



CORRELATION OF LABORATORY INVESTIGATIONS BASED ON DISEASE CONFIRMATION OF STROKE- GRAPHICAL REPRESENTATION OF VARIOUS ORGANS TO DISEASE CONFIRMATION

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ABSTRACT

Stroke is a devastating condition encompassing a wide range of pathophysiological entities that include thrombosis, hemorrhage, and embolism. Current diagnosis of stroke relies on physician clinical examination and is further supplemented with various neuroimaging techniques. A single set or multiple sets of blood biomarkers that could be used in an acute setting to diagnosis stroke, differentiate between stroke types, or even predict an initial/reoccurring stroke would be extremely valuable. We discuss the current classification, diagnosis,

and treatment of stroke, focusing on use of novel biomarkers (either solitary markers or multiple markers within a panel) that have been studied in a variety of clinical settings. From the study it can be concluded that very few 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, Stroke, 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.^[1]

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

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.

Various diagnostic tests are as follows

Graphical representation of various organs to disease confirmation.^[4-8]

- > Computed tomography (CT-Scan)
- > X ray
- > Magnetic resonance imaging (MRI)
- > Positron emission tomography (PET)
- > Electrocardiography (ECG)
- > Electro encephalography (EEG)
- > Ultra sonography (USG)

Stroke is a devastating condition encompassing a wide range of pathophysiological entities that include thrombosis, hemorrhage, and embolism. Current diagnosis of stroke relies on physician clinical examination and is further supplemented with various neuroimaging techniques. A single set or multiple sets of blood biomarkers that could be used in an acute setting to diagnosis stroke, differentiate between stroke types, or even predict an initial/reoccurring stroke would be extremely valuable.

Stroke terminology encompasses a vast composition of pathophysiological entities that include thrombosis, embolism, and hemorrhage. Broadly, stroke is classified as ischemic or hemorrhagic types, with ischemic stroke accounting for approximately 85% of the total number.^[9,10] Ischemic stroke is primarily caused by either intracranial thrombosis or extracranial embolism. Intracranial thrombosis is largely due to atherosclerosis, whereas extracranial embolisms commonly arise from the extracranial arteries or from the

myocardium due to concurrent myocardial infarction, mitral stenosis, endocarditis, atrial fibrillation, dilated cardiomyopathy, or congestive heart failure. Hemorrhagic stroke can be classified as either intracerebral hemorrhage (ICH) or subarachnoid hemorrhage (SAH). ICH originates from weakened cerebral vessels, which rupture and form a localized hematoma within the parenchymal cerebral space. In SAH the hemorrhage occurs outside of the brain and is released into the cerebral spinal fluid (CSF). The common causes for both ICH and SAH are comparable and include hypertension, trauma, drug use, or vascular malformations.

Cerebral infarction biomarkers have the potential to alter and expedite the differential diagnosis and prediction of stroke, particularly in challenging cases where the neuroimaging findings appear normal or equivocal. Difficulties in biomarker discovery revolve around the slow release of glial and neuronal proteins across the blood–brain barrier after stroke or traumatic injury.^[11,12]

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: Stroke.

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.,

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

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

RESULT

Total selected cases = 35

Disease confirmed with lab tests = 34 cases

Disease confirmed without lab tests = 01 cases

Table 1: Distribution of lab parameters in Stroke condition.

S. No	Disease	Parameters	Total cases (35)	Percentage	
1	Stroke	CBP	13	37.14%	
		Radiology	CT Scan	07	20.03%
			MRI	01	2.85%
			ECG	00	00%
			2D Echo	00	00%
		Only Lipid profile	01	02.85%	
		CBP with Radiology	06	17.14%	
		CBP, Radiology & Lipid profile	03	08.57%	
		Multiple radiology	03	08.57%	
Clinical features	01	02.85%			

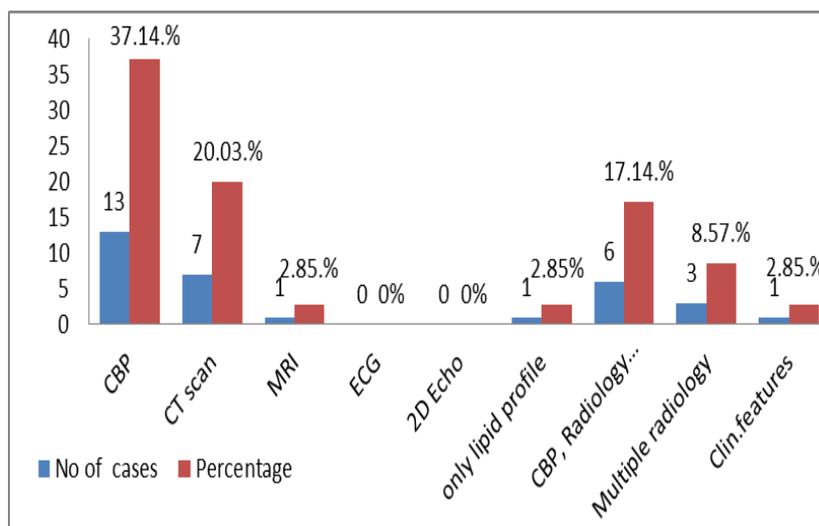


Fig. 1: Graphical representation of distribution of lab parameters in Stroke condition.

DISCUSSION

A total of 35 cases were analyzed and categorized for the study. In our study cases of Stroke, were collected from General Medicine and Pediatric departments in a tertiary care hospital.

Our study shows total 35 stroke cases, out of 35 cases 16 cases were confirmed by using CT-scan as diagnostic tool, and 1 case was confirmed by using MRI. Same was reported previously by Smith G *et al.*,^[3] and 1 case was confirmed by using lipid profile which is in parallel to work done by Laloux P *et al.*^[7]

CONCLUSION

From the study it can be concluded that very few 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.

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