

Psychiatric co morbidity in Temporal lobe Epilepsy

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Abstract—Psychiatric co-morbidities are frequently encountered in patients of temporal lobe epilepsy but remain unnoticed. So this study was conducted to assess psychiatric co-morbidities and their severity in patients suffering from temporal lobe epilepsy (TLE). This study was conducted on 50 diagnosed cases of Temporal lobe epilepsy, attending Neurology OPD and who were on medications for more than 1 year. GHQ-12 was applied and patients scoring higher on GHQ 12(>2) were further assessed by psychiatrist and diagnosed accordingly as per ICD-10 diagnostic criteria. Afterwards, Hamilton depression rating scale, Hamilton anxiety rating scale and Brief Psychiatric rating scales were applied for assessing the severity of psychiatric illness in diagnosed patients. Out of total 50 cases of TLE, 29 (58%) presented psychiatric co-morbidities. Majority of these patients had Depression (20%) followed by Generalized Anxiety disorder (10%), Bipolar affective disorder (8%), Panic Disorder (6%), Schizophrenia (6%), Acute transient psychotic disorder (4%) and OCD (4%). Among TLE patient with depression, 40% had moderate to severe depression, similarly among TLE patients with anxiety, 63% had moderate to severe anxiety and among TLE patients with psychosis, 80% had moderate to severe psychosis. This study concludes that high psychiatric co-morbidity in TLE patients emphasizes the need of proper psychiatric evaluation of all the patients with temporal lobe epilepsy.

Keywords: Temporal Lobe Epilepsy (TLE), Psychiatric Co-morbidities.

I. INTRODUCTION

Epilepsy is the most common neurological disorder. Worldwide prevalence of epilepsy is estimated to be around 0.5-1.5%.¹ In India an estimate shows that around 12 million people suffer from this disease, which accounts for one sixth of the epileptic population worldwide.²

On the basis of its nature epilepsy can be classified into Idiopathic (generalized) epilepsy and Focal (partial) epilepsy. About 66% of focal epileptic disorders are temporal in nature.³

Many of studies⁴⁻¹⁰ reported that prevalence of psychiatric morbidity is higher in epileptic patients than in general population or healthy control groups.

Prevalence of psychiatric disorders in epileptic patients vary from 19 to 80%.⁴⁻¹¹ This wide variation in prevalence of psychiatric disorders in epileptic patients might be a result of heterogeneity of research methods applied across studies and geographical regions where these studies were conducted. Most of

these studies were done in Western countries, so they might not perfectly reflect the situation of this problem in Asian populations.

Presence of these psychiatric disorders in epileptic patient is associated with poorer quality of life,¹² increased healthcare utilization,¹³ poorer seizure control and increased side effects associated with antiepileptic medication.^{14,15}

As there is paucity of studies representing Asian population specially in India and importance of these psychiatric disorders in epileptic patients, this study was conducted to assess the psychiatric co-morbidity and their severity in patients suffering from temporal lobe epilepsy.

II. METHODOLOGY

This hospital based descriptive observational study was conducted on patients of temporal lobe epilepsy attending at neurology department of Mahatma Gandhi Medical College, Jaipur (Rajasthan) India from January 2019 to December 2019.

Study proposal was approved with Institutional ethical committee. For the study purpose 18-60 years aged already diagnosed and on medication for more than one year were included in study. Patients not willing to give consent to participate in this study and/or who were having any history of pre-existing psychiatric illness before onset of epilepsy and/or having any other medical illness were excluded from the study. Informed consent was taken from eligible patients prior to enroll in the study. Such 50 cases were enrolled for the study.

All eligible patients were first interrogated by semi structured performa which is designed for capturing socio-demographic and clinical data of patients. Screening of co-morbid psychiatric illness was done by applying General Health Questionnaire-12 Hindi Version.¹⁶ Patients who scored more than 2 on this scale were further assessed by psychiatrist and diagnosis was made as per ICD-10 Classification for mental and behavioral disorders, clinical description and diagnostic guidelines. Severity of depression, anxiety and psychosis was assessed by applying Hamilton Depression rating scale, Hamilton anxiety rating scale and Brief Psychiatric rating scale respectively.

Data thus collected were compiled in Microsoft Excel worksheet 10. These data were classified to do analysis. Quantitative data were expressed in mean & standard deviation and qualitative data were expressed in percentage & proportion.

III. RESULTS

A total of 50 consecutive patients with temporal lobe epilepsy were enrolled in the study. Majority of the patients were males (58%) with M:F ratio 1.38. Mean age of participants was 34.66 ± 9.64 years and mean age at first seizure was 30.82 ± 9.22 years. By education majority of patients were illiterate (46%) and by occupation majority were laborer (36%). Majority (76%) were married and by earning family income of majority (36%) was <5000 INR per month. (Table 1)

Table 1
Socio-demographic characteristics of study population (N=50)

S. No.	Variables	Number	Percentage
1	Sex	Male	58
		Female	42
2	Residence	Rural	78
		Urban	22
3	Religion	Hindu	70
		Muslim	22
		Christian	8
4	Marital status	Married	76
		Unmarried	22
		Widow	2
5	Education	Illiterate	46
		Primary	12
		Secondary	22
		Senior Secondary	16
		Graduate	4
6	Occupation	Unemployed	14
		Labourer	36
		Farmer	18
		Housewife	12
		Student	10
		Service	10
7	Income per month	<5000 Rs	36
		5000-10000 Rs	34
		10001-20000 Rs	26
		20001-30000 Rs	4

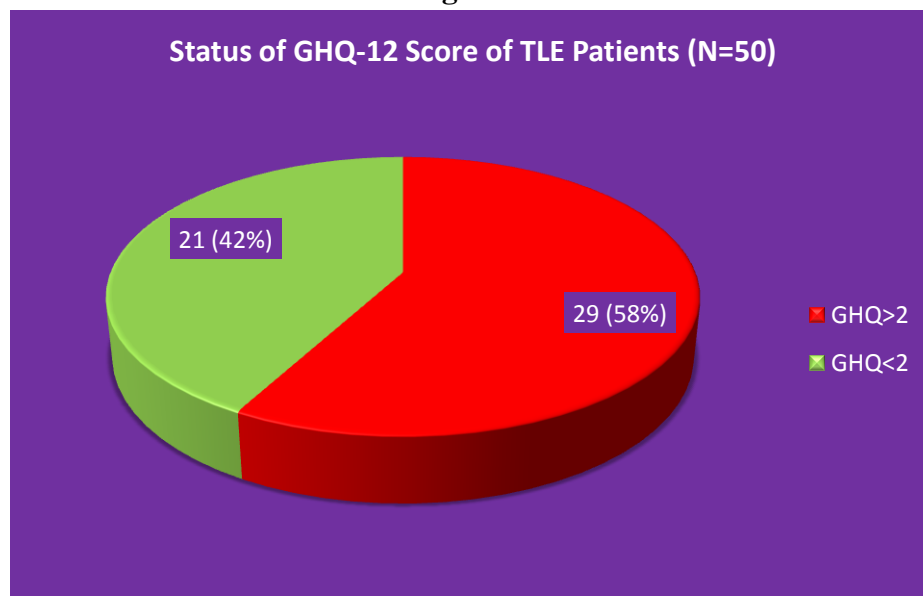
Among all TLE patients, 88% were having total duration of illness less than 6 years and 56% of patients were on two antiepileptic drugs.(Table 2)

Table 2
Epilepsy characteristics of study population (N=50)

S. No.	Variables	Number	Percentage
1	Duration of illness	<2 Years	22
		2-4 Years	44
		4-6 Years	22
		6-8 Years	8
		8-10 Years	2
		> 10 Years	2
2	Therapy	One Antiepileptic Drug	24
		Two Antiepileptic Drugs	56
		>2 Antiepileptic Drugs	20

On applying GHQ-12 Hindi version, out of total 50 TLE patients, 29 (58%) patients scored >2 thus representing 58% psychiatric co-morbidity in present study. (Figure 1).

Figure 1



These patients with psychiatric co-morbidity were interviewed further by psychiatrist and diagnosis was made as per ICD-10 Diagnostic criteria. Most common psychiatric morbidity was Depression (20%), followed by Generalized anxiety disorder (10%), Bipolar affective disorder (8%), Panic disorder (6%), Schizophrenia (6%), Acute Transient Psychotic disorder (4%) and OCD (4%). Among TLE patients who had psychiatric co morbidity, 34.5% had Depression, 17.2% had GAD, 13.8% had BPAD, 10.3% had Panic D/O, 10.3% had Schizophrenia, 6.9% had OCD and 6.9% had Acute transient psychotic disorder. (Table 3 & Figure 2)

Table 3

Psychiatric morbidity as per GHQ-12 more than two (N=29)

S. No.	Diagnosis	Number of Patients Diagnosed	Percentage
1	Depression	10	34.5
2	GAD	5	17.2
3	BPAD	4	13.8
4	Panic D/o	3	10.3
5	Schizophrenia	3	10.3
6	OCD	2	6.9
7	Acute transient psychotic disorder	2	6.9
	Total	29	100

While assessing severity of depression by Hamilton Depression rating scale, among 10 patients having depression, 60% had mild depression, 30 % had moderate depression and 10 % patient was suffering from severe depression. (Figure 3)

Figure 2
Psychiatric Morbidity as per ICD 10 Diagnostic criteria (N=50)

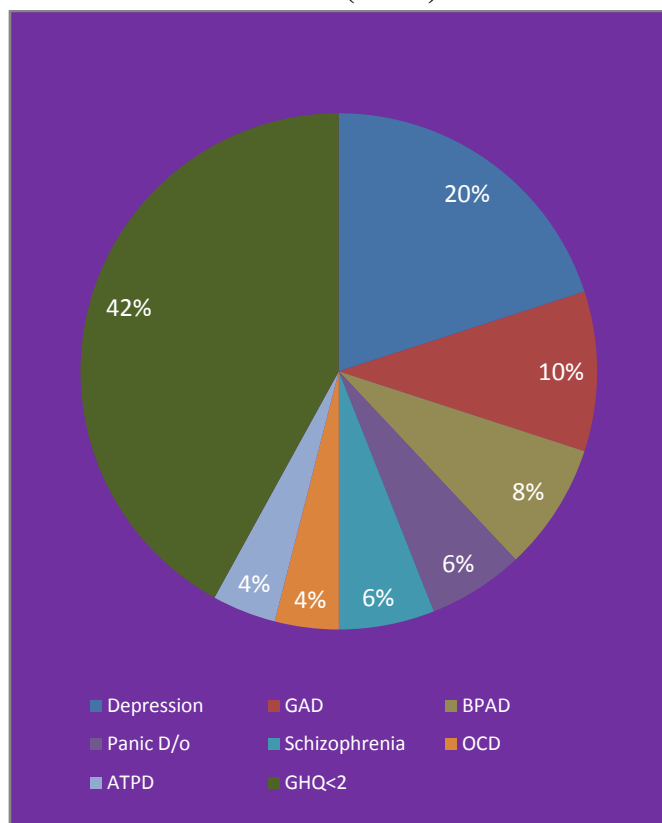


Figure 3
Severity of Depression as per HAM-D (N=10)

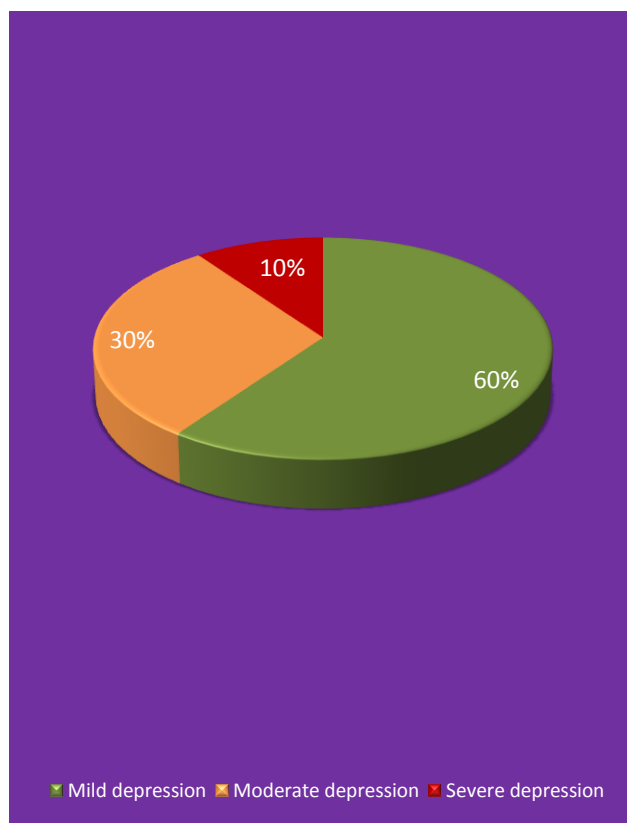


Figure 4
Severity of Depression as per HAM-A (N=8)

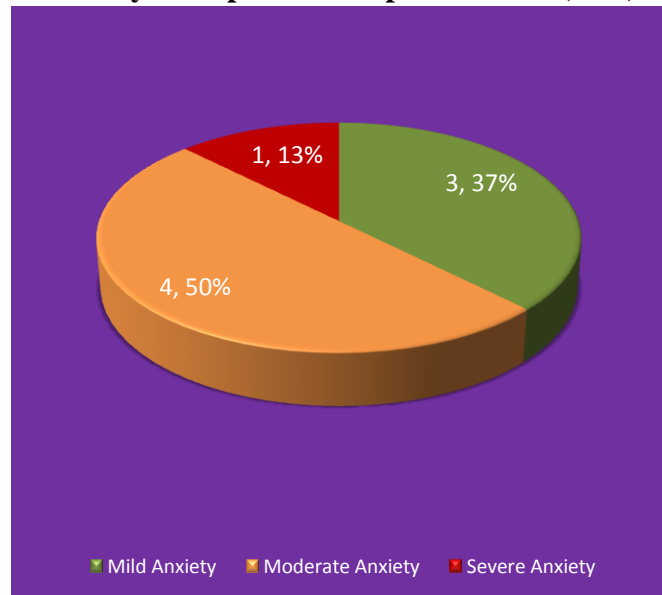
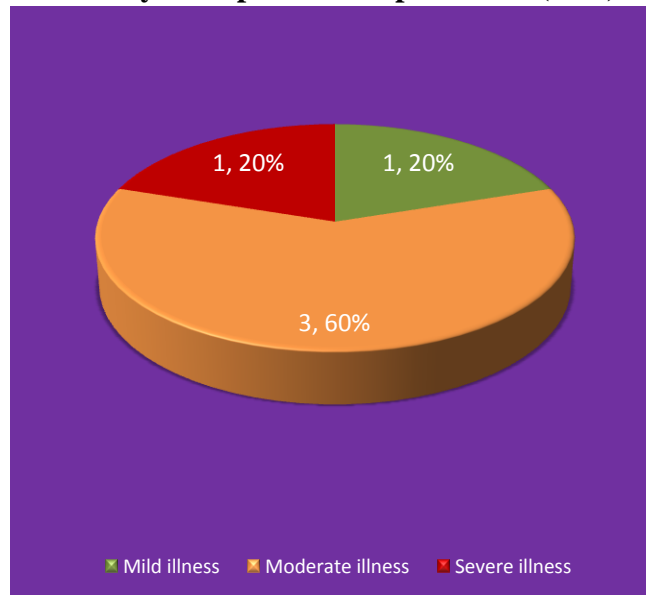


Figure 5
Severity of Depression as per BPRS (N=5)



Similarly while assessing severity of anxiety by Hamilton anxiety rating scale, among 5 patients of anxiety, 37 % patients had mild anxiety, 50 % patients had moderate anxiety and 13 % patients were suffering from severe anxiety disorder.(Figure 4)

On applying Brief psychiatric rating scale in psychotic patients, 20% had mild psychotic illness, 60% moderate and 20% were suffering from severe psychosis.(Figure 5)

IV. DISCUSSION

This present found 58% prevalence of psychiatric disorders among TLE patients who were with M:F ratio 1.38, mean age of participants was 34.66 ± 9.64 years and mean age at first seizure was 30.82 ± 9.22 years. Jose Augusto et al¹⁷ also conducted a study on 166 TLE patients whose Mean age was 43.9 (± 12.8) with mean age at first seizure of 18.7 (± 14.4) years and mean duration of epilepsy of 25.3 (± 14.0) years reported 63.9% psychiatric co-morbidities in TLE patients.

Oliveira et al¹⁸ and Dalmagro et al¹⁹ reported 70% and 40.4% respective prevalence of psychiatric comorbidity with temporal lobe epilepsy patients in their respective study on 73 and 490 patients. CL Dalmagro et al¹⁹ conducted a study on 490 patients with refractory focal epilepsy. Of these, 198 (40.4%) patients had psychiatric co-morbidity.

The prevalence of psychiatric disorders in epileptic patients was reported to vary from 19 to 80%.⁴⁻¹¹ This wide variation might be a result of heterogeneous research methods across studies, using different tools to identify psychiatric morbidity, socio-cultural diversities etc.

In present study, depression was the most common psychiatric disorder observed in 20 % of patients followed by Generalized anxiety disorder (10%), Bipolar affective disorder (8%), Panic disorder (6%), Schizophrenia (6%), Acute Transient Psychotic disorder (4%) and OCD (4%). patients and these findings are in resonance with the findings of previous studies which also reported high prevalence of depression in TLE patients.^{18,20} Oliveira et al¹⁸ who also used the HAM-A and HAM-D scales to identify psychiatric morbidity as in the present study, found depression, anxiety, OCD and psychiatric disorders in 27.4%, 42.5%, 11% and 5.5% respectively in their study. Jose Augusto et al¹⁷ reported mood disorder (depression) in 48.2%, anxiety in 30.7% and psychotic disorders in 8.4%.. Another study²¹ recently conducted on 170 TLE patients reported 17.1% depressive disorders highest among psychiatric morbidity, followed by psychotic disorders (8.2%), BPD (7.1%), anxiety disorders (5.3%) and obsessive-compulsive disorder (OCD) (2.9%). In a study¹⁸, 8% of TLE patients were suffering from bipolar disorder and results of present study was in resonance with this.

Anxiety and depressive disorders have been identified as prevalent and serious co-morbidities in people with epilepsy.²² There are many evidence suggesting that TLE and depression may share common pathogenic mechanisms²³ like in both TLE and depression smaller volumes of frontal lobes have been found.²⁴ High-resolution MRI studies have shown that hippocampal volumes in depression are decreased bilaterally or in the left hippocampus only. The reason behind higher rate of anxiety in temporal lobe epilepsy patients could be because all three of them share same biological and structural mechanism which is due to limbic system dysfunction.²⁵

This study has certain limitation like sample size was not calculated as per definite power and alpha error and it has no comparable group of general population to determine associating factors. Future researches are invited to take all these points in account.

V. CONCLUSION

In the present study, psychiatric co-morbidity observed in 58% of TLE patients. Patients presenting with Temporal lobe epilepsy should be routinely assessed for presence of psychiatric disorder to improve the treatment outcome.

CONFLICT OF INTEREST

None declared till now.

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