

A Comparative Analysis Of The Clinical Profile Of Patients With Epilepsy Suffering With Psychiatric Comorbidity

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Abstract

Aim: To compare the clinical profile of the patients with epilepsy according to Presence or Absence of Psychiatric Comorbidity

Material and methods: The research was carried out in the Psychiatry Department of Rohilkhand Medical College & Hospital (RMCH), Bareilly, a Tertiary care centre in Uttar Pradesh, India. In this research, a total of 100 epileptic patients who met the inclusion and exclusion criteria were recruited. Purposive sampling was used to recruit people for the research. This research comprised individuals over the age of 18, epileptic sufferers, and patients in the inter-ictal period.

Results: Mean age of the patients with psychiatric co morbidity (32.67 ± 9.50 years) was significantly higher ($t = 2.931$, $df = 98$, $p < 0.05$) than those without psychiatric comorbidity (28.79 ± 9.21 years). Mean GHQ12 Scores in patients with epilepsy having psychiatric comorbidity (13.76 ± 8.191) was significantly higher (Independent samples t test = 2.23 , $p < 0.05$) than those without psychiatric comorbidity (10.51 ± 6.385). Significantly more ($\chi^2 = 9.82$; $df = 1$; $p < 0.05$) number of patients with epilepsy were found to be suffering from a psychiatric disorder who had a psychiatric disorder in their first or second degree relatives. In terms of other clinical variables like age of onset of seizure, duration of epilepsy, type of seizures, etiology, age of onset (in years), duration of epilepsy (in years), seizure frequency, family history of seizure, past history of mental disorder, there was no significant group difference between the patients with epilepsy with psychiatric comorbidity & without psychiatric comorbidity.

Conclusion: This study's results add weight to the widespread anecdotal evidence that people with epilepsy regularly co-occur with a number of mental illnesses, including personality disorder. Taken together, our findings highlight the critical need of recognising the multifaceted nature of mental comorbidity in epilepsy patients for the sake of therapy, improved outcome, and policy making.

Keywords: epilepsy, Psychiatric Co morbidity

Introduction

It is believed that epilepsy contributes less than 1% to the total illness burden worldwide. About 70 million individuals are affected, and it's

responsible for more than 17 million disability-adjusted life-years (DALYs) per year. ¹ The rate of premature death is high. Standardized mortality rates for inpatients with epilepsy are

over 10, and fatalities in those younger than 55 account.^{2,3} Up to 5% of all epilepsy deaths are attributed to suicide attempts, although whether epilepsy itself is linked to suicide attempts is not known.^{4,5} After accounting for mental comorbidity, one research revealed that epilepsy is an independent risk factor for suicide,⁶ however studies from Canada⁷ and the United Kingdom⁸ found no such association. In addition, there is a lack of consensus on whether or not epilepsy alone increases the risk of suicide in the absence of mental comorbidities.^{6,7} Treatment recommendations and national suicide prevention efforts that target high-risk populations^{9,10} might be improved with more clarity. Up to 16% of epilepsy-related fatalities are attributable to other causes, such as car and non-vehicle accidents.^{10,11} In certain nations, the fatality rate from car accidents is not noticeably greater than the general population, and this is likely due to the restrictions placed on drivers with epilepsy. It is unclear, however, whether or whether public health and education interventions have a role in lowering deaths in people with epilepsy that result from events other than motor vehicle collisions. In particular, past research have not addressed mental comorbidity, and it is unclear whether or not there is a link between non-vehicular unintentional fatalities and psychiatric problems.¹¹

Material and methods

The research was carried out in the Psychiatry Department of Rohilkhand Medical College & Hospital (RMCH), Bareilly, a recently created Tertiary care hospital in Uttar Pradesh, India. This institute's catchment regions include much of western and eastern Uttar Pradesh, as well as Uttarakhand. In this research, a total of 100 epileptic patients who met the inclusion and exclusion criteria were recruited. Purposive sampling was used to recruit people for the research. This research comprised individuals over the age of 18, epileptic sufferers, and patients in the inter-ictal period. Patients who were physically unfit or asleep, as well as those

who were not accompanied by at least one trustworthy informant, were eliminated from the research.

Methodology

The research comprised patients from the outpatient psychiatry department at Rohilkhand Medical College and Hospital in Bareilly. These individuals either came in Tertiary care hospital on their own or were referred from other departments for additional mental examination. Following screening according to inclusion and exclusion criteria, clinical diagnosis of epilepsy was made using the International League Against Epilepsy (ILAE) guidelines on seizure classification; after which a thorough physical examination was performed, neuroimaging and other relevant investigations such as routine blood investigations, Computed Tomography (CT) Scan(Head), MRI(Head), EEG were performed as and when required. After receiving informed permission, socio-demographic data were collected. The General Health Questionnaire (GHQ)12 Scale was used on individuals to determine their psychological health state. They were thoroughly evaluated for the existence of co-morbid mental illnesses on Axis 1 using Structured Clinical Interview for DSM-IV Axis I disorders (SCID-1), and the presence of personality disorders on Axis 2 using SCID-2. Statistical investigation

The International Business Machines (IBM) Statistical Package for Social Science (SPSS) version 22 for Windows 8.1 was used for the analysis. For summarising socio-demographic and clinical data, descriptive statistics were employed. The distributions of clinical and experimental parameters were tested for normality using the Shapiro Wilks Test. The Chi-square (2) test was used to compare groups (based on the presence or absence of mental illness) with Fisher's exact test (where appropriate) for categorical variables. The Independent t Test was used for normally distributed continuous variables (such as age).

In our research, the threshold of significance evaluated for group comparison was $p < 0.05$.

Results

Table 1 compares socio-demographic details of patients with epilepsy (PWE) according to presence or absence of psychiatric comorbidity. Mean age of the patients with psychiatric comorbidity (32.67 ± 9.50 years) was significantly

higher ($t = 2.931$, $df = 98$, $p < 0.05$) than those without psychiatric comorbidity (28.79 ± 9.21 years). In terms of other socio-demographic variables like gender, religion, marital status, education, occupation, residence, socioeconomic status & family type, there was no significant difference between the patients with psychiatric comorbidity and those without psychiatric comorbidity.

Table 1: Comparison of Socio-demographic details of patients with epilepsy according to Presence or Absence of Psychiatric Comorbidity

Socio-demographic Variables		Patients with Epilepsy (N=100)	PWE with Psychiatric-Comorbidity (n%)	PWE without Psychiatric-Comorbidity (n%)	t/ χ^2	df	p value
			Mean \pm SD	Mean \pm SD			
Age (in years)			32.67 \pm 9.50	28.79 \pm 9.21	2.931	98	0.004*
			n%	n%			
Gender	Male	55	26%	29%	0.26	1	0.614
	Female	45	19%	26%			
Religion	Hindu	77	35%	42%	0.17	2	0.919
	Muslim	17	7%	10%			
	Sikh	6	3%	3%			
Marital Status	Single	40	17%	23%	2.55	2	0.279
	Married	58	26%	32%			
	Divorced	2	2%	0%			
Education	Illiterate	8	3%	5%	1.01	4	0.907
	1 st -10 th Std.	53	26%	27%			
	Pre-University	18	8%	10%			
	Graduate	15	6%	9%			
	Postgraduate or above	6	2%	4%			
Occupation	Unemployed	10	4%	6%	0.42	3	0.807
	Unskilled Employment	52	25%	27%			
	Skilled Employment	38	16%	22%			
Residence	Rural	27	12%	15%	0.01	2	0.99
	Semi Urban	29	13%	16%			
	Urban	44	20%	24%			
Socio-economic Status	Low	20	8%	12%	0.27	2	0.876
	Middle	71	33%	38%			
	High	9	4%	5%			

Family type	Nuclear	64	29%	35%	0.01	1	0.933
	Joint	36	16%	20%			

*significant at $p < 0.05$; df= degree of freedom.

Table 2: Comparison of Clinical Details in patients with epilepsy with and without Psychiatric Comorbidity

Clinical variables	Description	Patients with Epilepsy (PWE) (N=100)	PWE with Psychiatric-Comorbidity (n%)	PWE without Psychiatric-Comorbidity (n%)	t/ χ^2	df	p value
			Mean \pm SD	Mean \pm SD			
Age of onset of seizure (in years)			22.36 \pm 7.969	20.49 \pm 9.043	1.08	98	0.282
Total duration of epilepsy (in years)			6.00 \pm 4.151	5.51 \pm 3.910	0.61	98	0.545
GHQ12 Score			13.76 \pm 8.191	10.51 \pm 6.385	2.23	98	0.028*
			n%	n%			
Type of Seizures	Complex partial	45	20%	25%	2.67	3	0.445
	CPS with Secondary Generalization	17	8%	9%			
	Generalized Tonic-Clonic Seizures	35	17%	18%			
	Simple partial	3	0%	3%			
Etiology	Idiopathic	56	26%	30%	0.77	4	0.946
	Infections	33	15%	18%			
	Vascular	5	2%	3%			
	Traumatic	4	1%	3%			
	Tumour	2	1%	1%			
Seizure Frequency	1 or less per month	21	12%	9%	2.20	4	0.697
	2 - 4 per month	29	11%	18%			
	5 - 15 per month	25	12%	13%			
	16 - 30 per month	17	7%	10%			
	more than 30 per month	8	3%	5%			
Family History of Seizure	No	77	35%	42%	0.03		0.867
	Yes	23	10%	13%			
Family History of Mental Disorder	No	75	27%	48%	9.82	1	0.002*
	Yes	25	18%	7%			
Past History of Mental Disorder	No	87	37%	50%	1.65	1	0.199
	Yes	13	8%	5%			

*Significance at $p < 0.05$ (2-tailed); df= degree of freedom

Table 2 compares the clinical details of patients with epilepsy according to presence or absence of psychiatric comorbidity. Significant group difference was found in two variables: GHQ 12 scores and family history of mental disorder. Mean GHQ12 Scores in patients with epilepsy having psychiatric comorbidity (13.76 ± 8.191) was significantly higher (Independent samples t test = 2.23, $p < 0.05$) than those without psychiatric comorbidity (10.51 ± 6.385). Significantly more ($\chi^2 = 9.82$; $df = 1$; $p < 0.05$) number of patients with epilepsy were found to be suffering from a psychiatric disorder who had a psychiatric disorder in their first or second degree relatives. In terms of other clinical variables like age of onset of seizure, duration of epilepsy, type of seizures, etiology, age of onset (in years), duration of epilepsy (in years), seizure frequency, family history of seizure, past history of mental disorder, there was no significant group difference between the patients with epilepsy with psychiatric comorbidity & without psychiatric comorbidity.

Discussion

We tried to assess indirectly any impact of psychiatric comorbidity in patients with epilepsy after dividing them into two groups on the basis of presence or absence of psychiatric comorbidity. We found that the mean age of the patients with psychiatric comorbidity as a group was significantly more than those without such comorbidity. It might be due to longer pathway of care for the patients with epilepsy as it has also been found, that more number of patients with psychiatric comorbidity were referred by other physicians when they found features of psychiatric disorders in the patients with epilepsy which they were already treating. In terms of other socio-demographic variables like gender, religion, marital status, education level, occupation, residence, socioeconomic status or family type, there was no difference in the patients after dividing them on the basis of

presence or absence of psychiatric comorbidity. The mean age of patients of our study was 32.33 years with a standard deviation of ± 9.828 years; this is similar to other studies from developed nations that show greater incidence in the higher age groups. The age distribution across other Indian studies were variable, however most patients were between 20-40 years of age.^{12,13}

In our study we found that majority of the patients were males 55%, though the respective proportions were not significantly different unlike other studies that report a male preponderance.¹⁴ Nearly two third (77%) of the patients were Hindu, and the rests were of Muslim (17%) or of Sikh (6%) religion. This finding indicates the prevailing communities in the catchment area our institute where this study was performed. The majorities of the patients were married, with education level of 1st to 10th standard, with unskilled employment, of nuclear family type and middle socioeconomic status. Only 27% of the patients were from rural background and the rests of them came from semi-urban or urban background. Most of the studies which have been conducted outside India have not specifically taken into consideration the various socio-demographic variables, but many of the Indian studies have mentioned similar socio-demographic values.^{12,13,15} However, when we compared the two groups on the basis of presence or absence of psychiatric comorbidity, there were some differences in terms of clinical details. It was found that the GHQ 12 Scores were significantly higher in the patients with psychiatric comorbidity, when compared to patients without psychiatric comorbidity. This can be understood as GHQ12 has been designed as a screening tool with the purpose in mind to find out the patients with psychiatric morbidity in the population and therefore the group with psychiatric morbidity is bound to have higher GHQ12 scores when compared to the another group in this study. These findings are

consistent with the studies of Saha et al¹⁴ and Kandeegan et al.¹³ Significantly more number of patients with psychiatric comorbidity had family history of mental disorders than those without psychiatric comorbidity. This further supports the notion that genetic loading plays a role in having psychiatric disorders and this finding is consistent with the study of Robertson et al¹⁶ and Qin et al.¹⁷ In terms of other categorical clinical variables like Type of Seizures, etiology of seizures, Seizure Frequency, family history of seizure and past history of mental disorders, there was no significant group difference between the patients with epilepsy with psychiatric comorbidity & without psychiatric comorbidity.

Conclusion

This study's results add weight to the widespread anecdotal evidence that people with epilepsy regularly co-occur with a number of mental illnesses, including personality disorder. Taken together, our findings highlight the critical need of recognising the multifaceted nature of mental comorbidity in epilepsy patients for the sake of therapy, improved outcome, and policy making.

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