CLINICAL PROFILE IN THALAMIC STROKE: INFARCTS VS HAEMORRHAGEPavithra T¹, Vigneshwaran J², Noorul Ameen S³, Rajasekaran D⁴**HOW TO CITE THIS ARTICLE:**

Pavithra T, Vigneshwaran J, Noorul Ameen S, Rajasekaran D. "Clinical Profile in Thalamic Stroke: Infarcts VS Haemorrhage". Journal of Evolution of Medical and Dental Sciences 2015; Vol. 4, Issue 29, April 09; Page: 5043-5047, DOI: 10.14260/jemds/2015/735

ABSTRACT: There is an extensive volume of clinical studies available regarding stroke which is always a subject of interest to clinicians all over the world in terms of management. From previous studies, we notice the absence of a clear cause among population which proves us to believe the presence of underlying risk factors that have not yet been fully discovered. We compared various risk factors, clinical profile in patients with thalamic infarcts and haemorrhages. Therefore, we believe that learning more about this type of stroke can create better awareness among clinicians which can lead to better follow up.

KEYWORDS: Thalamus, stroke, infarcts, hemorrhage.

INTRODUCTION: According to the World health statistics 2011, Stroke, previously the third is now the second commonest cause of death following ischemic heart disease.⁽¹⁾ Approximately 20 million people have stroke every year out of which 5million people die and 5 million people remain with chronic disability. Stroke is also the leading cause of chronic disability worldwide. ⁽¹⁾⁽²⁾

The incidence & prevalence of stroke has been steadily rising in INDIA. Among the 1st study to be conducted in stroke in India (1969-71), the incidence for stroke was 13/100,000 cases a year and now, in 2007, the incidence rates are fast approaching the western figures of 145/100,000 cases a year which was only reported from east India.⁽³⁾ Stroke represented 1.2% of total deaths in India. ⁽²⁾ Therefore, India is going through a stroke epidemic, wherein detection & early management is necessary for control of stroke prevalence.

Thus, stroke is a non-communicable disease is a greater burden to the health system and economy of the developing countries like India. Its management requires multi-disciplinary approach involving clinicians with background not limited to neurology.

Various pathological causes like thrombotic, embolic or hemorrhagic can affect any part of the brain leading to characteristic type of stroke presentation.

Classical presentation of thalamic stroke is usually sensory with hemi anesthesia or thalamic hyperpathia (Dejerine-Roussy syndrome). Though the imaging studies showed thalamic involvement, the classical clinical features of sensory disturbance are not found in a few patients. This study is aimed at comparing the clinical features with imaging so that the non-specialized physicians will be aware of all non-occurrences of the "classic thalamic syndrome" features. This further emphasizes the need for reference to higher centers for early detection and management, thus reducing the mortality & morbidity rate for thalamic stroke involving posterior circulation. This study gives us an insight into the clinical profile of both thalamic infarct and thalamic hemorrhage. It compares the incidence of age, sex and other co-morbidity factors present with it.

ORIGINAL ARTICLE

MATERIALS AND METHODS: All patients satisfying the inclusion criteria admitted in Chettinad health city and research institute during the period of January 2012 to January 2013 were taken up for the study. Our study was conducted with an informed consent obtained from these patients.

A detailed history and clinical examination was obtained from them. The inclusion criteria included, that the patient must be diagnosed with thalamic stroke which was to be radiologically confirmed either by CT or MRI SCAN.

STATISTICAL ANALYSIS: IBM SPSS statistical software version 21 was used for statistical analysis. Thalamic infarcts and thalamic hemorrhage were used as primary outcome variables. Descriptive analysis of all the outcome parameters was done. All the classified variables were presented in frequencies and percentages. The Socio demographic variables like age and gender, baseline clinical variables like symptoms and other parameters were compared between the three groups by proper cross tabulations. The descriptive statistics was assessed by calculating mean differences and standard deviations. Pearson chi-square test and Fischer's exact test were used appropriately to assess the statistical significance of these associated parameters. Graphical representations for all the appropriate parameters are done.

RESULTS: In the study that was conducted for one year revealed 24 patients with diagnosis of thalamic stroke. Thalamic infarcts (TI) were more common (50%) than isolated thalamic haemorrhages (TH) (29%) and thalamic haemorrhages with ventricular involvement (THV) (21%). The study also showed male patients (71%) were predominantly seen in all the three variants compared to women (29%). The age group analysis revealed that the age group of 50-60 years had more incidence of thalamic stroke with mean age group being 57yrs.

Smoking, Alcoholic and tobacco consumers showed almost equal risk factor in both infarcts and haemorrhages.

Coronary artery disease was commonly associated with thalamic infarcts (TI) and showed a significant p value of 0.028. Hypertension and dyslipidimia were also the leading risk factors in thalamic haemorrhage. Sudden onset of limb weakness was prevalent in thalamic haemorrhages (86%) and TI (83%) than sensory symptoms; in thalamic infarct it showed a significant p value of 0.000 and with thalamic haemorrhage a significant p value of 0.012. Nausea and vomiting was also more closely associated with thalamic haemorrhage showing significant p value of 0.027. Clinically, speech disturbances like dysarthria (80%) were a dominant feature with ventricular involvement (THV) showing a significant p value of 0.013.

DISCUSSION: There is an extensive volume of clinical studies available regarding stroke which is always a subject of interest to clinicians all over the world in terms of management. There is no definite study done regarding the incidence of cases involving thalamus.

We compared various risk factors, clinical profile in patients with thalamic infarcts, thalamic haemorrhage and thalamic haemorrhage with ventricular involvement.

In thalamic stroke, the incidence of male was more common than the female incidence. Steinke, Sacco et al study.⁽⁴⁾ Previously proved the same; that male gender was more prevalent in thalamic stroke.

According to Bogousslavsk, Regli et al study,⁽⁵⁾ smokers and alcoholic were significantly seen as a risk factor in thalamic variants, but from our study we infer that smoking and alcohol didn't

ORIGINAL ARTICLE

act as a significant risk factor in occurrence of thalamic stroke. From previous studies that were conducted on thalamic stroke like the Bogousslavsk study, Steinke study, Kwak study, Bordas study.⁽⁵⁾⁽⁶⁾ showed that hypertension and diabetes mellitus were the leading risk factors in thalamic stroke. In our study, Hypertension occurs as the leading cause along with dyslipidemia as the second leading risk factor and then followed by diabetes mellitus.

In our study, speech disorders were predominately seen in thalamic hemorrhage with ventricular involvement, but in Bogousslavsk, Regli et al study⁽⁵⁾ dysphasia is more common in thalamic infarcts.

CONCLUSION: Equal distribution among thalamic infarcts (TI), thalamic hemorrhages (TH) and thalamic hemorrhages with ventricular involvement (TVH) was seen out of the 24 patients included in the study. But if taken infarct against hemorrhage, then thalamic infarct are more common in occurrence. Male were predominately seen in thalamic stroke than female.

Coronary artery disease was commonly associated with thalamic infarcts (TI) with a significant with p value of 0.028). Hypertension and dyslipidemia were also the leading risk factors in our study.

Sudden onset of limb weakness was prevalent in thalamic haemorrhages (TH) (86%) and TI (83%) than sensory symptoms.

Clinically, speech disturbances like dysarthria (80%) were a dominant feature with ventricular involvement (THV).

From our study, we also conclude that thalamic haemorrhage with ventricular extension causes more severe neurological deficits.

We conclude that the initial neurologic presentation does not help in discriminating thalamic stroke.

ACKNOWLEDGEMENT: I would like to thank my professors and my colleagues in helping me collect the data and follow up the patient.

BIBLIOGRAPHY:

1. World Health Organization, The global burden of disease: 2004 update. Geneva, Switzerland: pp. 4.
2. Prevalence of stroke and post stroke cognitive impairment in the elderly in dharavi Bombay 2012; japi 26.
3. Tapas kumar banarjee, Epidemiology of stroke in india, Neurology asia 2006; 11: 1 – 4.
4. Julien Bogousslavsky, MD; Franco Regli, MD; and Antoine Uske, MD, Thalamic infarcts: Clinical syndromes, etiology, and prognosis NEUROLOGY 1988;38:837-848.
5. RYUNGCHAN KWAK, SATORU KADOYA et al, Factors Affecting the Prognosis in Thalamic Hemorrhage, Stroke, Vol 14, No 4, 1983.
6. Barraquer-Bordas, I Illa, A Escartin, J Rusalleda and J L Marti-Vilalta Thalamic hemorrhage. A study of 23 patients with diagnosis by computed tomography, Stroke. 1981; 12: 524-527.

Fig. 1: Involvement of different Vascular types in thalamic stroke

Fig. 2: Sex Group Analysis

Fig. 3: Comparison between Thalamic Infarcts and Hemorrhages on Basis of Risk Factors

AUTHORS:

1. Pavithra T.
2. Vigneshwaran J.
3. Noorul Ameen S.
4. Rajasekaran D.

PARTICULARS OF CONTRIBUTORS:

1. Post Graduate, Department of General Medicine, Chettinad Medical College& Research Institute.
2. Associate Professor, Department of General Medicine, Chettinad Medical College& Research Institute.

FINANCIAL OR OTHER

COMPETING INTERESTS: None

3. Assistant Professor, Department of General Medicine, Chettinad Medical College& Research Institute.
4. Professor & HOD, Department of General Medicine, Chettinad Medical College& Research Institute.

NAME ADDRESS EMAIL ID OF THE CORRESPONDING AUTHOR:

Dr. Rajasekaran Durai,
26/25, New Secretariat Colony,
2nd Stage, Kilpauk, Chennai-600010.
E-mail: rasekar50@yahoo.com

Date of Submission: 12/03/2015.
Date of Peer Review: 13/03/2015.
Date of Acceptance: 01/04/2015.
Date of Publishing: 08/04/2015.