

Results: Our study population comprising 45 females and 15 males had mean age (\pm SD) of 23.55 years (\pm 5.55 years). Two-thirds of patients had mild to very severe depression. Majority (44 patients) of the patients had mild anxiety and poor quality of sleep. QOLIE-31 score was higher among males, those with education level above 12th standard and belonging to middle and upper socioeconomic groups. Patients with myoclonic seizures alone had better quality of life compared with patients with GTCs-absence semiology ($p < 0.05$). QoL negatively correlated with severity of depressive and anxiety symptomatology and quality of sleep. Statistically significant correlation between duration of medication and per capita income with severity of depressive and anxiety symptoms was observed. Multivariate analysis did not show any significant correlation of demographic and clinical factors with QoL.

Conclusion: Clinicodemographic factors intricately affect quality of life in patients with JME. Poor socioeconomic class and presence of comorbid depression, anxiety, and poor sleep quality are associated with poorer quality of life among patients with JME.

A0035: The Study of Cognitive Functions and Neuropsychiatric Comorbidities among Intractable Epilepsy Patients in a Tertiary Care Hospital

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Introduction: People suffering with epilepsy often present with cognitive dysfunction, neuropsychiatric comorbidities, such as cognitive impairment, depression, anxiety, and other behavioral problems. These illnesses may aggravate the epileptic manifestations in intractable epilepsy patients. The cognitive dysfunction and psychiatric comorbidities may be due to the intractable seizure itself, structural damage to the brain, and antiepileptic drugs. There is lack of studies in Indian context regarding the cognitive functions and neuropsychiatric comorbidities in intractable epilepsy patients.

Aim: To study the cognitive functions (IQ, MQ, visuoperceptual functions) and neuropsychiatric comorbidities (anxiety and depression) in intractable epilepsy patients.

Methods: Around 600 patients who fulfilled the criteria of drug-resistant epilepsy (ILAE, 2010) were included in the study. Only 506 patients underwent detailed history and neurological examination, radiological investigations, neuropsychological evaluation, educational, occupational status assessment, and quality of life assessment. Neuropsychological evaluations (intelligent quotient [IQ], the mental quotient [MQ], Bender-Gestalt test [BGT], anxiety and depression scales) were performed within 2 to 3 months after the radiological investigation.

Results: Out of 506 patients with intractable epilepsy, 147 patients (29.05%) had mental retardation (< 69) score in Wechsler intelligence scale. 20% ($n = 104$) of them had dull normal intelligence. Two hundred and fifty-five patients (50%) of them had average intelligence. Wechsler's memory quotient scores were low (< 70) in 194 patients (38.34%)

and showed memory dysfunction. BGT revealed abnormal visuoperceptual gestalt functions in 218 patients (43.08%). Multiphasic personality questionnaire to assess anxiety and depression could not be administered in 147 patients who had mental retardation. Multiphasic personality questionnaire administered to patients without mental retardation showed anxiety in 161 patients (31.82%), depression in 142 patients (28.06%), and mixed anxiety and depression in 126 patients (24.90%). Pearson's Chi-square test did not reveal any significant difference between the IQ, MQ, BGT, anxiety, depression and quality of life scores between the generalized and partial seizures. Abnormal IQ scores (below average), MQ scores, BGT Results were strongly associated ($p < 0.01$) with MTS. Significant proportion of patients with intractable epilepsy who had no structural abnormalities had normal IQ scores, MQ scores, and BGT Results. A significant proportion of patients with MTS had anxiety and depression. Also, a significant proportion of patients without any structural abnormalities did not show any signs of anxiety or depression. Another significant proportion of patients with MTS had combined symptoms of anxiety and depression ($p < 0.05$).

Conclusion: The present study highlights that patients with intractable epilepsy are often associated with neuropsychological manifestations, such as cognitive impairment (mental retardation: 29.05%, memory impairment: 38.34%, abnormal visuoperceptual gestalt functions: 43.08%), anxiety (31.82%), depression (28.06%), and mixed anxiety-depression (24.90%). Hence, diagnosing these conditions is very important among the intractable epilepsy patient and treating them effectively with drugs as well as counseling.

A0036: Effect of T-Type of Calcium Channel Blockers on Behavioral, Biochemical, Immunohistochemical, Oxidative, and Histopathological Parameters in Chemically Induced Seizure Tests in Wistar Albino Rats Saniya K.,¹ Patil B.G.,¹ Madhavrao C.,² Prakash K.G.,¹ Mythili Bai K.³

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Objective: To study the effect of t-type of calcium channel blockers on behavioral, biochemical, immunohistochemical, oxidative, and histopathological parameters in chemically induced seizure tests in Wistar albino rats.

Methods: The study proposal was approved by the Institutional Review Board (IRB) and all study procedures were performed in accordance with the CPCSEA guidelines. The study was done on the healthy, adult Wistar albino rats of either sex as per the standard protocol described in the literature. This study consisted of four groups, each with six animals. The study groups were group I (vehicle control), group II (negative control), group III (positive control), and group IV (experimental drug [t-type of calcium channel blocker: Flunarizine]). Statistical software, GraphPad InStat 3.0 version

was used to confirm the statistically significant difference among groups at p -value of less than 0.05.

Results: It was clearly evident from the obtained data that, experimental test drug and standard drug, both had significant increase in onset ($p < 0.01$), decline in duration ($p < 0.05$), score ($p < 0.01$), and number of seizures in 1 hour time ($p < 0.05$) in pentylenetetrazole-induced seizure model tests. The various parameters including biochemical, immunohistochemical, histopathological, and oxidative stress (SOD, catalase, GPx, and lipid peroxidation) were found in favor of decreasing the neuronal excitability and protecting the neurons with the experimental test drug in group IV with statistical significance ($p < 0.01$) when compared with the control group. The above findings in group IV were consistent and comparable to the standard drug in group III ($p > 0.05$).

Conclusion: The t-type of calcium channel blocker had significant ameliorative effect on behavioral, biochemical, immunohistochemical, oxidative, and histopathological parameters in chemically induced seizure tests in Wistar albino rats.

A0037: Preclinical Screening of Antiepileptic Properties of Diltiazem in Chemically and Electrically Induced Battery of Seizures Tests in Laboratory Experimental Animal Models
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Objective: To screen the antiepileptic properties of diltiazem in chemically and electrically induced battery of seizures tests in laboratory experimental animal models.

Methods: In this study, Wistar albino rats were used as experimental animal models. The proposal was approved by the official bodies including Institutional Research Committee (IRC) and Institutional Animal Ethics Committee (IAEC). Experimental techniques were performed adhering to the CPCSEA guidelines. This study had a total of six groups, each group had six animals and the groups were group I: control for PTZ, group II: standard for PTZ (sodium valproate), group III: diltiazem for PTZ, group IV: control for MES, group V: standard for MES (diphenylhydantoin), and group VI: diltiazem for MES. Various statistical tests including one-way ANOVA followed by Bonferroni's post hoc test and Kruskal-Wallis test followed by Dunn's post hoc test were applied, wherever applicable to find the statistically significance levels.

Results: It was seen that, the experimental test drug (diltiazem) was able to increase the onset of seizures when compared with the control group (group I) with $p < 0.001$. Similarly, the standard drug in group II also had similar Results. Other parameters like duration of seizures, number of seizures in 1 hour and score of seizures were significantly

reduced in both the experimental test and standard drugs (groups II and III) when compared with the control group ($p < 0.05$). The obtained above Results in group II were comparable to group III. In electrically induced MES model, as expected in group V, none of the animals exhibited Tonic Hind Limb Extension (THLE). In diltiazem experimental test drug group, more than 80% of animals were protected against the THLE. Again in this model, there was a significant reduction in scores of seizures in both the groups (V and VI) when compared with their parent control group ($p < 0.01$).

Conclusion: Diltiazem exhibited significant antiepileptic properties in chemically and electrically induced battery of seizures tests in laboratory experimental animal models.

A0038: Predicting Verbal Memory Outcomes after Anterior Temporal Lobectomy

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There is considerable concern regarding verbal memory decline (estimated rate of 44% measured by test scores), after dominant temporal lobe surgery (Sherman et al, 2011). It is important to delineate factors that predict postsurgical memory decline as epilepsy surgery is an elective procedure, and patients need to understand relative risks and benefits of the procedure.

Aim: To study the factors predicting postoperative verbal memory outcome.

Method Retrospective data analysis of 233 adult patients who underwent anterior temporal lobectomy (115 left, 118 right) and had a 1-year postsurgical follow-up evaluation. Multiple regression analysis was performed with the dependent variable being postsurgery verbal memory test score, and multiple independent variables being demographic, seizures, surgery side, mood issues, subjective memory complaints, intelligence quotient (IQ), and preoperative verbal memory test scores. Reliable Change Index scores were used to identify patients who experienced a significant decline in verbal memory functioning.

Results: Eleven percent ($n = 26$) patients demonstrated a significant postoperative decline in verbal memory as per RCI score calculations. Fifty-six percent ($R^2 = 0.56$, $p < 0.001$) of the variance in the data was explained by the predictor variables; with side of resection ($p < 0.001$), preoperative memory scores ($p < 0.001$), and preoperative IQ ($p < 0.01$) as the most significant factors.

Conclusion: Preoperative verbal memory score, IQ, and the side of surgery appear to be risk factors for developing a verbal memory decline postsurgery. Evaluating patients on standardized neuropsychological tests pre-surgery is critical to identify patients at risk and to guide the preoperative counseling and plan the postoperative memory rehabilitation.