

Solar Eclipse and its effect on Epilepsy

P. Sheji

LH II, Medical College, Calicut, Kerala

Abstract

A study was conducted at the Indian Epilepsy foundation to investigate the possibility of seizures being precipitated by the solar eclipse viewed on October 24, 1995. 47 known epileptic patients were included under the study.

Study revealed that 4 patients, out of 47 have some relevant findings. Of these 4 patients, one patient had fits at the time of eclipse. This patient however was not on regular medication. Hence the fits cannot be considered due to solar eclipse.

Thus there is no positive correlation between epilepsy and solar eclipse occurring during minimal solar activity.

Key Words : Solar Eclipse, Epilepsy

Aim of the Study

To find out the effect of solar eclipse on provocation of epileptic fits.

Hypothesis

There may be changes in the magnetic field of earth when there is eclipse. The effect of magnetic field may reflect in human neuronal electrical activity. We assume that known epileptics are having greater chance to be provoked by such a change. By observing the changes in them on that particular day of eclipse, we can find out if there is any association between eclipse and epilepsy.

Review of Literature

Venkitaraman (1976) has given a hypothesis on epilepsy and solar activity. According to this hypothesis, solar activity plays a major role in triggering of attacks in epileptic patients. Solar activity, especially sunspots, causes wide variation in the geomagnetic field which on impinging on the human body may induce electrical activity in brain leading to an epileptic attack.

However, certain other authors have reported observation on 38 known epileptic patients of which 15 patients have undergone EEG changes. Studies fail to bring forth any positive correlation between occurrence of seizures, scalp EEG abnormalities and geomagnetic variation during the solar eclipse.

Experimental studies provide strong evidence for lead or iron as factors causing focal epileptogenesis. This indicates a probable mechanism for induction of post traumatic epilepsy. But could also be relevant to seizures after cerebrovascular accidents, vascular malformations or invasive tumours.

Haemolysed blood applied to the cat cortex was initially shown to produce spike discharges. Subsequently, the injection of tissues or tissue chloride into the cortex was shown to have both an acute and a chronic epileptogenic effect. Studies of the time course of development of focal discharges after blood or haemoglobin application suggest that release of iron during the course of haemoglobin breakdown could be the critical step in epileptogenesis.

Method of Study

Selecting patients with epilepsy and observing for epileptic attack on that particular day of eclipse and results are analysed.

Material of Study

Forty seven known patients are selected out and studied for clinical appearance of epilepsy. A few of them are studied for EEG changes at that time.

Relevant Findings

1. One patient had fits on the day of eclipse. That patient had nine attacks between 2nd October and 26th October.
2. One four year old boy had febrile seizure on the day of eclipse.
3. One twelve year old girl had seizures two days after the eclipse.
4. One patient expressed mild discomfort on the day of eclipse.

Drawbacks of Observation

- * Eclipse was only partial in Kerala
- * Almost all the patients were under medication.

Discussion on Observation

The patient who had fits between 22nd to 26th of October was under regular medication. No history of missing the dosage. She did not give a history of relevant change in the attack at the time of eclipse.

The four year old boy who had febrile seizures on the day of eclipse was under regular medication with phenobarbitone. No history of skipping dosages.

The twelve year old girl who had seizure on 26th (ie two days after eclipse) was under regular medication with Carbamazepin.

One 25yr old female had epileptic fits on 24th and 25th of October 1995. She was under medication with Carbamazepin and Phenytoin. She used to skip the dosage often. Her frequency of attacks is once in a week. So we cannot take it as a relevant finding.

Inference

There is a general belief that solar eclipse provokes epileptic fits. However, studies done reveal that there is no such relation and epileptic fits are not provoked by solar eclipse at minimal solar activity.

Acknowledgement

My sincere thanks to Dr.Rajendran of Indian Epilepsy Foundation, Ernakulam : Dr. K. Rajeevan, Dept. of Pathology, Medical College, Calicut, Dr. Harsha, Fathima Hospital, Calicut; Preethi Cherian of IIIrd MBBS, Med. College, Calicut for their help.

References

K.Venkataraman, 1976. Epilepsy and Solar Activity - An Hypothesis, Neurology, India.