DISCUSSION


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Epilepsy is a common illness. Partial epilepsies are frequent and EEG techniques are very much helpful for diagnosis of partial epilepsies. Considering this we have decided to conduct a correlative study of clinical presentations and EEG abnormalities in cases partial epilepsies.

**Age** : Age specific prevalence ratios for partial epilepsies have been found to be lowest in first decade (Brewis et al - 1966, Juul Jensen 1976 and Heirer et al - 1986). However in this study maximum number of cases belonged to third decade.

Age of onset of seizures was highest in second decade and slightly lower in first decade. Then it decreased substantially in fourth, fifth and sixth decade.

**Sex** : Approximately (70%) of patients were male. Male to female ratio was 2.4:1. Findings were almost similar to Dixit and Mishra (1987-88) and Sood and Mishra (1988-89). Male dominance in this study might be because of more attention given to male member of family in rural population of India.

In many studies males were predominant, male to female ratio being 1.4:1.

**Clinical Seizure types :**

In the present study seizures have been classified on the
basis of classification of epileptic seizures given by ILAE in 1981 and modified in 1982 by Marsden and Reynolds.

Gastaut et al (1975) studied 6000 epileptics and worked out their different classifiable groups and their relative frequency in children and adults. A similar study by Joshi et al (1977) had been carried out in India. Both these studies were based on classification almost similar to that used in the present study. Similar studies were done in this institution by Dixit and Mishra in (1987-88) and Sood and Mishra in (1988-89). Primary generalised seizures dominated our series (55%), in comparison to 30% in the series of Gastaut et al (1975), 20% in the series of Joshi et al (1977), 51.7% by Dixit and Mishra (1987-88) and 62% by Sood and Mishra (1988-89). Next common type was secondarily generalised partial seizures (18%). Figure was higher in comparison to 12% and 15% in Gastaut et al (1975) and Joshi et al (1977) respectively. Cases of simple partial seizures in the present study were (15%) as compared to 50% (Joshi et al, 1977) Smallest number of cases were of complex partial seizures (7.1%) which was almost similar i.e. 7% in the study of Joshi et al (1977).

FEATURES OF SECONDARILY GENERALISED PARTIAL SEIZURES

In the present study, out of 196 cases, 36 (18.36%) cases were of this type of seizures premonitory symptoms were present clinically, in 16 cases.
Six cases presented clinically as tonic spasms, while in 30 cases, clinical presentation was of tonic clonic types. In a study done by Dixit et al (1987-88) these cases were included in primary generalised epilepsy. In these particular cases, it is thought that the spread of focal discharges was so rapid, that focal changes were not present clinically but can be recorded in EEG.

Age of patients ranged from 1 month to 52 years. More than one third of patients were below the age of 10 years. Male to female ratio was 2.8:1. Frequency of seizures varied from several attacks in a day to single attack in a year.

Aetiological factor was present in 9(25%) cases, slightly more in comparison to primary generalised seizures. Head injury was commonest in 4 cases followed by history of birth anoxia in 3 cases and by intracranial space occupying lesion in 3 cases, inflammatory brain disease in 2 cases. In a series by Joshi et al (1977) aetiological factors were present in 60% of cases. The lesser percentage of etiological factors in the present study might be because CT scan could be performed in fewer number of cases, particularly in the suspected cases of intracranial space occupying lesions. According to Bastaut and Ga.staut (1976), CT scans detect 20% more cerebral lesions than the combination of long established techniques like, x-ray skull, EEG and cerebral angiography.
Precipitating factors were present in 4 cases (11%) in the form of sleep-4 cases, fatigue - 1 cases, fever - 1 case.

Out of 48 cases, motor symptoms were present in 16 cases (44%). They were present in the form of twitching of angle of mouth, eye movement, clonic movements of limb and tonic spasm. Sensory symptoms were in the form of tingling and numbness sensation 8 (22%) cases. Sensory motor symptoms were present in 10 (26%) cases. Autonomic symptoms i.e. epigastric pain were present in 5% cases.

**EEG FINDINGS AND CLINICAL CORRELATION**

EEG abnormalities were detected in about (80%) cases, percentage being significantly higher than in cases with primary generalised seizures. Findings were focal in 7 (19.4%) without any secondary generalisation while in 18 (50%) cases, secondary generalisation was present. In 4 (11.11%) cases no epileptic foci could be detected and findings were generalised and bilaterally symmetrical and synchronous. In 12 (33%) cases epileptic focus were on left side and right sided epileptic focus was present in 9 (25%) cases. In three cases focus was central. In one another case it was bilateral in both temporal region. This patient was presented clinically with aura of epigastric pain and tonic-clonic convulsions.

Focus was clearly demonstrated in a single lobe area of scalp in 9 (25%) cases. In all the cases focus determination was based on maximum slowing of wave pattern and phase reversal.
In 16(44%) cases, EEG focus involved two areas of scalp i.e. fronto-perietal-2 cases, parieto-occipital 1 case, centroparietal-6 cases, and occipitotemporal 4 cases. Parietotemporal. EEG changes were spreaded in such a manner that exact localisation was not possible. This might be, because epileptic focus was deep and EEG changes involved two areas of scalp. One patient of head injury showed haematoma in frontal region and EEG showed fronto-parietal focus. Patient had memory impairment and some behavioural abnormality after head injury.

One other interesting case, showed central EEG focus, as phase reversal with generalised epileptic discharge bilaterally symmetrical and synchronous. CT scan showed small granuloma in left mid central region. Patient presented clinically with right sided sensory motor, focal onset followed by generalised tonic-clonic convulsions and unconsciousness.

In one case foci were bilateral in both the temporal region. Patient presented clinically with autonomic symptoms as epigastric pain before tonic clonic convulsion and unconsciousness. This might be because of mirror foci in two lobes (Kiloh et al, 1982).

There were two patients of tonic spasm, one showed phase reversal in fronto-parietal region with generalised epileptic discharges. Other showed slowing in the fronto-parietal region, with bilateral generalised discharges.
In 4 (11%) cases, EEG showed epileptic discharges, bilaterally symmetrical and almost synchronous without any focal changes. The work of Tukel and Jasper (1952) and Penfield and Jasper (1954) showed it was possible for bilaterally synchronous abnormalities to appear in the EEGs of patients with epilepsy apparently caused by unilateral parasaggittal orbitofrontal, or anterior temporal lesions. They called this pattern of belaterally symmetrical and synchronous discharges due to some focal lesion as secondary bilateral synchrony.

FEATURES OF SIMPLE PARTIAL SEIZURES:

In our study, 29 (15%) cases were of simple partial seizures. Other studies reported 20% simple partial seizures (Sharan, 1987), whereas 50% and 62% reported by Gastaut et al (1975) and Joshi et al (1977), respectively. The low percentage of simple partial seizures in the present study might be because in Bundelkhand region most of the persons are of rural society and uneducated, did not bother about simple twitching and minor movements in hand or feet without loss of consciousness. Age of the patients ranged from 10 months to 52 years. In approximately half of the cases, seizures started below the age of 10 years. Male to female ratio was 2.2:1.

Predisposing factor were present in (11%) cases. However, Joshi et al (1972) found predisposing factor in 30% of cases, whereas Dixit and Mishra (1987-88) could found predisposing
factor in 15.4% of cases. History of head injury was present in 2 (0.69%) cases.

Out of 20 cases, seizures started from left side in 16 cases and from right side in 12 cases. Left sided dominance of symptoms could not be explained. Start of seizure from thumb or fingers could possibly be because representation of hand in brain involves much area and is more prone to injuries.

EEG FINDINGS AND CLINICAL CORRELATION

EEG abnormalities could be detected in 16 (55.17%) cases, EEG focus involving the single area of scalp was found in 5 cases. One case showed central focus. In 5 cases, EEG focus involved two areas of scalp. In two cases multiple foci was present on one side and exact localisation of focus could not be determined. In two cases EEG focus involved occipito parieto temporal region.

In 7 cases, findings were strictly focal without any generalisation to other side. Whereas in other cases, there is generalisation of epileptic discharges to other side. This might be because epileptic discharges in EEG were spreaded bilaterally but clinically patient did not exhibit generalised features.

FEATURES OF COMPLEX PARTIAL SEIZURES

There were 14 cases (7.1%) cases of complex partial
seizures, male to female ratio was 2:1. In 7 (53.85%) cases seizures started below the age of 10 years. In 16 cases (76.9%) seizures started below the age of 20 years. Findings are almost similar to Aird et al (1967) who reported that 42% cases had their first attack in the first decade and over 75% in the first two decades of life. Visamani and Sawhney (1966) and Reddy (1971) drawn the similar conclusion.

Out of 14 cases, predisposing factors could be worked out only in 3 (19.37%) cases in the form of head injury - 1 case and birth anoxia - two cases. This is almost similar with earlier studies done in this institution by Dixit and Mishra (1987-88) and Sood and Mishra (1988-89). Lesser percentage of aetiological factor was because of the smaller sample and in expected cases CT scans could not be performed.

Aura was present in 9 (64%) of cases. It is almost similar findings as compared to 60% of cases of Shukla et al, 1979.

Out of 14 cases, 3 (21%) case also had tonic clonic convulsions. Several authors included these somatomotor manifestations as a clinical features of psychomotor seizures (Bossi et al, 1984).

**EEG FINDINGS AND CLINICAL CORRELATION**

57.11% cases showed EEG abnormality. Epileptic focus was
present in 8 cases viz. temporal - 3 cases, centrotemporal 1 case, temporo- parietal - 1 case, fronto-temporal - 1 case. In one case foci were bilateral in both the temporal regions and one might be mirror image of the other. Patient presented with somatosensory hallucination, smacking of lips and generalised tonic movements and unconsciousness.