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EPIDEMIOLOGICAL ASPECTS OF PREVALENCE AND PATTERN OF EPILEPSY IN SOUTH WEST RAJASTHAN

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ABSTRACT

seizure is a paroxysmal event due to abnormal excessive or synchronous neuronal activity in the brain, and epilepsy is a disorder characterized by recurrent seizures of cerebral origin, presenting with episodes of sensory, motor or autonomic phenomenon with or without loss of consciousness, this study aimed to determine the prevalence and pattern of epilepsy in south west rajasthan among 1 to 90 years age group persons were screened by H-H survey of rural and urban population by screening approximately 50000 subjects.

INTRODUCTION

A seizure is a paroxysmal event due to abnormal excessive or synchronous neuronal activity in the brain & Epilepsy is a disorder characterized by recurrent seizures of cerebral origin, presenting with episodes of sensory, motor or autonomic phenomenon with or without loss of consciousness.[1]The disturbances of neuronal activity that occur during seizures may result in strange sensations, emotions, and behaviours and sometimes cause convulsions, abnormal movements, and loss of consciousness.2

Epilepsy is the second most common chronic neurological condition. There are 50 million people living with epilepsy worldwide, and most of them reside in developing countries. A study estimated that there are more than 10 million persons with epilepsy (PWE) in India. Its prevalence is approximately 1% of our population and is higher in the rural (1.9%) compared with the urban population (0.6%). The disorders affect both male and female subjects and can develop at any age.[3] The burden of epilepsy, as estimated using the disability-adjusted life years (DALYs), accounts for 1% of the total burden of disease in the world. Despite advances in epilepsy treatment, a large treatment gap exists in India, which can be attributed to the lack of knowledge of antiepileptic drugs (AEDs), poverty, cultural beliefs, stigma, poor health care infrastructure, and shortage of trained professionals.[4] The diagnosis of epilepsy is essentially clinical, based on an eyewitness account of the seizure.[5]

Several studies have reported that a large proportion of Indian patients with epilepsy do not get treatment. The causes of this significant treatment gap include high cost of treatment, non availability of anti-epileptic drugs, faith in alternative treatments, superstitions and cultural beliefs.[6]

On the basis of etiology, epilepsy can be divided into three major categories: Idiopathic, symptomatic, and cryptogenic. Infectious diseases play an important role in the development of seizures.[7-8]

AIMS AND OBJECTIVES

1 To determine the Prevalence of Epilepsy using ILAE-2017 case definition through house to house (H-H) survey of randomly selected villages in South-West Rajasthan.
2 To determine the pattern of epilepsy in the population using NIMHANS screening questionnaire.

MATERIALS AND METHODS

Methodology used H-H survey of rural and urban population by screening approximately 50000 subjects and those attending epilepsy clinic

Study design: Observational study
Duration: 2 years
Inclusion criteria:

- 1 to 90 years age group persons were screened by H-H survey.
- All out patient attending epilepsy clinic at tertiary care centre.
- All in patient having diagnosed seizure at GMCH, Udaipur.

Exclusion criteria:

- Patients with syncope, psychological, metabolic sleep, & movement disorder, TIA, Migraine
- Not willing to participate in the study.

OBSERVATION AND RESULTS

TABLE 1: PREVALENCE OF EPILEPSY USING ILAE-2017 CASE DEFINITION THROUGH (H-H) SURVEY OF RANDOMLY SELECTED VILLAGES IN SOUTH-WEST RAJASTHAN.

Table 1: represents Prevalence of epilepsy in the population studied is 6.44%.

Parameters	Male	Female	Total
Survey population	24260	22251	46511
Incidence of epilepsy	178	127	305

TABLE 2: ETIOLOGIES IN PWE

Etiologies	No.	%
CNS tumor	27	8.85
Metabolic	18	5.90
CNS infection	16	5.25
Vascular lesion	16	5.25
Intellectual & developmental disabilities	10	3.27
Mesial temporal sclerosis	10	3.27
Premature birth	5	1.64
Hydrocephalus	3	0.98
Neurocutaneous syndrome	3	0.98
Head trauma	3	0.98
Neuro Degenerative disorder	2	0.65
Metastasis	1	0.33
Unknown	190	62.29
Total	**305**	**100**

Table 2: represents CNS tumor, metabolic syndrome, CNS infection, vascular lesion, Intellectual & developmental disabilities, Mesial temporal sclerosis, premature birth, hydrocephalus, Neurocutaneous syndrome, head trauma, Neurodegenerative disorders, metastasis, unknown are the etiological factors present in PWE. However, more than two-third PWE had unknown etiological factors.

TABLE 3 : TYPE AND SUB TYPE OF SEIZURES IN PWE.

Pattern of seizure	Sub type of seizures	No.	%
Generalized	Primary/idiopathic	118	38.69
	Symptomatic/provoked	67	21.97
Focal/partial	Focal aware/SPS	16	5.24
	Focal impaired awareness/CPS	60	19.68
	Focal secondary generalized	10	3.27
Epileptic syndrome	Juvenile/JANZ syndrome	25	8.20
	Rasmussen syndrome	1	0.32

Table3: represents primary or idiopathic and symptomatic/

provoked type of generalized seizures were present in 38.69% and 21.97% PWE. Focal impaired awareness/CPS was present in 19.68% and Juvenile/JANZ syndrome in 8.2%. Other variants were rare.

DISCUSSION

The overall prevalence rate of epilepsy was 6.44. This is in concordance with other studies which reported 6.38.9 and 5.35/ 1000.10 Mean age of male and female patients was 36.8±19.34 and 33.1±19.17. Other studies have reported a mean age of 35.6± 12.6 years 9 and 42.7 ± 16.7 years.10 Prevalence is more in males (58.36%) than in females (41.64%). Earlier studies from India reported corresponding values as 5.88% and 5.51%,9 15.4% and 6.8%.11 Epilepsy was found more prevalent in age range 20-60 years followed by 60-70 in males and 10-30 years followed by 30-50 in females. In other Indian studies reported a higher prevalence during the second decade12. Epilepsy was most common in middle and lower income groups. A recent hospital-based study of 196 cases in Karnataka also showed that >80% patients belonged to low socio-economic status and were unskilled workers.14 Another recent community-based study15 reported higher proportion of PWE among manual workers and low income groups, both in slum and non-slum areas. Epilepsy was more prevalent in patients educated up to middle or high school. This compares well with other studies and may be linked to differentially higher representation from urban areas. Epilepsy was most common in rural males and urban females.15 The most common type of psychiatric co-morbidity was substance abuse (2.62%), followed by sleep disorder (1.64%), depression (1.31%) and mental retardation (1.31%). Psychiatric disorders were also present as follows: psychotic 28%, mood 21% and anxiety disorders 14%.14 Another study showed that psychiatric co-morbidity included depression, anxiety, psychotic disorders, cognitive, and personality changes occurring in the interictal or ictal/postictal states13 besides 45% incidence of psychiatric disorders in PWE. 62.29% PWE had no known etiology. Rest 37% included CNS tumor (8.85%), metabolic (5.90%), CNS infection (5.25%), vascular lesions (5.25%), intellectual & developmental disabilities (3.27%), mesial temporal sclerosis (3.27%), premature birth (1.64%), besides <1% instances of Hydrocephalus, Neurocutaneous syndrome, Head trauma, degenerative disorder, and Metastasis. Another study estimated that cerebrovascular diseases account for 30–50%, primary neuro-degenerative disorders and head trauma for 10–20% each and brain tumors for 10–30% ; one-third to one-half of geriatric epilepsies have undetected causes.14 Generalized seizure was recorded in 60.6% patients, focal or partial seizure in 28.1%, epileptic syndrome in 9.1% patients and with this refractory epilepsy in 0.6% patients. In other studies, generalized seizure was most commonly reported (55.4%).15 Less than 10% patients had a close relative having family history of epilepsy, implying a weak genetic component. If any distant relative is a PWE, the risks are not very different from those faced by the general population.15 However one study shows a 62% sensitivity of the family history for epilepsy.16 54.75% patients were on monotherapy since generalized seizure was the most common type present in patients 45.25% were on polytherapy. Another study also showed that in patients with generalized seizures, prescription of monotherapy was significantly higher than that of polytherapy.14 Treatment gap was higher in rural (69.23%) compared to urban areas (48.99%). Similar results were reported elsewhere.17 Most PWE with treatment gap belonged to lower income group. In other studies which showed that treatment gap is strongly influenced by socio-economics class.18

CONCLUSION

The results of this study are in same line with many different research works, both in India and abroad and provide a good insight regarding the demographic parameters, comorbidities, and antiepileptic drug utilization pattern in patients with epilepsy in tribal south west Rajasthan, India. It further emphasizes that healthcare providers need to recognize the burning issue of different aspects of psychiatric comorbidity for management, better outcome, and policy making in patients with epilepsy.

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