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Original Article

Study of Clinical Profile of Stroke in a Tertiary Care Centre – A Retrospective Study

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Abstract

Introduction: Cerebrovascular accident (CVA) is a global health problem and the leading cause of mortality and morbidity worldwide. Stroke is the second leading cause of death and the third leading cause of disability across the world. Each year, nearly 6 million people worldwide die from stroke.

Aim: This study aimed to analyze the clinical profile of CVA patients.

Materials and Methods: This prospective observational study was carried out in 30 consecutive patients with CVA. After taking consent, patients were subjected to clinical and laboratory investigation and the results were analyzed statistically and discussed below.

Results: Out of 30 patients, 20 were males, and 10 were females. About 56.7% of patients were above 61 years, followed by 33.3% in 51–60 years. Hypertension and diabetes mellitus are the most common risk factors in the patients. Twenty-two patients had an ischemic stroke, and eight patients had a hemorrhagic stroke.

Conclusion: Developing countries like India are facing a double burden of communicable and non-communicable diseases. Stroke is one of the leading causes of death and disability in India.

Key words: Cerebrovascular accident, Hemorrhagic, Ischemic, Stroke

INTRODUCTION

Stroke is the second leading cause of death and the third leading cause of disability across the world.[1,2] The incidence and prevalence of stroke vary depending on the demographics and habits, and the outcome is dependent on the treatment at their disposal. Stroke, also called a "brain attack" because it involves an acute insult to the brain, is a major disabling disease.[3] Among all neurological diseases of older life, cerebrovascular events rank the first in frequency and importance. Stroke after heart disease and before cancer is the most common cause of death.[4]

In India, community surveys have shown that hemiplegia's crude prevalence rate is in the range of 200/1,00,000 persons, nearly 1.5% of all urban hospital admissions, and 4.5% of all medical and around 20% of Neurologic cases.[5] Atherosclerosis is the most common cause of cerebrovascular stroke. It leads to stroke either by situ stenosis or occlusion or embolizing plaque material to distal cerebral vessels. The mortality rate of stroke in the acute phase is as high as 20%. It remains higher for several years after the acute event in the stroke population than in the general population.[6]

Cerebrovascular diseases include ischemic stroke, hemorrhagic stroke, and cerebrovascular anomalies such as intracranial aneurysms and arteriovenous malformations. 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 factors. Risk factors for cerebrovascular accident (CVA) are divided into modifiable and non-modifiable risk factors. Non-modifiable risk factors include age, sex, ethnicity and geography, and family history of stroke.[7,8] Modifiable risk factors are smoking, alcohol consumption, drug abuse, arterial hypertension

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(HTN), diabetes mellitus (DM), dyslipidemia, and heart disease.[7,9,10]

The poor are increasingly affected by stroke because of both the changing population exposures to risk factors and, most tragically, not being able to afford the high cost of stroke care. The majority of stroke survivors continue to live with disabilities. The costs of on-going rehabilitation and long-term-care are largely undertaken by family members, which impoverish their families.[11] Effective risk factor intervention offers real hope of reducing stroke mortality and morbidity. Due to the increase in the burden of stroke in the coming years and the limited availability of stroke care in India, it would be better to study preventive measures that will help red stroke incidence.[12]

Aim

This study aimed to analyze the clinical profile of CVA patients.

MATERIALS AND METHODS

This prospective observational study was carried out in 30 consecutive patients with CVA. After taking consent, patients were subjected to detailed clinical history, clinical examination, and investigations. Risk factors for CVA such as HTN, diabetes, dyslipidemia and family history of CVA were evaluated. Patients were subjected to a computed tomography (CT) scan of the brain and other relevant investigations about their clinical status. Special investigations suchas magnetic resonance imaging brain, CT angiography, and magnetic resonance angiography were done wherever necessary. The risk factor profile of each patient was evaluated during the hospital stay. Results were analyzed statistically and discussed below.

RESULTS

In this study, 30 patients with stroke have been included. Out of 30 patients, 20 were males, and 10 were females. About 56.7% of patients were in age group more than 61 years, followed by 33.3% in 51–60 years age group [Figures 1-3].

Comorbid and risk factors, 17 patients had DM, 18 patients had HTN, two patients had smoking, and six patients had alcohol.

Fifteen patients had hemiplegia, nine patients had slurring speech, three patients had UMN facial palsy, four patients had altered sensorium, one had convulsions, five patients had a headache, nine patients had vomiting, five patients had giddiness, and 12 patients had the inability to gait [Figure 4].

The stroke type, 22 patients had an ischemic stroke, and eight patients had a hemorrhagic stroke [Figure 5].The topographic of stroke, one patient had an intraparenchymal hemorrhage, two patients had intracerebral hemorrhage (ICH), one had an intraparenchymal and intraventricular hemorrhage, two patients had thalamic infarct, and two patients had a subarachnoid hemorrhage [Table 1].

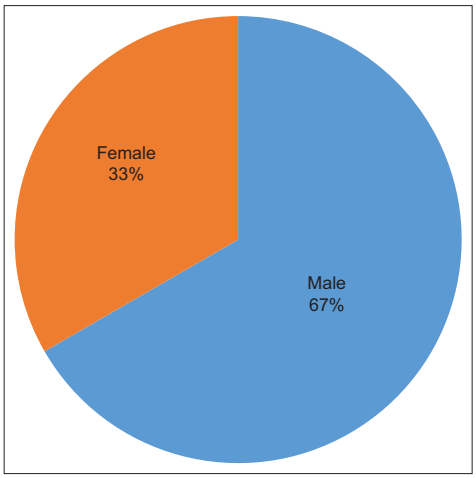

Figure 1: Gender distribution

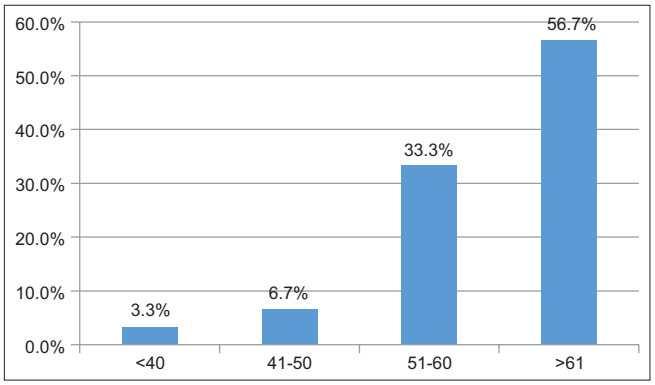

Figure 2: Age distribution

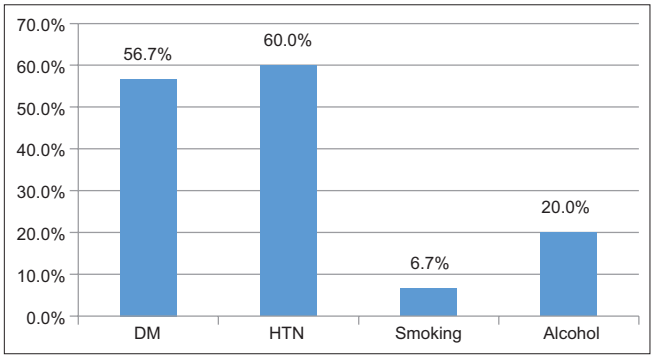

Figure 3: Risk factors

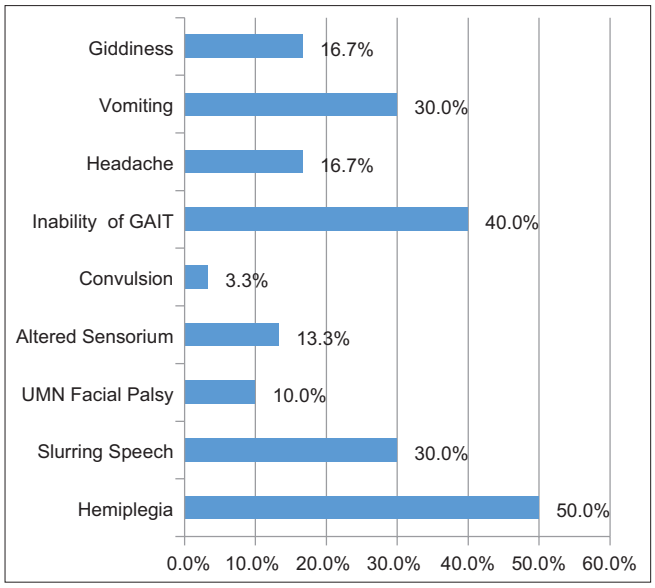

Figure 4: Clinical presentation

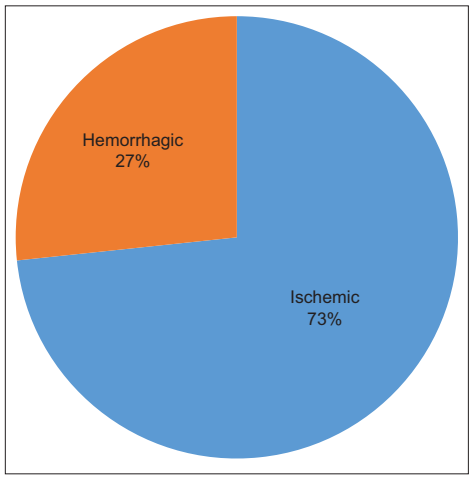

Figure 5: Types of stroke

Table 1: Topographic of stroke

Topographic of stroke	Hemorrhagic	Ischemic
Intraparenchymal Hemorrhage	1	0
ICH	2	1
Intraparenchymal and intraventricular hemorrhage	1	0
Ischemic stroke	0	3
Thalamic infarct	2	3
Non-hemorrhagic infarct	0	1
MCA infarct	0	12
Pontine infarct	0	2
Subarachnoid hemorrhage	2	0

ICH: Intracerebral hemorrhage, MCA: Middle cerebral artery

DISCUSSION

CVA caused 5.7 million deaths in 2005, and 87% of deaths are reported in low- and middle-income countries.[13] It is the second most common cause of death worldwide.[14] Developing countries account for 85% of global deaths due to stroke, and 15%–30% of stroke patients are permanently disabled.[15] In India, a community survey has shown a crude prevalence rate for hemiplegia in the range of 200/100000 persons, nearly 1.5% of all the urban hospital admission, 4.5% of all medical, and around 20% of all neurological cases.[16] In India, the prevalence of stroke various in different regions of the country, and the estimated prevalence is 12–20/1000 in the 75–84 years' age group.[12]

In our present study, most study population were in the age group of above 60 years, which is similar to the study done by Jain *et al.* study[17] and Bhadada *et al.* study,[18] Sharma *et al.*,[19] and Idicula *et al.*[20]

In this study, male predominance was present, and similar findings were observed in Anand *et al.*, Nagaraj *et al.*, and Marwat *et al.*; study.[21-23]

In this study, HTN was the most common risk factor, and similar findings were observed in Marwat *et al.*; and Pandiyan *et al.* study.[21,24] In this study, 17 patients (39%) had DM, which correlates with Sorganvi *et al.*; study.[12]

In our study, subarachnoid hemorrhage was more common. However, studies done by Vaidya and Majmudar and Patne and Chintale reported the most common site of infarction as various lobes of cerebral hemispheres.[25,26]

Hemiplegia was the most common presenting feature, followed by gait inability in the present study, similar to the other studies were hemiplegia which was the most common presenting feature.[25,26]

CONCLUSION

India, like other developing countries, is in the midst of a stroke epidemic. There is a huge burden of stroke with significant regional variations of stroke in our county. Public awareness of the risk factors and their management may lead to the primary prevention of CVA. Early hospitalization of patients and their management reduces the mortality and disability in CVA.

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