

**Original Article**

Cerebrovascular Accidents as a Cause of New Onset Seizure and Its Correlation with Age of Onset

Authors

**Dr Shishir Pandey¹, Dr Manoj Kumar Kushwaha², Dr M.H.Usmani³, Dr Rakesh Patel⁴
Dr. Manoj Indurkar⁵**

Department of Medicine, Shyam Shah Medical College Rewa (M. P.), India

Corresponding Author

Dr Shishir Pandey

Department of Medicine, Shyam Shah Medical College Rewa (M. P.), India

Email: shishir.pandey2001@gmail.com, Cell: 7354708185

ABSTRACT

INTRODUCTION: *Seizure has been a recognized entity since antiquity and is probably as old as man himself. Seizures are common disorders found all over the world and are encountered frequently during medical practice in variety of settings.*

Etiological spectrum of acute symptomatic seizures in developing countries is different from developed countries. The major etiological risk factors were central nervous system (CNS) infections (32%), metabolic disorders (32%) and cerebrovascular diseases (21%).¹

AIMS AND OBJECTIVES: (1) *To identify cerebrovascular accidents as a cause of new onset seizure.*

(2) *To find out its correlation with age of onset.*

MATERIALS AND METHODS: *100 patients admitted with new onset seizures from the hospital attached to S. S. Medical College, REWA and study conducted from July 2014 to October 2015. Seizure history was taken from eyewitness and patient and clinical examination and routine investigation done, with special investigation like CT, MRI, EEG in selected cases. Result was analysed statically and mean and standard deviation was calculated.*

RESULT: *Cerebrovascular accidents accounted for 26% of seizures. Among these Ischemic stroke (46.15%) was the commonest cause of seizures followed by Hemorrhagic stroke (23.07%), Cerebral venous thrombosis (23.07%) and least common was Subdural haemorrhage (7.69%). Ischemic stroke was most common in middle adulthood (66%), haemorrhagic stroke was most common in old age (66%), CVT in young adult, subdural hematoma in old age.*

CONCLUSION: *Cerebrovascular accident was the one of the major cause of new onset seizure and it mainly present in elderly population.*

KEYWORDS: *Cerebrovascular accidents, seizure, ischemic stroke*

INTRODUCTION

About 65 million people worldwide have epilepsy and nearly 80 per cent of the person with epilepsy (PWE) live in developing countries, where annual new cases occur between 40 to 70 per 100,000 people in the general population. The estimated proportion of the general population with active

epilepsy at a given time is between 4 to 10 per 1000 people. However, some of the studies from developing countries suggest that the proportion is between 6 to 10 per 1000². It is estimated that there are more than 10 million PWE in India.

Etiology of seizures can be easily made out in most of the older patients. The causes include

subdural haematoma, stroke, CNS infections, degenerative disorders like Alzheimer’s disease and malignancy which includes malignant gliomas, and brain metastases.³ In the prospective study patients with an intracerebral hemorrhage were found to have a higher incidence of seizures (10.6%) than those with an ischemic stroke (8.6%), while in those with a subarachnoid bleeding the incidence was similar to that in patients with a brain infarction. A low incidence of 2.5% of seizures was observed in patients with lacunar strokes. Due to the fact that ischemic strokes are far more frequent than hemorrhagic ones, the majority of stroke-related epileptic insults are due to cerebral infarction.⁴

MATERIALS AND METHODS

100 patients admitted with new onset seizures from the hospital attached to S. S. Medical College, REWA. Study began on July 2014 and ended on October 2015. Patients presenting with history of new onset seizures were included in the study. Patient and eyewitness were interviewed regarding history, and clinical examination was done as mentioned in proforma.

The investigations included haemoglobin level, total count, differential count, ESR, urine routine, blood urea, serum creatinine, blood glucose levels, liver function test and estimation of serum electrolytes like sodium and potassium. Special investigations like lumbar puncture, serological tests, CT scan or MRI brain, EEG were done in selected cases. The collected data

was analysed using the computer programme Statistical Package for Social Sciences (SPSS 11.0) and Systat 8.0. Microsoft word and Excel have been used to generate tables etc.

Descriptive analysis was used to compute percentage, to calculate Mean and Standard deviation

OBSERVATION

Table :1 Types of CVA in patients with seizures

CVA	Number [n=26] and %
Ischemic stroke	12 (46.15%)
Hemorrhagic stroke	6 (23.07%)
Cerebral venous thrombosis	6 (23.07%)
Subdural haemorrhage	2(7.69 %)
TOTAL	26

Cerebrovascular accidents accounted for 26% of seizures. Among these Ischemic stroke (46.15%) was the commonest cause of seizures followed by Hemorrhagic stroke (23.07%) , Cerebral venous thrombosis (23.07%) and least common was Subdural haemorrhage (7.69%) .

Above results are comparable to study by Hauser⁵ et al in which CVA occurred in 18% cases. Similar results were found in study by Narayanan JT and Murthy JMK⁶, Sudhir Chalasani⁷ et al and Quraishi⁸ et al in which CVA occurred in 21%, 26.5% and 30% subjects respectively. ³

In above study ischemic stroke was most common type (46.15%) this is due to the fact that ischemic strokes are far more frequent than hemorrhagic ones, this finding is similar to study done by Jacques DE REUCK.⁴

Table :2 Correlation of with age group:-

ETIOLOGY	AGE GROUPS IN YEARS				TOTAL
	15-19 (Adolescence)	20-40 (Young adult)	41-64 (Middle adulthood)	>64 (Old age)	
Ischemic stroke	1	1	8	2	12
Haemorrhagic stroke	-	1	1	4	6
CVT	-	6	-	-	6
Subdural haematoma	-	-	-	2	2
TOTAL	1	8	9	8	26

Ischemic stroke was most common in middle adulthood (66%), haemorrhagic stroke was most common in old age (66%), CVT in young adult,

subdural hematoma in old age. This finding were similar to study done by Lourdes V, Linda M.³ and Jacques DE REUCK⁴.

CONCLUSION

Cerebrovascular accident was the one of the major cause of new onset seizure and it mainly present in elderly population. Hence various life style modification like low cholesterol diet, regular exercise and quitting of addiction if any is advised to prevent them from catastrophic event.

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