ORIGINAL RESEARCH PAPER
Volume - 10 | Issue - 03 | March - 2021 | PRINT ISSN No. 2277 - 8179 | DOI : 10.36106/ijsr
INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

CLINICAL PROFILE AND EVALUATION OF NEW ONSET SEIZURE IN ADULTS AT TERTIARY CARE HOSPITAL, RIMS, RANCHI, JHARKHAND.

General Medicine

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ABSTRACT

Background: Seizure, an important CNS presentation is associated with different causes, which may vary in different regions. Jharkhand lacks studies of seizure and the prevalent causes present in this region. Therefore, the present study was conducted to study the clinical profile of new onset seizure in a tertiary care center of Jharkhand, India. It was also intended to study if these causes showed any variation from other studies done in different regions of India.

Materials and Methods: The present study was conducted in a tertiary care institute situated in Jharkhand, state of India over a period of 1 year from July 2019 to July 2020.Our study included 100 patients of new onset seizure and the age group of the patients was 18 year and above. Of these 55 were males and 45 were females. The mean age of the patients was 40.11 years with 77% of the patients were in the below 50 yrs.

Results: Analysis of the information observed in our study has shown the etiological distribution of seizure to be alcohol withdrawal ,the leading cause of seizures which account for 34% followed by idiopathic seizures (29%), neuro infection (16%), CVA 12% and metabolic (9%).

- Among neuro infection tuberculoma accounted for 37% followed by neurocysticrcosis 25%, meningitis13%, meningoencephalitis 19% and cerebral malaria 6%.
- Among CVA infarct accounted for 42% followed by haemorrhage 25%,SAH 17%, SDH 8% and CVT 8%.
- Among metabolic causes hypoglycemia accounted for 56% followed by hyponatraemia 22%, hyperglycemia 11% and hypocalcemia 11%.
- GTCS was the most common seizure 70%.Most common cause of GTCS was alcohol withdrawal 40% followed by idiopathic 30%, CVA 13%, neuro infection11%, metabolic 6%.

Conclusion: The study concludes that:

1. Majority of seizures occurred in patients <50 yrs of age.
2. Etiological spectrum were varied and included alcohol withdrawal, neuro infection, CVA, metabolic.
3. Alcohol withdrawal accounted for significant number of seizures in all the age groups.
4. Tuberculoma is most common cause of seizures in neuroinfection.
5. Infarct is most common cause of seizures in CVA patients.
6. Hypoglycemia is an important cause of seizures in metabolic seizures.

The clinicians, especially the physicians practicing the primary care and neurologist, should be aware of the different causes of seizure present in this region of India; therefore, delay in diagnosis can be prevented along with unnecessary investigations.

KEYWORDS

Alcohol withdrawal, Hypoglycemia, Tuberculoma, seizure.

A *seizure* (from the Latin *sacire*, "to take possession of ") is a paroxysmal event due to abnormal excessive or synchronous neuronal activity in the brain.

Knowledge of the common differential diagnoses of any clinical finding is helpful for the treating physician in its work-up. Seizure is no exception, with proper history and clinical examination, analysis of etiology is made with available investigations, the epilepsy can be treated accordingly thus reducing the morbidity and mortality associated with it. However, the causes of seizure show a wide variation throughout the world, and there is a need for local knowledge of the causes of this condition. Incidence rate varies from 38 to 49.3 per 1,00,000 population per year from two community based studies in India.[1]

The worldwide prevalence of active seizure is between 4-10 per 1000 population[9]. The prevalence rate in India is 5.59 per 1000.There is no statistically different rates between women and men or urban and rural residence[10].

The studies of seizure from Jharkhand, India, are limited. In addition to clinical importance, the studies from this region may also vary from the rest of India due to geographical variation and, thus, may have epidemiological importance. It is also essential that physicians practicing primary care in this region should be aware of the common prevalent causes of seizure and their necessary work-up.

Hence, the present study was conducted to study the clinical profile of seizure in a tertiary care center in Jharkhand state of India. It was also intended to study if these causes showed any variation from other studies done in different regions of India.

MATERIALS AND METHODS

From July 2019 to July 2020, the present descriptive study was conducted after institutional ethical approval in a tertiary care institute situated in Jharkhand state of India. The study was conducted over a period of 1 year from July 2019 to July 2020 including all the cases of seizure diagnosed after detailed clinical history, HIV – ELISA,CSF ANALYSIS, EEG, CT- brain, MRI- brain and relevant biochemical tests. Our study included both sexes, age of 18yrs and above, excluding the patients below 18years.

RESULTS

A total no of 100 patients were found to possess seizure between July 2019 and july 2020. Alcohol withdrawal seizures are more common in 21-30 years, whereas CVA and metabolic seizures are common in older people.

- In 18-20 yrs 69%is due to idiopathic, 31%is due to neuro infection.
- In 21-30 yrs most common etiology is 42%alcohol withdrawal followed by 35% idiopathic and 23% neuro-infection.
- In 31-40 yrs most common etiology is alcohol withdrawal 36% followed by idiopathic 31%, neuro-infection 14%, CVA9%, metabolic 9%
- In 41-50 yrs most common etiology is alcohol withdrawal 47% followed by CVA 29%, idiopathic 12% and metabolic 12%
- In50-60yrs most common etiology is alcohol withdrawal 36% and

CVA 36% followed by metabolic 19%, idiopathic%, neuro-infection 7%

- In age >60 yrs most common etiology is neuro-infection and metabolic seizures 29% followed by 28% alcohol withdrawal and14% idiopathic.

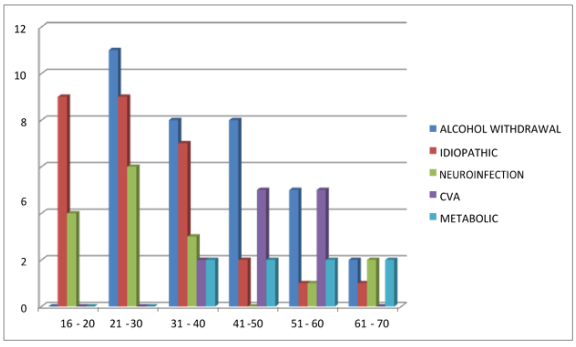

Figure 1 Common Cause Of Seizure In Our Study In Different Age Groups

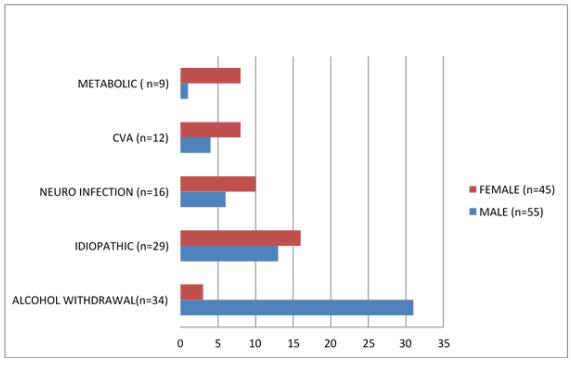

Figure 2. Sex Wise Distribution Of Various Etiologies Of Seizure

DISCUSSION

In India studies on seizure are lacking. This data, if available, would help clinicians in planning the diagnostic approach in patients with seizure and will also help in starting early treatment. With the help of detailed clinical history, physical examination, and brain imaging and othr relevant investigations, seizure can be diagnosed and the causes can be ascertained. The prognosis for seizure control is good and over 70% will enter remission. There is an increased risk of premature death particularly in patients with chronic epilepsy[11]. Ethanol is a central nervous system depressant that produces euphoria and behavioral excitation at low blood concentrations and acute intoxication (drowsiness, ataxia, slurred speech, stupor, and coma) at higher concentrations. The short-term effects of alcohol result from its actions on ligand-gated and voltage-gated ion channels [2–4]Prolonged alcohol consumption leads to the development of tolerance and physical dependence, which may result from compensatory functional changes in the same ion channels. Abrupt cessation of prolonged alcohol consumption unmasks these changes, leading to the alcohol withdrawal syndrome, which includes blackouts, tremors, muscular rigidity, delirium tremens, and seizures [5,6] . Alcohol withdrawal seizures typically occur 6 to 48 hours after discontinuation of alcohol consumption and are usually generalized tonic–clonic seizures, although partial seizures also occur [7,8].

Most frequent causes of seizures in adulthood, particularly in the old age is stroke. Incidence of seizures after stroke varies from 4.1% to 12.5%[12]. Post stroke epilepsy incidence in India is13%[13]. The incidence of epilepsy prior to stroke was 4.5% when compared to 0.6% in the matched control group[14]. The distinction between tuberculoma and single cysticercus granuloma is important because single cysticercus granuloma is a benign and self limiting condition, but tuberculoma is an active infection which requires prolonged therapy with potentially toxic drugs.[15] It was very difficult to differentiate between tuberculoma and NCC based on CT findings. We did chest Xray PA view and TB ELISA for patients suspected of tuberculoma [16].

CONCLUSION

The study concludes that Alcohol withdrawal (34%)accounted for significant number of seizures in all the age groups followed by idiopathic seizures (29%), neuro infection (16%), CVA 12% and metabolic (9%).The clinicians, especially the physicians practicing the primary care and the neurologist, should be aware of the different causes and clinical features of seizure present in this regions of India. This knowledge will not only prevent delay in diagnosis but also unnecessary laboratory investigations which may harm both the health and pocket of the patient.

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