



## CORRELATION OF LABORATORY INVESTIGATIONS BASED ON DISEASE CONFIRMATION OF EPILEPSY - IN A TERTIARY CARE HOSPITAL

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### ABSTRACT

To correlate laboratory investigation with disease conformation. Prospective observational study was conducted in, In-patient departments of General Medicine and Peadiatrics. Epilepsy affects approximately 1 percent of the population and is characterized by recurrent unprovoked seizures. A careful clinical history is often helpful in diagnosis, classification of seizure and epilepsy types, selection of appropriate ancillary studies, selection of anti-epileptic drugs, and formulation of a long-term management plan. This

article provides directions and guidelines both for the family practice physician and the specialist in evaluating this patient population in the clinics. From the study it can be concluded that many cases are confirmed without having proper diagnostic tests, this may lead to in-appropriate diagnosis as well as treatment. Were as, confirmation of disease with proper lab investigation will lead to rational therapy which ultimately provides better patient care and decreases the length of hospital stay. Though in few cases patient did not opt for those costly diagnostic tests which were ordered, an appropriate government policy should be developed so that not only treatment but also diagnosis can reach to every citizen, which ultimately leading to better health care and less socio-economic burden.

**KEYWORDS:** Institutional ethics committee (IEC), Confirmational diagnosis, Epilepsy, Graphical representation, Disease confirmation.

### INTRODUCTION

**Disease:** Disease is a particular abnormal, pathological condition that affects an organ, which is associated with specific signs and symptoms. It is confirmed by specific diagnostic tests.<sup>[1]</sup>

**Diagnosis:** Identification of the nature and cause of a certain phenomenon, where a judgment is made about particular illness or problem after examining it.<sup>[2,3]</sup>

**Provisional diagnosis:** Which is diagnosed based on the history, complaints and signs & symptoms of the patient, in this situation assumption of a disease is considered.

**Confirmational diagnosis:** Which can be defined as, final judgment of the illness or disease after performing the laboratory tests.

A seizure is defined as an abnormal, excessive, paroxysmal discharge of the cerebral neurons. Epilepsy is a chronic condition characterized by recurrent, unprovoked seizures. In clinical practice, if a patient has 2 or more seizures, he/she is diagnosed as having epilepsy.<sup>[4,5]</sup>

It is of the utmost importance for a clinician to be aware of other conditions and/or episodes that may simulate seizures. In short, the first question to be addressed is: Does the episode in question represent a seizure? The following section provides a brief overview of conditions that can masquerade as seizures.<sup>[7-9]</sup>

**Table 1: Differential Diagnosis of Seizures.**

Benign positional vertigo
Breath holding spells in children
Cardiac arrhythmia
Hypoglycemia
Migraine
Narcolepsy/Cataplexy
Night terrors
Nightmares
Nocturnal myoclonus
Panic attacks
Periodic paralysis
Pseudoseizures/Hysterical seizures
Sleep apnea
Syncope
Transient ischemic attacks

**Table 2: Classification of Seizures and Epilepsy.**

<p><b>Seizure</b></p> <p>Partial (seizures with a focal or localized onset)</p> <ul style="list-style-type: none"> <li>• Simple partial (awareness* is not lost)</li> <li>• Complex partial (loss of awareness)</li> </ul> <p>Generalized (Generalized seizures affect both hemispheres simultaneously, without a focal onset.)</p> <ul style="list-style-type: none"> <li>• Absence seizures</li> <li>• Myoclonic seizures</li> <li>• Tonic seizures</li> <li>• Clonic seizures</li> <li>• Atonic seizures</li> <li>• Tonic-clonic seizures</li> </ul> <p><b>Epilepsy</b></p> <p>Examples of localization-related epilepsies</p> <ul style="list-style-type: none"> <li>• Frontal lobe epilepsies</li> <li>• Temporal lobe epilepsies</li> <li>• Parietal lobe epilepsies</li> <li>• Occipital lobe epilepsies</li> </ul> <p>Examples of generalized epilepsies</p> <ul style="list-style-type: none"> <li>• Juvenile absence epilepsy</li> <li>• Juvenile myoclonic epilepsy</li> <li>• Infantile spasms (West syndrome)</li> <li>• Lennox-Gastaut syndrome</li> </ul>
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\* The patient may appear awake but is unable to interact with his surroundings in a meaningful way, therefore the term “loss of awareness” rather than “loss of consciousness” is used.

Various diagnostic tests are as follows:

**A) Blood or body fluids analysis**

- 1) Routine haematological tests.
- 2) Routine serological tests.
- 3) Routine biochemical tests.
- 4) Routine urine examination.

**B) Graphical representation of various organs to disease confirmation**

- Computed tomography (CT-Scan)
- X ray
- Magnetic resonance imaging (MRI)

- Positron emission tomography (PET)
- Electrocardiography (ECG)
- Electro encephalography (EEG)
- Ultra sonography (USG)

### **AIM AND OBJECTIVES**

**Aim:** To correlate laboratory investigations with disease confirmation.

#### **Objectives**

- > Confirmation of diagnosis based on specific lab tests.
- > To correlate confirmation of diagnosis with disease.
- > To explore the concept of clinical diagnosis with reference to history and socio economic status.

### **METHODOLOGY**

**Study site:** In-patient departments of General Medicine and Pediatrics of tertiary care hospital.

**Study design:** A prospective observational study.

**Study duration:** 6 months.

**Study disease:** Epilepsy.

#### **Inclusion criteria**

- \* Cases with above mentioned diseases.
- \* Cases of any age and gender.
- \* Cases with appropriate laboratory tests and confirmational disease.
- \* Cases in which no appropriate laboratory data.
- \* Cases in which no appropriate laboratory data but disease confirmed.
- \* Cases updated till discharge.

#### **Exclusion criteria**

- \* Cases other than above mentioned diseases.

**Study procedure:** The study protocol (correlation of laboratory investigations with disease confirmation in Tertiary Care Hospital) was submitted to IEC, for approval. After obtaining approval from the IEC permission from the hospital, A Observational study was initiated, which includes the following.

- Participated in ward round on regular basis.
- Identified of above mentioned cases and documented in structured documentation form (Annexure-II).
- Collected cases were conformed based on appropriate reference.
- Data was analysed to obtain report.
- Final report was prepared and submitted.
- Publication of work.

Drop out: If selected case patient leave hospital without information/permission.

## RESULT

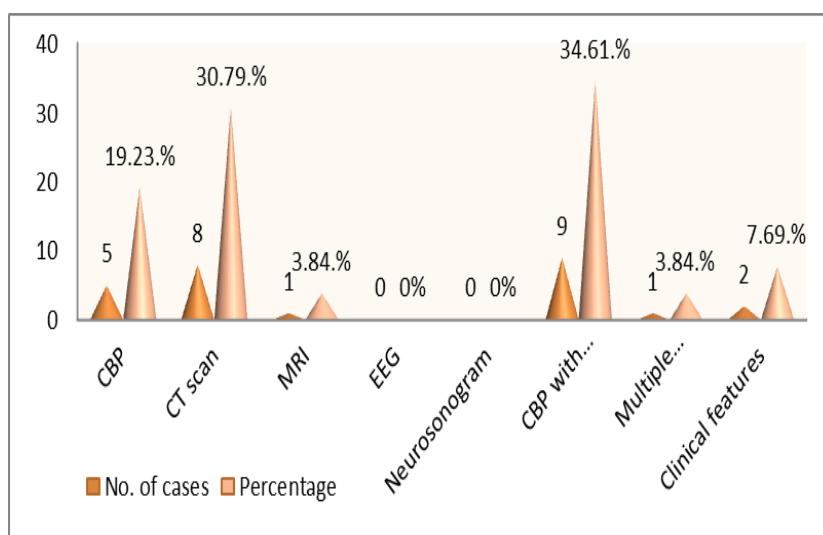
Total selected cases = 26

Disease confirmed with lab tests = 24 cases

Disease confirmed without lab tests = 02 cases

**Table 1: Distribution of lab parameters in Epilepsy condition.**

S. No	Disease	Parameters	Total cases (26)	Percentage	
1	Epilepsy	CBP	05	19.23%	
		Radiography	CT Scan	08	30.79%
			MRI	01	3.84%
			EEG	00	0%
			Neurosonogram	00	0%
		CBP with Radiography	09	34.61%	
		Multiple radiography	01	3.84%	
Clinical features	02	7.69%			



**Fig. 1: Graphical representation of distribution of lab parameters in Epilepsy condition.**

## DISCUSSION

A total of 26 cases were analyzed and categorized for the study. In our study cases of Epilepsy, were collected from General Medicine and Pediatric departments in a tertiary care hospital.

Our study shows total 26 Epilepsy cases among them 17 cases were confirmed by using CT-scan. 01 case was by using confirmed MRI and only one case was confirmed by using multiple radiography (CT-scan, EEG & MRI). Previously same was reported by Marla JF *et al.*<sup>[6]</sup>

## CONCLUSION

From the study it can be concluded that many cases are confirmed without having proper diagnostic tests, this may lead to in-appropriate diagnosis as well as treatment. Were as, confirmation of disease with proper lab investigation will lead to rational therapy which ultimately provides better patient care and decreases the length of hospital stay.

Though in few cases patient did not opt for those costly diagnostic tests which were ordered, an appropriate government policy should be developed so that not only treatment but also diagnosis can reach to every citizen, which ultimately leading to better health care and less socio-economic burden.

## REFERENCES

1. Dorland, Dorland's illustrated medical dictionary, 32<sup>nd</sup> ed, Elsevier health sciences, 2011; 68-72.
2. Dipiro JT, Talbert RL, Yee GC, Matzke GR, Wells BG, Michael L. Pharmacotherapy: A Pathophysiological approach, 7<sup>th</sup> ed, MC Graw-Hill, New York., 2008; 373-1790.
3. Nikdokht F, Holly MG, Nobuko K, Michael ES, Sebastian WM, Wei YL, *et al.* Temporal Lobe Epilepsy: Quantitative MR Volumetry in Detection of Hippocampal Atrophy. *Radiology*, 2012; 264(2): 542-50.
4. Francesco B. An evidence-based approach to proper diagnostic use of the electroencephalogram for suspected seizures. *Epilepsy & Behavior*, 2011; 21: 219-22.
5. Donaldson D, Trotman H, Barton M, Melbourne R. Routine Laboratory Investigations in Infants and Children Presenting with Fever and Seizures at the University Hospital of the West Indies. *West Indian Med J.*, 2008; 57(4): 369-372.
6. Marla JF, Ghajala QF. Seizures in Children. *Pediatr Clin N Am*, 2006; 53: 257-77.

7. Nizam SA, Susan SS. An approach to the evaluation of a patient for seizures and epilepsy. *Wisconsin Medical Journal*, 2004; 103: 49-45.
8. Berten C, Patrick C. Severe myoclonic Epilepsy in infancy, relevance for the clinician of severe epilepsy starting in infancy. *Acta neurol. Belg*, 2004; 104: 95-99.
9. Hirro M, Takeo T. *Neuropsychological EEG activation in patients with epilepsy*. Oxford University Press, 2000; 123: 318-30.
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