



STUDY OF CLINICAL PROFILE AND IMAGING IN CEREBROVASCULAR ACCIDENT PATIENTS

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ABSTRACT **Background:** In the aging population stroke or cerebro-vascular disease is a non-communicable disease of increasing social economic importance. According to WHO stroke remains the second most common cause of worldwide mortality. **Methodology:** It is a hospital based prospective observational study. All patients with stroke above 18 years of age coming to Department of General Medicine KBNTGH during the study period were included. **Results:** The incidence of stroke is maximum in 41-70 years of age group, 16 (53.33%) patients had ischemic stroke and 14 (46.66%) patients had hemorrhagic stroke. The male to female ratio was 1.30:1. **Conclusions:** This study showed male predominance in stroke cases. Cerebral infarct was more than haemorrhage. Most common clinical presentation was hemiplegia followed by speech involvement and altered sensorium.

KEYWORDS : Ischemic stroke, Hemorrhage clinical profile, Hypertension, Diabetes Mellitus

INTRODUCTION

World Health Organization defines the clinical syndrome of “stroke” as rapidly developing clinical signs of focal (or global) disturbance of cerebral function with symptoms lasting 24 hours or longer or leading to death, with no apparent cause other than vascular origin¹. Stroke is becoming an important cause of premature death and disability in low-income and middle-income countries like India, largely driven by demographic changes and enhanced by the increasing prevalence of the key modifiable risk factor². There are many risk factors for stroke like hypertension, Dyslipidaemia, age, stress and diabetes. Stroke in patients with DM differs from that of stroke in persons without DM with respect to age, gender, stroke severity, prevalence of risk factors and outcome³. Hypertension is generally considered to be the most important risk factor for stroke in the general population⁴. National Commission on Macroeconomics and Health, estimated 1.67million stroke cases in India by the year 2015, suggesting that stroke will be arising epidemic in India in the near future. This may be due to the high prevalence of hypertension, diabetes, Dyslipidaemia, the fast-changing lifestyles and restructuring of the population.⁵

The etiology of stroke in majority of cases could be identified by a proper history taking, an adequate general examination and judicious use of investigations. A cardiovascular examination and imaging of the brain usually gives ample information regarding the etiology, type, site and severity of the stroke.

This study was done to evaluate the clinical profile based on imaging studies of Cerebrovascular accident patients

METHODOLOGY

A Prospective observational study was conducted including all the patients with hemorrhagic and ischemic stroke admitted in the Department of General Medicine, Khaja Banda Nawaz Teaching and General Hospital, KBN University, Kalaburagi who satisfy inclusion criteria were included in the study during period of March 2021 to August 2022.

Inclusion criteria:

1. Patients with hemorrhagic and ischemic stroke
2. Above 18 years of age group
3. Patients of All Genders

Exclusion criteria:

1. Old stroke
2. Patients with severe stroke who died before it could be established whether they had stroke or not.
3. Strokes caused by hypercoagulable disorders.

4. Trauma cases
5. CNS Malignancy
6. CNS infection

A pre structured proforma was used to collect the data in detail about the clinical history and examination. Then initial assessment and stabilization of patient was done. As soon as patient is clinically stable relevant investigations and imaging studies were done to ensure speedy and precise diagnosis. Computerized Tomography (CT) was mandatory in all cases to rule out Ischemic or Hemorrhagic stroke.

Further non hemorrhagic stroke patients were subjected to MRI scan. Other Investigations includes complete blood count, clotting profile, blood sugar, lipid profile, echocardiography, chest X-ray and ECG. These patients were managed medically or surgical intervention as per requirement. Data was analyzed using latest version of SPSS software

RESULTS

17 (56.7%) of patients were males and 13 (43.3%) of patients were females. The male to female ratio in the study was 1.3:1. Final diagnosis CT brain/MRI brain findings show the majority of cases 14 (46.7%) were Hemorrhage and 16 (53.3%) of cases were Ischemic. Majority of patients 12 (40.0%) not had any habits, 6 (20.0%) of patients had the habit of tobacco and 7 (23.3%) of patients had the habit of smoking and 4 (13.4%) of patients had the habit of alcohol and tobacco.

Table 1: Distribution of study subjects according to age and gender

Variable		Frequency	Percentage
Gender	Males	17	56.7
	Females	13	43.3
Age	≤ 40	3	10.0
	41—50	6	20.0
	51—60	7	23.3
	61—70	7	23.3
	≥ 71	7	23.4

Table 2: Distribution of study subjects based on risk factors

Variable		Frequency	Percentage
Habits	Smoking	7	23.3
	Alcohol and Tobacco	4	13.4
	Tobacco	6	20.0
	Alcohol	1	3.3
	No habits	12	40.0
Co-morbidities	DM	1	3.3
	HTN	6	20.0

BMI	HTN + DM	1	3.3
	HTN + DYSP	16	53.4
	No co-morbid	6	20.0
	Normal	20	66.7
	Over weight	8	26.7
	Obese	2	6.6

Table 2: Distribution of study subjects based on clinical and CT/MRI findings

Variable		Frequency	Percentage
Type of stroke	Ischemic	16	53.3
	Hemorrhage	14	46.7
Side of lesion	Left	14	46.7
	Right	12	40.0
	Bilateral	4	13.3
Site of lesion	Middle cerebral artery	22	73.4
	Multiple	4	13.3
	posterior cerebral artery	2	6.7
	anterior cerebral artery	1	3.3
	Basilar artery	1	3.3
Lobe involvement	Parietal lobe	17	56.7
	Frontal Lobe	6	20.0
	Temporal lobe	4	13.4
	Brain stem	1	3.3
	Corona radiata	1	3.3
	Occipital lobe	1	3.3
Topographical distribution of Hemorrhage	Basal ganglia	8	26.7
	Thalamus	8	26.7
	Internal capsule	7	23.3
	Mid brain	3	10.0
	Corona radaita	2	6.7
	Cortex	1	3.3
	Pons	1	3.3
	Not Applicable	16	53.3
Ventricular extension	No	11	36.7
	Yes	3	10.0

DISCUSSION

Stroke is major public health problem which has a significant morbidities and mortalities. Worldwide, it is the third most common cause of death in adults. Stroke occurs predominantly in males at late years of life. Despite numerous prior studies of stroke, risk factors much remains unknown and several inconsistencies continue to exist. However, the minor differences in the prevalence of stroke risk factors in different communities are probably due to differences in culture, disease patterns, living habits and distribution of various ethnic groups. Various modifiable and non-modifiable risk factors were studied and analyzed in this study.

In this study, each 7 (23.3%) of patients were belongs to the age group of 51—60 years, 61-70 years and ≥ 71 years respectively. Followed by 6 (20.0%) of patients were belongs to the age groups of 41-50 years and 3 (10.0%) of patients were belongs to the age group of ≤ 40 years. The minimum age of the patient was 26 years and maximum age was 86 years. The mean age of patients was 60.17 years. It closely resembled Aiyar et al⁷. study which showed mean age of affected person was 55.39 years. Young stroke (age ≤ 45 years) comprised of 22% of all ischemic stroke patients. Our study closely correlates with study done by P. Chitrambalam et al (20%)⁷. and Gauri et al (19%)⁸.

In the above study males were most commonly affected by stroke It also correlates with study done by Aiyar et al⁷, Pinhero et al⁹ and R P Eapen et al¹⁰ who found the incidence of stroke is more common in males than females.

In the present study it is observed that; Majority of patients 16 (53.4%) had the co-morbid of hypertension and dyslipidemia followed by 6 (20.0%) of patients had the co-morbid of only hypertension and 6 (20.0%) of patients doesn't have any co-morbid. This result correlating with Benerjee TK et al¹¹ study which was conducted in Calcutta on urban population in which systemic hypertension emerged as single most important risk factor.

CONCLUSION AND RECOMMENDATIONS:

The occurrence of stroke rises with age with peak between 46 to 60 years. Young patients (age ≤ 45 years) were 13.33 % of patients which is more dangerous in view of productive year lost. This study showed

male predominance in stroke cases. Cerebral infarct was more than haemorrhage. After hypertension, dyslipidaemia, tobacco chewing, and alcohol intake were associated with stroke patient, So it is strongly recommended that there should be strict control of blood pressure, dyslipidaemia, cessation of tobacco chewing and alcohol intake for prevention of stroke

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