand falling sideways when made to fall of face, visual fixation to a mirror placed in front of patient and a normal corneal and plantar reflexes are important findings consistent with PNES.

The gold standard investigation for diagnosis however remains to be a Video EEG recording the event without any electrical co-relation to the event.

The correct diagnosis of the condition and the comorbidities can help in avoiding unnecessary antiepileptic medications and expensive and invasive treatment. Moreover it may help us in addressing the psychological co morbidities and in treating them adequately.

CONCLUSION

PNES is quite common and proper diagnosis with Video EEG can help in avoiding unwanted treatment. Hyperventilation, tremors and unresponsiveness are the common manifestations. Comorbidites like pyschological illness, Migraine and fibromyalgia are very common in a patients with PNES.

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