Acute Symptomatic Seizures in RIMS RAIPUR

Dr.Sanjay Agarwal
Assistant Professor, Department of MEDICINE, Raipur Institute of Medical Sciences, Raipur, C.G.

Dr.SOMESH KUMAR PANDEY
Assistant Professor, Department of MEDICINE, Raipur Institute of Medical Sciences, Raipur, C.G.

Dr.Brajendra kumar
Professor, Department of Medicine, Teerthanker Mahaveer Medical College & Research Centre Moradabad, UP-244001

ABSTRACT
An acute symptomatic seizure is defined as a clinical seizure occurring at the time of a systemic insult or in close temporal association with a documented brain insult (an acute medical or neurological illness). These etiologies may vary with time and place. This study was conducted with an aim to study the clinical profile of acute symptomatic seizures presenting to our RIMS RAIPUR CG, a tertiary care centre at North India. All patients admitted in medicine wards with recent onset seizure either alone or in association with some medical complaints were considered in the study. Detailed history, neurological examination and baseline investigations were done in all the patients. Cerebrospinal fluid (CSF) analysis was done wherever indicated and CT scan / MRI brain were carried out. EEG was done within 48 hours of seizure (if the condition of patient permitted). Total number of patients was 48 (28 male; 20 female). Majority of patients were less than 40 years (n=32) and most common presentation was single seizure (n=24, 51.1%). Status epilepticus was seen in (n=12, 25.5%). Thirty cases had generalized tonic clonic seizures and 17 had partial seizure. CNS infections was the most common etiology (n=44.7%) neurocysticercosis being the commonest (14/47; 31%) followed by metabolic causes (n=10; 21.3%), post stroke epilepsy (7/47; 14.90%) and brain tumor (3/47, 6.3%). Three had non specific gliosis. Outcome was good in cases with single seizure. Four patients who had status epilepticus expired.

Introduction
A seizure may be a presenting feature of any medical or neurological disorder. The classification of seizures and that of the epilepsies is constantly being modified. In one of the latest versions, called as ‘syndromic classification’- an attempt has been made to incorporate all of the seizure types and epileptic syndromes and to categorize them not only as partial and generalized but also according to their age of onset, their primary or secondary nature, the evidence of cortical loci of the epileptogenic lesions and the many clinical settings in which they occur. An acute symptomatic seizure has been defined as a clinical seizure occurring at the time of a systemic insult or in close temporal association with a documented brain insult- an acute medical or neurological illness. Suggestions have been made to define acute symptomatic seizures as those events occurring within 1 week of stroke, traumatic brain injury, anoxic encephalopathy, or intracranial surgery; at first identification of subdural hematoma; at the presence of an active central nervous system (CNS) infection; or during an active phase of multiple sclerosis or other autoimmune diseases. In addition, a diagnosis of acute symptomatic seizure should be made in the presence of severe metabolic derangements (documented within 24 hr by specific biochemical or hematologic abnormalities), drug or alcohol intoxication and withdrawal, or exposure to welldefined epileptogenic drugs. Around 40% of newly diagnosed seizures belong to this category. Differentiating characteristics of these seizures with regard to true epileptic disorders are (i) a clearly identified causal association, (ii) generally tend not to recur, and (iii) usually longterm anti-epileptic treatment is not necessary. The risk of subsequent epilepsy is increased in a subgroup of these patients, especially in cases with associated cerebrovascular disorders, head injuries and central nervous system infections but not with metabolic disorders. Long-term preventive treatment is rarely indicated in the patients with metabolic disorders. Though the incidences of acute symptomatic seizures have been reported in three studies viz, from Rochester (Minnesota), UK and South India as 3.1, 21 and 22.5 % respectively, however those on the mortality of acute symptomatic seizures are still lacking. A standardized mortality ratio (SMR) in patients with a newly diagnosed unprovoked seizure ranged from 2.5 to 4.1 based on different study population and design. The SMR was highest in the youngest patients as well as in patients with symptomatic seizures and their etiological profile varied according to the place and period of study.

Material and Methods
Our study conducted during January 2015- June 2016 at RMS RAIPUR CG. All the patients above 16 years, who came with first seizures in their life, were included in the study. The etiology of SE was classified as (i) acute symptomatic SE occurring in patients with an acute medical or neurological illness, (ii) remote symptomatic SE owing to conditions resulting in a static encephalopathy or an antecedent insult such as stroke, head injury scurs, calcifications, and (iii) cryptogenic- SE owing to conditions presumed to be symptomatic, whose cause is unclear. Cases of eclampsia, pseudoseizure and syncope were excluded by detailed history from an eye witness and clinical examination of the patients. The patients were classified and seizure frequency was noted. The seizures were classified according to definition by ILAE Commission Report into (i) single seizure- a brief seizure not followed by another, (ii) status epilepticus (SE) - (a) a continuous seizure of more than 5 minute duration or (b) two or more discrete seizures of five minutes duration between which there is incomplete recovery of consciousness and (iii) seizure cluster- the cluster of seizures that occur within a short period of time but do not meet the criteria for diagnosis of status. All the patients with SE and seizure cluster were treated with intravenous diazepam and phenytoin according to the protocol- intravenous diazepam (0.15 mg/kg) followed by intravenous loading of phenytoin (20 mg/kg) as first-line drug treatment. If seizure did not stop within 30 min of starting of loading dose of phenytoin, patients were given additional intravenous phenytoin (5 mg/kg). The second line drugs were given when no response was observed with above drugs in first hour. Second line drugs were- intravenous loading dose of valproate (25-30 mg/kg) or phenobarbitone (20 mg/kg) as loading dose followed by maintenance drip (60 mg/min) till the control of seizures or one hour which ever was earlier. If the seizures could still not be controlled after one hour (refractory seizures), thiopentone (10-20 mg/kg) - loading dose followed by infusion (0.5-1.0 mg/kg/hr) was given along with mechanical ventilatory support. The patients with single seizure were investigated first before AED was started. The investigations like blood sugar, electrolytes including calcium, blood urea, serum creatinine, liver function test (LFT), complete hemogram including ESR were done on all the patients. Specific investigations where ever indicated viz. CT scan/ MRI brain - plain and contrast, electroencephalography(EEG), cerebrospinal fluid (CSF) analysis, electrocardiograph, X-ray – Chest (PA), serum

Keywords: acute symptomatic seizures, etiology, incidence, outcome
Neurological infections were more common as compared to CVA and Indian region, were different from those of western countries. 

We also observed that the status epilepticus was in strong association with occurrence of hemorrhagic CVA and the patients suffering from single seizures had good prognosis and they required long term antiepileptic therapy.

**CONCLUSION**

An acute symptomatic seizure is defined as a clinical seizure occurring at the time of a systemic insult or in close temporal association with a documented brain insult (an acute medical or neurological illness). These etiologies may vary with time and place. Majority of patients were less than 40 years (n=32) and most common presentation was single seizure (n=24, 51.1%). Status Epilepticus was seen in (n=12, 25.5%). Thirty cases had generalized tonic clonic seizures and 17 had partial seizure. CNS infections was the most common etiology (n=44.7%) neurocysticercosis being the commonest (14/47; 31%) followed by metabolic causes (n=10; 21.3%), post stroke epilepsy (7/47; 14.9%) and brain tumor (3/47; 6.3%). Three had non specific glissos. Outcome was good in cases with single seizure. Four patients who had status epilepticus expired.

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