



General Medicine

A RETROSPECTIVE STUDY OF CLINICAL AND RADIOLOGICAL PROFILE OF PATIENTS WITH ACUTE STROKE: GOVERNMENT GENERAL HOSPITAL, MAHABUBNAGAR

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ABSTRACT **BACKGROUND:** Stroke is a disabling disease with significant residual deficits leading to socio-economic loss. It is the second leading cause of death worldwide.

OBJECTIVE: To study the clinical and radiological profile of patients with stroke.

Methods: This is a retrospective study of patients with stroke admitted in medical wards of Government General Hospital, Mahabubnagar from October 2017 to July 2018.

RESULTS: There were 100 patients with stroke. Stroke was most common in the age group of 61 to 70 years with male to female ratio of 1.3:1. The most common clinical manifestation was hemiplegia (49%). The most common type of stroke was ischemic (54%). The most common risk factor was smoking (70%) followed by HTN (55%), alcohol intake (54%), T2DM (45%). The most common site of involvement in patients with ischemic stroke was capsuloganglionic (36%) and in hemorrhagic stroke the most common site of involvement was Thalamus (4%).

Conclusion: Stroke was common in the age group of 61-70 years with male preponderance. Hemiplegia was the most common presentation with ischemic stroke being more common than hemorrhagic stroke. The most common risk factor was hypertension.

KEYWORDS : Stroke, Ischemic stroke, Hemorrhagic stroke, radiological profile of stroke, hemiplegia

INTRODUCTION

Stroke is a devastating and disabling disease with significant amount of residual deficits leading to socio and economic loss. It is defined as an abrupt onset of a neurological deficit that is attributable to a focal vascular cause¹. It is the second leading cause of death worldwide¹. It is estimated to account for 7 to 8 million deaths yearly throughout the world and represents 13% of all causes of death². Some of the recent studies have demonstrated the stroke pattern to a considerable extent in our country with prevalence rate of 471/100000 population³. Recent studies identified that 7% of medical and 45% of neurological admissions were due to stroke with the mortality rate of 9% at the time of discharge and 20% at one month⁴. They caused significant physical, emotional and cognitive disabilities among survivors accounting for 3.6% of total disability associated life years (DALY)².

Several modifiable factors are known to increase the liability to stroke. The most important are hypertension (HTN), Type 2 diabetes mellitus (T2DM), atrial fibrillation (AF), Dyslipidemia and cigarette smoking². Ischemic stroke accounts for 50% to 85% of strokes worldwide⁵. Hemorrhagic strokes are due to subarachnoid hemorrhage (SAH) or intra cerebral hemorrhage (ICH) accounting for 1 to 7% and 7 to 25% of strokes respectively⁵.

In India it comprises of 4% of medical admissions in major hospitals and 20% of diseases of central nervous system (CNS)⁶.

The global burden of diseases studies projects that the total deaths from stroke in India will surpass established market prevalence by the year 2020⁷.

METHODS

This is a retrospective study of 100 cases of acute stroke managed in medical wards and Intensive Care Unit (ICU) of Government General Hospital (GGH), Mahabubnagar, from May 2018 to July 2018. The case sheets of the patients were taken from the hospital records and relevant data was extracted and analyzed. Computed Topography (CT) scan of Brain was done in all the patients.

INCLUSION CRITERIA

All patients above the age of 14 and having clinical and CT confirmed diagnosis of stroke.

EXCLUSION CRITERIA

1. Patients below the age of 14.
2. Stroke due to trauma

3. Patients medical records which were not showing CT confirmed diagnosis.

RESULTS

1. Age distribution

Table 1. Age distribution

Age group in years	Number	Percentage
14- 20	1	1%
21-30	7	7%
31-40	5	5%
41-50	14	14%
51-60	29	29%
61-70	34	34%
71-80	8	8%
81-90	2	2%
Total	100	100%

The age range was from 14 years to 82 years with the mean age 59 years. The youngest patient was 14 years old and the eldest patient was 82 years old. The incidence of stroke was maximum in the age group of 61-70 years which comprised of 34% of total patients as shown in Table 1. Stroke in young (<40years) comprised of 13% of all patients.

2. Gender distribution

Table 2. Gender distribution

Gender	Number	Percentage
Male	57	57%
Female	43	43%
Total	100	100%

Out of 100 patients with acute stroke 57 were males and 43 were females with a male female ratio of 1.3:1 as shown in Table 2. Incidence of stroke was more common in males in the present study.

3. Prevalence of risk factors

Table 3. Prevalence of risk factors

Risk factors	Percentage
HTN	55%
T2DM	45%
Dyslipidemia	40%
Alcohol	54%
Smoking	70%
H/O CAD	28%

As shown in Table 3, smoking (70%) was the most common risk factor followed by HTN(55%), alcohol intake(54%), T2DM (45%) and dyslipidemia (40%).

4. Clinical presentation of stroke

Clinical presentation	Percentage (%)
Hemiplegia	49%
Altered Sensorium	17%
Speech Involvement	14%
Giddiness	3%
Convulsions	12%
Headache and Vomiting	5%

In the present study hemiplegia (49%) was the most common clinical presentation followed by altered sensorium (17%), speech involvement (14%), convulsions (12%) and giddiness (3%).

5. Type of stroke

Gender	Ischemic stroke Number (%)	Hemorrhagic stroke Number (%)
Male	54 (54%)	2 (2%)
Female	38 (38%)	6 (6%)

As shown in Table 5 ischemic stroke (92%) was the most common type. Hemorrhagic stroke was seen in 8% of patients. Ischemic stroke was more common in males whereas hemorrhagic stroke was more common in females.

6. Anatomical location

Site	Ischemic stroke Number (%)	Hemorrhagic stroke Number (%)
Pons	9(9%)	1(1%)
Capsuloganglionic	36(36%)	1(1%)
Midbrain	2(2%)	
Thalamus	22(22%)	4(4%)
Ventricular	1(1%)	1(1%)
Cerebellum	3(3%)	
Frontal	11(11%)	
Parietal	7(7%)	1(1%)
Temporal	1(1%)	
Occipital	1(1%)	
Periventricular	1(1%)	

In the present study the most common site of infarct was in the capsuloganglionic region (36%) followed by thalamus (22%) as shown in Table 6. These findings were consistent with the involvement of Middle Cerebral Artery. The most common site for hemorrhage was thalamus (4%).

DISCUSSION

In the present study the mean age was 59 years with the range between 14 to 82 years. The common age group involved was between 51 to 70 years (63%), which closely resembles the data of other studies done by Praveen kumar et al⁷, Kaliprasanna swain et al⁸, Maskey et al⁹, and Ukoah et al¹⁰ and Aiyar et al¹¹, Naik M et al¹².

The stroke in young accounted for 13% in the present study which was studies done by Praveen Kumar et al⁷, (11%), Chitrabalam et al¹³, (20%).

The male to female ratio was 1.3:1 which was similar to study by Praveen Kumar et al (1.3:1)⁷, Kali prasanna et al (1.7:1)⁸ and Aiyar et al (1.7:1)¹¹.

In the present study the most common clinical presentation was hemiplegia (49%) followed by altered sensorium (17%), speech involvement (14%) which is comparable to the studies done by Praveen kumar et al⁷, (hemiplegia 47%, altered sensorium 14%, speech involvement 17%) and Chitrabalam et al¹³.

In the present study the percentage of patients with smoking (70%) and alcohol intake (54%) was similar to study by Praveen Kumar et al⁷, but more compared to other studies probably due poor socioeconomic background of patients. The presence HTN (55%) correlated with the studies by Praveen kumar et al⁷, (57%), Kali Prasanna et al⁸, (57%) and Abdul Rahman Sallam, Khalid Al-Aghbari. Prevalence of other risk factors were similar to the other studies.

In the present study the most common type of stroke was ischemic

(92%) which is higher compared to studies by Praveen Kumar et al⁷, (77%), Kali Prasanna et al⁸, (70%), Eapen et al¹⁵, (68%), Devichand et al¹⁶.

The incidence of hemorrhage (8%) in the present study was lower compared to other studies done by Praveen kumar et al⁷, (23%), Kali Prasanna et al⁸, (43%), Aiyar et al¹¹, (26%), Eapen et al¹⁵, (32%), Devichand et al¹⁶, (22%).

In the present study the hemorrhagic stroke was more common in females compared to male prevalence seen in other studies.

The anatomical distribution of stroke, both in ischemic and hemorrhagic was comparable to other studies. The most common site of infarction was capsuloganglionic region (36%) and the most common site of hemorrhage was thalamus which was comparable to the studies by Praveen kumaret al⁷, kali prasanna et al⁸, Devi chand et al¹⁶.

CONCLUSION

The occurrence of stroke rises with the age with peak age between 60 to 70 years. The present study showed male predominance in male cases. Cerebral infarction was more common than hemorrhage. Males were more affected than females in ischemic stroke but incidence of hemorrhage was more common in females. Hypertension was the commonest risk factor followed by smoking and alcohol intake. The most common clinical presentation was hemiplegia. We, the physicians need to create awareness among the general public regarding the risk factors which will help in preventing the occurrence of stroke.

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