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Original Research

Assessing The Prevalence Of Psychiatric Comorbidities In Child Subjects with Epilepsy And Its Effect On Their Quality Of Life

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Abstract

Background: Epilepsy is a common neurological concern and leads to a significant burden on the families of the affected subjects. Based on the previous existing literature data, it has been reported that in school-going children residing in Southern India, the mean annual incidence rate of epilepsy was reported to be 57.85 per 100,000 child subjects. CWE (children with epilepsy) suffer from various psychiatric comorbidities along with medical comorbidities.1It is vital to have awareness concerning comorbidities that can help in choosing the right ASM for a particular child.

Aim: The present study aimed to assess the prevalence of psychiatric comorbidities in child subjects with epilepsy and its effect on their quality of life (QoL).

Methods: The present study assessed all the CWE (children with epilepsy) that presented to the Institute within the defined study period and had normal IQ (intelligence quotient) that were assessed for were assessed for psychiatric comorbidities using RCADS (Revised Child Anxiety and Depression Scale) for depression and anxiety and SDQ (Strengths and Difficulties Questionnaire) for emotional behavioural concerns. To assess the quality of life, the QOLCE-31 (Quality of life in Children with Epilepsy) scale was used at participation and was repeated after needed intervention for comorbidities after 3 months.

Results: The study results showed that the clinical threshold for peer problems, conduct problems, separation anxiety, generalized anxiety, major depression, and social phobia was met in 13.34% (n=24), 28.89% (n=52), 35.56% (n=64), 38.9% (n=70), 20% (n=36), and 24.4% (n=44) child subjects, respectively. Following appropriate intervention for comorbidities, the quality of life of the study subjects improved.

Conclusion: The present study concludes that psychiatric comorbidities in child subjects with epilepsy are a common finding and these comorbidities can lead to poor quality of life in affected subjects.

Keywords: Anxiety, Conduct disorder, Depression, epilepsy, Quality of life

Introduction

Epilepsy is a common neurological concern and leads to a significant burden on the families of the affected subjects. Based on the previous existing literature data, it has been reported that in school-going children residing in Southern India, the mean annual incidence rate of epilepsy was reported to be 57.85 per 100,000 child subjects. CWE (children with epilepsy) suffer from various psychiatric comorbidities along with medical comorbidities.[1]

Existing literature data from the developed nations had reported that anxiety disorders affect nearly 5% to 18% of child subjects in the age range of 5 to 8 years and 0.3-12.9% and 0.6-7% pre-adolescents and adolescent subjects suffer from anxiety disorders. In children, subjects with epilepsy, anxiety, and depression are usually seen together. These psychiatric comorbidities can affect drug compliance and overall control of the seizure.[2]

Few of the ASM (anti-seizure medications) such as benzodiazepines and levetiracetam can worsen the underlying psychiatric comorbidities in affected subjects. Awareness concerning the comorbidities might help in choosing the right ASM for a particular child. Existing literature data is limited concerning the burden of psychiatric comorbidities in Indian

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subjects.[3] Hence, the present study aimed to assess the prevalence of psychiatric comorbidities in child subjects with epilepsy and its effect on their quality of life (QoL).

Materials and methods

The present prospective institution-based study aimed to assess the prevalence of psychiatric comorbidities in child subjects with epilepsy and their effect on their quality of life (QoL). The study was done atDepartment of Psychiatry of the Institute. Verbal and written informed consent were taken from all the subjects before participation.

The present study assessed children with epilepsy in the age range of 5-18 years with IQ (intelligence quotient) above 85 using MISIC (Malin's Intelligence Scale for Indian Children) were included in the study. The exclusion criteria for the study were subjects with autism spectrum disorder and associated cerebral palsy. Existing literature data has reported a prevalence of 25% for psychiatric comorbidities.

All subjects that fulfilled the study criteria were assessed with SDQ and RCADS where RCADS had depicted fair one-week test-retest reliability (0.65 – 0.80), good internal consistency ($\alpha = 0.71 – 0.85$), and good convergent and divergent validity.[4] RCADS has domains for anxiety and depression. For anxiety, there were subscales for generalized anxiety disorder, panic disorder, separation anxiety disorder,social phobia, and obsessive-compulsive disorder.RCADS comprised 47 items and scored on a four-point Likert scale with a grade of 0-3 from 0 means never and 3 means always. Total raw scores ranged from 0-141 depending on gender and grade level. Based on T scores, it is interpreted as <65 as normal, 65-69 as borderline, and >70 as clinically significant.

SDQ (Strengths and Difficulties Questionnaire) is a brief behavioural and emotional screening questionnaire for children and young subjects with satisfactory validity and reliability.[5] It can capture the perspective of young subjects and children, their teachers, and parents. SDQ includes emotional symptoms subscale, prosocial behaviour subscale, peer relationships problem subscale, and hyperactivity/inattention subscale. SDQ is interpreted as 'Average', 'Slightly raised', and 'High'. If the score is high, there is a risk of a clinically significant problem. QOLIE-31 is the scale consisting of 31 questions, divided into 7 aspects (including self-worrier for seizures, social function, emotional status, cognition, energy/vitality, health perceptions 0 and 1 comprehensive entry.[6,7]

These scales were applied by pediatric dentist experts in the field. Subjects that were positive for any of the SDQ or RCADS scales were sent to a child psychiatrist for further evaluation and intervention. This was followed by incorporating appropriate ASM in these children. These subjects were followed after 3 months and assessments were repeated.

The data gathered were analysedstatistically using SPSS (Statistical Package for the Social Sciences) software version 24.0 (IBM Corp., Armonk. NY, USA) for assessment of descriptive measures, Student t-test, ANOVA (analysis of variance), Mann-Whitney U test and Chi-square test. Pearson correlation coefficient was used to assess correlation in various parameters. The results were expressed as mean and standard deviation and frequency and percentages. The p-value of <0.05 was considered.

Results

The present prospective institution-based study aimed to assess the prevalence of psychiatric comorbidities in child subjects with epilepsy and its effect on their quality of life (QoL).The present study assessed 180 CWE (children with epilepsy) who presented to the Institute within the defined study period and had normal IQ (intelligence quotient) that were assessed for was assessed for psychiatric comorbidities using RCADS (Revised Child Anxiety and Depression Scale) for depression and anxiety and SDQ (Strengths and Difficulties Questionnaire) for emotional behavioural concerns. The mean age of the study subjects was 10.77±3.24 years. Focal onset and generalized onset epilepsy were seen in 77.8% (n=140) and 22.2%(n=400 study subjects respectively.

It was seen that in the present study, the meantime taken to evaluate a child subject using RCADS (Revised Child Anxiety and Depression Scale) for depression and anxiety and SDQ (Strengths and Difficulties Questionnaire) for emotional behavioural concerns was 20 minutes. On assessing the children using the RCADS scale, it was seen that the threshold for separation anxiety, generalized anxiety, and social phobia was met in 35.6% (n=64), 38.9% (n=70), and 24.4% (n=44) children respectively in the anxiety domain and clinical threshold for depression domain was met in 20% (n=36) study subjects respectively (Table 1).

The study results showed that, of the participants, no children had scores that were in the abnormal range for panic disorder or OCD (obsessive-compulsive disorder. Utilizing the SDQ (Strengths and Difficulties Questionnaire) scale, peer relationship problems and high conduct problems were seen in 28.9% (n=52) and 13.3% (n=24) children with epilepsy respectively.

It was seen that there was a significant correlation between social phobia and children with focal onset epilepsy with no generalized onset epilepsy against 14.3% of subjects with focal epilepsy which was statistically significant with p=0.01. Also, a significant improvement in mean QOL (quality of life) scores at the time of participation and 3 months follow-up assessment with p<0.001. The mean difference in QOLIE scores was 6.65 with a 95% CI (confidence interval) of 5.05, 8.25.

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S. No	Categorization for clinical threshold	Number (n)	Percentage (%)
1.	**Peer problem**		
a)	High	12	6.67
b)	Very high	12	6.67
2.	**Conduct problem**		
a)	High	34	18.89
b)	Very high	18	10
3.	**Separation anxiety**		
a)	Borderline clinical threshold	36	20
b)	Above clinical threshold	28	15.56
4.	**Generalized anxiety**		
a)	Borderline clinical threshold	28	15.56
b)	Above clinical threshold	42	23.33
5.	**Major depression**		
a)	Borderline clinical threshold	32	17.78
b)	Above clinical threshold	4	2.22
6.	**Social phobia**		
a)	Borderline clinical threshold	24	13.33
b)	Above clinical threshold	20	11.11

Table 1: Psychiatric comorbidities in children with epilepsy using SDQ and RCADS scales

Discussion

The present study assessed 180 CWE (children with epilepsy) who presented to the Institute within the defined study period and had normal IQ (intelligence quotient) that were assessed for was assessed for psychiatric comorbidities using RCADS (Revised Child Anxiety and Depression Scale) for depression and anxiety and SDQ (Strengths and Difficulties Questionnaire) for emotional behavioural concerns. The mean age of the study subjects was 10.77±3.24 years. Focal onset and generalized onset epilepsy were seen in 77.8% (n=140) and 22.2% (n=400 study subjects respectively. These data were comparable to the previous studies of Brodie MJ et al[8] in 2016 and Plevin D et al[9] in 2019 where authors assessed child subjects with epilepsy and demographic data comparable to the present study in their respective studies.

The study results showed that in the present study, the mean time taken to evaluate a child subject using RCADS (Revised Child Anxiety and Depression Scale) for depression and anxiety and SDQ (Strengths and Difficulties Questionnaire) for emotional behavioural concerns was 20 minutes. On assessing the children using the RCADS scale, it was seen that the threshold for separation anxiety, generalized anxiety, and social phobia was met in 35.6% (n=64), 38.9% (n=70), and 24.4% (n=44) children respectively in the anxiety domain and clinical threshold for depression domain was met in 20% (n=36) study subjects respectively. These results were consistent with the studies ofRozensztrauch A et al[10] in 2022 and Davies S et al[11] in 2003 where results for RCADS and SDQ reported by authors were comparable to the results of the present study.

It was seen that, in the participants, no children had scores that were in the abnormal range for panic disorder or OCD (obsessive-compulsive disorder. Utilizing the SDQ (Strengths and Difficulties Questionnaire) scale, peer relationship problems and high conduct problems were seen in 28.9% (n=52) and 13.3% (n=24) children with epilepsy respectively. These findings were in agreement with the findings ofFreilingerM et al[12] in 2006 and Dharmadhikari AS et al[13] in 2017 where authors also reported similar SDQ findings in their respective studies.

The study results also showed that there was a significant correlation between social phobia and children with focal onset epilepsy with no generalized onset epilepsy against 14.3% of subjects with focal epilepsy which was statistically significant with p=0.01. Also, a significant improvement in mean QOL (quality of life) scores at the time of participation and 3 months follow-up assessment with p<0.001. The mean difference in QOLIE scores was 6.65 with a 95% CI (confidence interval) of 5.05, 8.25. These results were in line with the studies ofReilly C et al in 2018 and Choudhary A. et al in 2014 where a significant correlation between social phobia and children with focal onset epilepsy with no generalized onset epilepsy was also reported by the authors in their studies as in the present study.

Conclusions

Within its limitations, the present study concludes that psychiatric comorbidities in child subjects with epilepsy are a common finding and these comorbidities can lead to poor quality of life in affected subjects. However, the study assessed a smaller sample of children with epilepsy and assessed them for a shorter duration. Hence, future longitudinal studies with larger sample sizes and longer monitoring are needed to reach a definitive conclusion.

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