



QUALITY OF LIFE IN EPILEPSY PATIENTS RECEIVING ANTI-EPILEPTIC DRUGS IN A TERTIARY CARE TEACHING HOSPITAL, BHOPAL.

General Medicine

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ABSTRACT

Introduction: Quality of life (QOL) of epileptic patients is affected due to the effect of epilepsy on various aspects of their lives and the effects of the antiepileptic drug. Very few studies have been conducted on quality of life of epilepsy patients in India. Aim of present study is to determine health related quality of life in patients with epilepsy.

Material and method: The study was questionnaire based cross sectional study conducted in tertiary care teaching hospital, Bhopal. The Quality of Life in Epilepsy Inventory (QOLIE-31) scales is used to determine the quality of life in epilepsy patients. The statistical analysis was done by unpaired t-test or one-way analysis of variance was used to compare means of QOL scores between groups.

Results: Total, 100 patients of epilepsy were included in the study. The mean (standard deviation) total score of QOLIE-31 was 54.59. Comparison with other antiepileptic drugs carbamazepine, lamotrigene had shown significantly better in score of emotional wellbeing, cognitive function score.

Conclusion: In present study conclude that patients receiving monotherapy had a better QOL mainly because of the lesser side effects.

KEYWORDS

Quality of life (QOL), Epilepsy, Bhopal Population.

INTRODUCTION :

Epilepsy is group of CNS disorder characterized by paroxysmal cerebral dysrhythmia manifesting as brief episode of seizure with loss or disturbance of consciousness with or without characteristic body movements (convulsions), sensory or psychiatric phenomena¹. Idiopathic variety of epilepsy is most common type of epilepsy affecting 6 out of 10 people, the reason of idiopathic variety of epilepsy is not known. Epilepsy required immediate or long term treatment for prophylaxis.

Globally, each year around 2.4 million people are diagnosed with epilepsy. An estimated 80% of the people suffering from epilepsy are found in low and middle income countries². Epilepsy can be correlated with serious physical, mental³ and social consequences and it may affect the quality of life of person may be greater than in any chronic condition⁴. Delay in neurodevelopment, anxiety, comorbid depression and cognitive function are affected usually in epileptic patients⁵. Patients with epilepsy face many challenges like vocational, educational when they have to deal with society. Comorbid and psychosocial issues like this must be taken into account when treating and caring for epileptic patients. So that the treatment should not only be given to reduce the frequency of seizures, but should also aim at minimizing the side effects, taking into account the coexisting health and social problems faced by the patient and thereby improving the quality of life (QOL)⁶.

The important factor for better outcome in the treatment of epilepsy is health-related quality of life (HRQOL). Research assessing the QOL associated with successful treatment of epilepsy lags that of other chronic diseases like cancer, diabetes, and cardiovascular disease⁷.

Assessment of Quality of life is a useful outcome measure to know about epilepsy care from patient's perspective. So, study was conducted to estimate the quality of life of patients with epilepsy in a tertiary care hospital Bhopal.

MATERIAL AND METHODS:

The study was cross sectional, questionnaire based conducted in chirayu medical college and hospital, Bhopal. The protocol of this study was approved by the institutional ethics committee prior to reviewing the patient's medical records. Informed consents were taken from all the patients prior to the study.

Questionnaires were developed to collect sociodemographic data (age, sex, employment status, educational level) and clinical aspects of epilepsy (seizure frequency, duration of epilepsy, and medication).

Seizures frequency was defined as the number of seizures occurring in the last year prior to the interview.

The quality of life in epilepsy (QOLIE-31) was used for collecting data on health-related QOL with the permission of the Research and Development (RAND) Corporation. It consists of seven subscales, which are seizure worry, emotional well-being, energy/fatigue, cognitive functioning, medication effects, social functioning, overall QOL, and one item of overall health⁸.

The responses were used Likert rating scales, which were later transformed into linear scales that ranged between 0 and 100. A higher score indicates better QOL⁹.

STATISTICAL ANALYSIS

The results were expressed as mean±sd. The statistical significance was determined by unpaired t test or one-way analysis of variance (ANOVA) was used to compare means of QOL scores between groups. The correlation coefficient was used to measure the relationship between seizure frequency and subscale and overall score. $p < 0.05$ was considered to be statistically significant.

RESULTS :

Total, 100 patients were included in the study. The ratio of male to female is 47:53 of aged between 18 and 58 years (Table 1). The mean age respondent was 27.32. Comparison in marital status, there was significant increase in number in case with unmarried patients i.e. 61 (Table 1).

Table 1 Sociodemographic Profile of patients with epilepsy

Sociodemographic profile	N
Age	
18-28	20
29-38	23
39-48	22
49-58	16
> 58	19
Gender - (Male:Female)	47:53
Marital status- (Married:Unmarried)	39:61
Religion (Hindu:Muslim:Christian)	34:47:19
Qualification	21:22:19:
(Primary:Highschool:Graduate:Postgraduate:uneducated)	18:20
Occupation -	25:25:26:
(Employed:Business:Agriculture:Unemployed)	24

The range of seizures frequency in the past 1-year was 1-4 with a mean of 2.9, and mean duration of epilepsy was 5.8 years (Table 2).

Table 2 Demographic Parameter of patients with epilepsy

Demographic Parameter	Mean±SD
Duration of illness (years)	5.8 ± 1.24
Frequency of seizure/year	2.9 ± 0.83

The mean total score of QOLIE-31 was 54.59. Highest mean score of emotional well being and medication effect were 65.3 and 65.4 respectively. Lowest mean score was 33.7 in cognitive function subscale. Among them, seizure worry, quality of life, energy/fatigue, cognitive function and social isolation parameters showed statistically significant low QOL score in patients.

Table 3 Total score of QOLIE-31 sub scales in epilepsy patients

Subscales of Quality of life of epilepsy (QOLIE-31)							
Seizure worry	Quality of life	Emotional well being	Energy/Fatigue	Cognitive function	Medication effect	Social function	Total score
Mean ± SD	Mean ± SD	Mean ± SD	Mean ± SD	Mean ± SD	Mean ± SD	Mean ± SD	Mean ± SD
46.72±5.60	54.66±8.86	65.3±13.73	54.23±4.91	33.7±10.51	65.4±14.10	45.18±6.20	54.59±8.24

Patients receiving monotherapy had higher overall QOL scores compared to those received two or more antiseizure drugs or combination therapy. However the difference was statistically significant.

Table 4 Total QOLIE-31 score according to type of therapy

Type of therapy	Mean ± SD
Monotherapy	45.59±8.04
Combination therapy	33.82±4.94

The comparison between in score of seizure worry, there was statistical significant difference in score of seizure worry in levetiracetam and polytherapy. However difference between score of quality of life in phenytoin, other antiepileptics as well as polytherapy was statistically significant. In mean score of emotional well being, lowest score was seen with valproate i.e.55.68.

The highest mean score of energy/fatigue was 60.63 seen in patients receiving polytherapy. The difference was significant as compared to that of patient receiving phenytoin, valproate, levetiracetam. The lowest mean score of emotional wellbeing was 49.19, seen with carbamazepine, which was statistically significant compared to that patient receiving other antiepileptics as well as polytherapy. The highest mean score of medication effect was 66.1, seen with valproate.

However in case with social function, lowest mean score of social function was 52.78 seen with valproate. (Table 5)

Table 5 Quality of life(QUL) with different antiepileptic drugs

Subscale	Phenytoin	Valproate	Carbamazepine	Levetiracetam	Polytherapy
Seizure worry	56.52±6.65	55.39±8.22	54.81±11.67	54.52±7.93	57.62±7.39
Quality of life	59.96±6.91	54.55±4.13	55.52±4.72	52.62±4.18	51.77±5.61
Emotional well being	55.68±7.38	62.55±4.92	63.98±3.06	59.82±5.61	49.19±7.17
Energy/Fatigue	57.50±5.25	56.74±9.71	59.07±6.29	56.39±5.06	60.63±4.06
Cognitive function	61.04±5.46	63.46±5.76	58.04±6.71	52.39±5.80	57.54±4.74
Medication effect	60.94±7.25	66.1±7.09	64.5±7.87	61.2±5.98	57.64±4.22
Social function	50.12±4.53	52.78±7.60	55.94±4.23	56.87±5.024	61.10±5.91
Total Score	60.34±3.16	59.66±2.13	58.69±3.47	54.53±6.10	58.05±3.96

DISCUSSION

Epilepsy has a significant impact on QOL, with widespread and lifetime results¹⁰. In patients with seizure disorder, improving quality of life is a crucial elements in the management of such patient¹⁰.

Quality of life is the practical aspect to understanding the experience of people with epilepsy.

For assessing the quality of life as well as to identifying the factors associated with quality in each active epileptic patient, using QOLIE-31 questionnaire in present study. In our study total mean score was 54.59. The patients were found have least affecting cognitive function followed by social function and seizure worry.

In our study demonstrated that all the QOLIE-31 domains such as seizure worry, overall QOL, emotional well-being, energy/fatigue, cognitive functioning, medication effects, social functioning & distress had a significant association with the quality of life (P<0.001). The mean age of respondent in our study, was 27.32, which is almost similar to a study conducted in Maharashtra⁸ but higher than studies conducted in South India (34.89)¹¹.

In our study, the emotional well-being subscale as well as medication effect was highest, and cognition was the lowest. However, in present study seizure worry, social function, QOL, energy/fatigue subscale is almost similar to that of studies conducted in Australia¹². Variations in patterns may be because of different reasons as different countries have discrepancy in beliefs, cultures and socio-economic factors that may affect QOL measures, thus findings from other countries may not be relevant to local conditions⁸.

In present study sociodemographic characteristics such as education and employment status, there was no statistical difference was found. Studies have been found that unemployment is mostly associated to the state of seizure control, the age of onset and duration of illness, the type of medication, severity and frequency of seizures¹³.

Seizures frequency in the past 1-year was 1–4 with a mean of 2.9, and mean duration of epilepsy was 5.8 years. In general, the literature says that people with frequent seizures had remarkably poorer Health Related Quality of Life (HRQOL) than those with infrequent or no seizures¹⁴. Baker et al., reported that seizures frequency was the most important clinical predictor of psycho-social dysfunction and emotional maladjustment¹⁵.

Longer duration of epilepsy has been reported as a predictor for poor QOL due to greater complications and disabilities¹⁵. Szafarski et al. found poor quality of life with increase duration of illness¹⁶. In present study, patients receiving monotherapy had a better QOL as compared to patients on polytherapy as reported in findings of Thomas et al¹⁷. This may be due to the fact that patients undergoing polytherapy may have more serious and complex illnesses.

However, other studies have shown contradictory findings that there was no correlation between QOLIE-31 and the type of drug therapy¹⁸. In comparison between patients receiving monotherapy as well as polytherapy, cognitive function was least impaired in valproate. Forsythe et al. reported that in relation to the effects of other antiepileptic drugs on cognitive function, valproate has been suggested to be preferable to carbamazepine¹⁹.

Comparison with other antiepileptic drugs valproate, carbamazepine, had shown significantly better in score of emotional wellbeing, cognitive function score. In addition, scores for medication effect were better in valproate as well as carbamazepine group as compared to other antiepileptic drugs and polytherapy also. The reason behind it, better adverse effect profile of valproate and carbamazepine. Furthermore valproate was least likely to be associated with treatment failure for inadequate seizure control and is the preferred drug²⁰.

CONCLUSION :

In present study conclude that there are various factors which affecting QOL of people with epilepsy. In it, the type of drug therapy plays an important role. Patients receiving monotherapy had a better QOL mainly because of the lesser side effects. Counseling and resolving other health issues such as physical, mental, social and emotional aspects of health is likely to have a positive impact on the health of epilepsy patients.

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