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Original Research Paper

Psychiatry

ASSESSMENT OF DEPRESSION IN PATIENTS WITH GENERALIZED TONIC-CLONIC SEIZURES

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ABSTRACT Depression is the most Common psychiatric comorbidity in epilepsy, It may mimic primary depressive disorders, but in a significant percentage of patients, Depression presents with atypical pleomorphic characteristics. Diagnosis cannot be established by the sole use of screening self-rating scales, but with additional, in-depth evaluation. Timely recognition and treatment of depression is of the essence in epilepsy management. Neurologist should be well trained to provide psychopharmacologic treatment for major depressive episodes, dysthymic disorders, and minor depression as they are the health care provider to initiate treatment. However, patients with suicidal ideation, psychotic symptoms, or bipolar disorders should be referred immediately to the care of a psychiatrist.

KEYWORDS : Generalised Tonic Clonic Seizures, Depression, Quality Of Life

INTRODUCTION

Epilepsy has been defined as a brain disorder characterised by predisposition to generate recurrent seizures and it is associated with negative neurobiological, cognition, social and also psychological consequences. Earlier studies on epileptic patients have addressed psychosis, cognitive decline, sexual dysfunction, dysthymia are common among them. Studies done previously on epileptic patients have addressed that depression are much more common among people with complex partial seizures. The current study has been planned to focus on the Generalized Tonic Clonic seizures-GTCS sub type which is much more common than other types of seizure.

SCOPE OF THIS STUDY:

Hence the study here is planned to assess depression in patients with GTCS and relating it with seizure related and socio demographic variables,and assessing the quality of life.

DEFINITION OF SEIZURE:

An abnormal paroxysmal electrical discharge which is due to the Hyperactivity of the cerebral neurons and thereby causing sudden alteration in neurologic function.

PRINCIPLES AND MECHANISMS OF SEIZURES:

The normal brain can develop seizures by electrical stimulation, excitatory drugs, metabolic alterations as well as changes in neurotransmitter substances. These changes are reflected in nearby environment in Brain which in turn causes an aggregate of neurons are hyperexcitable and as a result abnormal electrical discharges are formed. These abnormal electrical discharges are either within specific brain region which manifest as focal seizures or may be spreading to whole of the brain as in the case of generalized seizures.

GENERALIZED SEIZURES:

6 types of generalized seizures are present.

DEFINITION OF GTCS :

It is generalized behaviourally and electrographically from the onset of seizures. The features include a sequential motor events that evolves progressively from tonic muscular contraction to clonic jerky movements, always associated with loss of consciousness from seizures onset.

CLINICAL MANIFESTATIONS OF GTCS:

1. Premonitory signs and symptoms.
2. Immediate pretonic – clonic
3. Tonic-Clonic
4. Immediate postictal
5. Post ictal recovery

PSYCHIATRIC ASPECTS OF GTCS :

Psychiatric co-morbidity is frequently more common among people with epilepsy than the general population owing to three major factors, include the manifestations of the diseases and its implication in day to day life, abnormality in neuro transmitter function and the environment and the social stigma.

CLASSIFICATION OF PSYCHIATRIC DISORDERS IN RELATION TO TIME OF ONSET OF SEIZURES:

Preictal- Prodromal states characterised by Irritability, mood changes, fatigue.

Ictal –Aura, Automatism, Ictal depression, anxiety, Panic attacks.

Postictal- Psycosis , Delirum and depression

INTER ICTAL MANIFESTATION OF PSYCHIATRIC DISORDER MAY INCLUDE:

1. Affective disorder
2. Personality disorder
3. Schizophrenia like Psychosis
4. Behavioural disorder
5. Dementia
6. Suicide &Delibrateself harm
7. Dissociative seizures.

PROGNOSIS OF GTCS :

Elwes et al reported that the remission rate in GTCS is greatest among epilepsy compare to other seizure subtypes when it is being diagnosed before the age 10years.

EPIDEMIOLOGY OF DEPRESSION IN EPILEPSY:

The Prevalence of Psychiatric co-morbidity among Epileptic patients ranges from 29% to about 58%. In patients with good control of seizures with treatment the prevalence of depression ranges between 10-20%. The risk of depression increased to 60% prevalence in those with recurrent seizures.

TYPES OF DEPRESSION IN EPILEPSY:

1. Major Depressive disorder
2. Interictal dysphoric disorder
3. Dysthymia

EFFECT OF DEPRESSION IN EPILEPSY:

1. Poor drug adherance to treatment.
2. Lower productivity.
3. Lower productivity tend to result in disability and hence lower employment rate.
4. Social withdrawal.

5. Co-morbid depression worsen memory, cognition.
6. Depression perse worsen sleep architecture thereby further provocating seizures.
7. Increased suicidality rate.
8. Further worsening of seizure the risk being six fold.

RISK FACTORS FOR DEPRESSION IN PEOPLE WITH EPILEPSY

1. Symptomatic focal epilepsy.
2. Young age of onset of seizures.
3. Poor social support
4. Patients who are on poly drug therapy
5. Mesial temporal structural abnormality
6. Patients who had poor seizures control. (1 or more seizures in past 3-6 months)
7. Psychosocial burden of Epilepsy due to unemployment.
8. Restrictions in employment and driving / sports.
9. Unmarried / Living alone
10. Dependence on others due to injuries sustained previously and loss of job.

AIM:

To assess depression in patients with GTCS and its relation with seizure disorder.

Assessment is to be done in patients who are attending epileptic clinic in the Department of Neurology in Govt. Rajaji Hospital.

OBJECTIVES:

1. To assess depression in patients with GTCS and to study relationship with seizures.
2. To study the association between seizure frequency, duration of illness, age of onset of seizure and severity of depression.
3. To study the association of depression with socio demographic variables in patients with GTCS.
4. To assess the quality of life in epileptic patients suffering with depression.

INCLUSION CRITERIA:

1. Male & female patients attending epileptic clinic with a definitive diagnosis of GTCS based on Clinical findings,EEG and Neuroimaging.
2. Participants between 20 and 45 years of age.
3. Patients willing to provide informed consent for the interview and assessment.
4. Patients whose last duration of seizure was more than 7 days.

EXCLUSION CRITERIA:

1. Patients not willing to provide informed consent for the interview and assessment.
2. Patients already diagnosed to have psychiatric illness before the onset of seizures.
3. Patients with other chronic physical illness substance abuse or dependence/other neurological disorders.

DURATION OF STUDY: 6 months

MATERIALS AND METHODOLOGY

1. Patients who are on follow up in epilepsy clinic in Department of Neurology will be considered for study.
2. Sample size consists of 120 GTCS patients.
3. Selection will be done by Random sampling method.
4. Patients satisfying the inclusion and exclusion criteria will be chosen for undergoing study.
5. After getting informed consent, patients will be interviewed and details will be collected as per Proforma.
6. Thorough physical examination and clinical psychiatric evaluation done.
7. Based on symptomatology and examination patients are administered the following scales;

MINI international neuropsychiatric interview.
Hospital anxiety and depression scale
Hamilton depression rating scale
Quality of Life in epilepsy - 31 (QOLIE- 31)
Kuppuswamy's scale for socio economic status

8. After which depression are correlated with seizure related and socio-demographic variables

'T' test Results based on Sex

S. NO	Factors	Mean	SD	't' Value	'p' Value
1	**Age of onset of seizure**				
1.Male	64	26.03	9.749	2.855	.005 Sig
2. Female	56	21.00	9.525		
Total	120	23.68	9.930		

It has been found that the mean age of onset of seizure in males is 26.03 and in female it is 21.00 P = 0.005. Here the difference in statistically significant.

'T' Test results based on Positive Family History

S.NO.	Factors	Mean	SD	T Value	P Value
1	**HADS**				
1 Present	41	12.56	4.691		
2 Absent	79	9.72	5.260		
Total	120			2.907	0.004 sig
2	**HAM D**				
1 Present	41	12.78	6.609		
2 Absent	79	5.84	4.678		
Total	120			6.669	.000 Sig.
3	**QOLI - Over all Score**				
1 Present	41	46.4035	17.21041		
2 Absent	79	62.5934	12.83315		
Total	120			-5.814	.000 Sig.

In Patients who had a positive family history of psychiatric illness scores high mean value on HADS ,HAM D,QOL when compared to other who had a negative family history. P value is statistically significant. Hence patients with Positive family history had a high HADS score, more depression and poor quality of life.

'T' Test results based on Drug Therapy

S.NO.	Factors	Mean	SD	't' Value	'p' Value
1	**HADS**				
1 Mono	91	10.18	5.310	-1.936	.012 Sig
2 POLY	29	12.31	4.699		
2	**Ham D**				
1 Mono	91	6.81	5.627	-4.637	.000 Sig
2 Poly	29	12.59	6.473		
3	**QOLIE - Over all Score**				
1 Mono	91	60.5225	13.77578	4.418	.000 Sig
2 Poly	29	46.2027	19.06713		

From the above table the people who were on Poly drug therapy had higher mean scores on HADS and HAM-D and lower scores on QOL. Here P value is < 0.05 which is significant. Hence patients on poly drug therapy had more depression and poor QOL.

One way ANOVA RESULTS BASED ON seizure severity

S. NO.	Factors	Mean	SD	't' Value	'p' Value
1	**Hads**			6.239	.003 Sig
1 Mild	86	9.71	5.099		

2 Moderate	27	12.78	4.209		
3 Severe	7	14.71	6.726		
Total	120	10.69	5.230		
2	**Ham D**			12.999	.000 Sig
1 Mild	86	6.55	5.555		
2 Moderate	27	11.96	5.874		
3 Severe	7	14.14	7.862		
Total	120	8.21	6.322		
3	**QOLIE - Over all Score**			18.962	.000 Sig
1 Mild	86	62.1162	12.58025		
2 Moderate	27	45.8632	21.14804		
3 Severe	7	43.8749	17.96327		
Total	120	57.0619	16.33900		

From the above table it was found that people who had frequent seizures scored significantly on HADS, HAMD and QOL. Hence in patients who had frequent seizures the prevalence of depression is higher who also had a poor QOL.

One way ANOVA results based on Quality of Life

S.NO.	Factors	Mean	SD	't' Value	'p' Value
1	**QOLIE - Over all Score**			35.292	.000 Sig
0 No Disease	57	68.3039	4.58487		
1 Mild Depression	14	20.5549	10.92651		
2 Moderate Depression	20	22.1407	11.71298		
3severe Depression	7	18.7107	6.31228		
Total	120	57.0619	16.33900		

From the table it was found that people without illness had high scores on QOL. People with mild, moderate and severe depression had poor QOL. F ratio here is statistically significant at 0.05 level.

DISCUSSION

Out of the study group, majority of the participants (32.5%) were in the age group 26-30 years. 53.3% of the study group was male population and the remaining was females. Patients adhered to regular treatments were classified as good and irregular treatment within past 1month were classified as poor compliance.

In this study the prevalence of depression was 34.2%. According to literature evidences the prevalence of depression in epilepsy ranges between 10-55%. The previous studies supporting evidence for prevalence of depression within the range of our study are R. Jones et all 2012 (24-75%), Ekaterina V 2014 (40.63%) Rajesh J et al 2002 (34%), Adhikari A et all 2013(36.8%), Ettinger et al 2004 (36.5%), Koban et al 2006 (32.6%).

In this study regarding finding was when the severity of seizures is more there is higher prevalence of depression. It correlates well with previous studies that seizures freedom in past 6 months is associated with less depression and better QOL Andreas M. Kanner et al (2010), Kanneret all (2009), Vsiliosk et al (2007) Kiki Mohammed et al (2006). Drug compliance has no effect on depression.

Another new finding in this study is that patients on polydrug therapy reported poor QOL and the prevalence of depression is more in them.

With regard to socio demographic details, findings are males with higher literacy and higher socio economic status is associated with more depression and hence poor QOL. It was found that unemployed people have higher prevalence of depression. It well correlates with previous studies that unemployment in past 6 months has a significant association with depression supported by Saygin GD et al (2014) Williams J et al (2003), Alanis GI et al (2005), Hesdorffer D et al (2005),Heaney Dc et al (2012).

QOL is poor in patients with mild, moderate and severe depression. It correlates well with previous studies Andres M et al 2010,Perrine et al 1995, Boylan et 2004, Gilliam et al 2005. This study has found that when the seizure severity is more the QOL is poor. It supports earlier studies Dierdre et al 2010, Eva Tlusta et al 2009.

In this study the prevalence of depression is more in patients with higher literacy and high socio economic status. New finding in this study is QOL is poor in patients with longer duration of illness and with earlier age of onset of epilepsy.

CONCLUSION:

From the study, it was found that the prevalence of depression in epileptic patients is high. Seizure frequency and long duration of illness, early age of onset of Epilepsy have a significant positive correlation with depression. Depression is more common in patients with high literacy profile. Positive family history of psychiatric illness is associated with more prevalence of depression. Unemployment and low socioeconomic status positively associated with more depression. Depression beyond epilepsy by itself further worsens the QOL in epileptic patients. Over all QOL is poor in patients with co-morbid depression and who are unemployed and in lower socio economic status.

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