



A STUDY ON CLINICAL PROFILE AND RISK FACTORS OF ACUTE STROKE IN UPPER ASSAM, NORTH EAST INDIA

General Medicine

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ABSTRACT

Background: The term stroke is applied to an acute focal neurological deficit that results from decreased perfusion of the brain due to occlusion or rupture of blood vessels supplying the brain. It is the leading cause of mortality and disability worldwide. **Aims:** To evaluate the clinical presentation and to find out risk factors in patients of acute stroke in upper assam area. **Methodology:** The current study was a cross sectional study conducted in Jorhat Medical College and Hospital from June 2021 to May 2022. It includes 120 patients. **Results:** The most common clinical presentation was speech involvement found in 63.3% of the subjects followed by hemiparesis which was seen in 58.3% of the subjects. Various risk factors were studied like hypertension, alcohol, diabetes mellitus, etc among which hypertension was found in 40.8% of the subjects followed by alcohol which was found in 35% of the subjects. **Conclusion:** The study shows that in upper assam area hemorrhagic stroke is more common than infarct whereas in all other parts of India infarct is more common than hemorrhagic stroke. The hypertensive patients had increased severity of stroke, the prognosis of acute stroke could be improved by better control of hypertension, diabetes mellitus, hyperlipidemia and by decreasing alcohol consumption.

KEYWORDS

Stroke, Risk factors, Hypertension, Alcohol.

INTRODUCTION

A stroke, or cerebrovascular accident, is defined as an abrupt onset of a neurologic deficit that is attributable to a focal vascular cause. Thus the definition of stroke is clinical, and laboratory studies including brain imaging are used to support the diagnosis¹.

In India according to Health of the Nation's state report 2017 incidence rate of stroke is 119 to 152 per 1 lakh and case fatality rate of 19 to 42% in the country². The Annual incidence rate of stroke in India as observed in Kolkata, Mumbai, and Trivandrum studies are higher than that in Europe (61-111 per 1 lakh per year) and Australia (99 per 1 lakh per year)¹. Among the adults ages 35 to 44 years the incidence rate of stroke has been shown to range from 30 to 120 per lakh per year and for the 65 to 74 years age group the incidence rate is 670 to 970 per lakh per year³.

The prevalence of hypertension a major risk factor of stroke in indigenous Assamese population and tea garden workers have been reported to 33% to 60.8% respectively⁴.

AIMS AND OBJECTIVES

1. To evaluate the various clinical presentations of acute stroke.
2. To find out the risk factors of acute stroke.

METHODOLOGY

Study Setting –The study was conducted in the Department of Medicine, Jorhat Medical College and Hospital (JMCH), Jorhat.

Study Duration–Study was conducted over a period of one year i.e. July 2021-June 2022.

Study Design: Cross sectional Study.

Sample Size – As per records of JMCH, average 80 number of patients per month meet the inclusion and exclusion criteria for the proposed study. Sample size estimated as 120 using EPITOOLS software under 95% Confidence interval and 10% precision.

Patient Selection:

Inclusion criteria- Acute stroke patients with age more than 18 years including both sexes admitted in Jorhat medical college and hospital.

Exclusion Criteria

– Transient ischemic attack, Pregnancy, Renal failure, Malignancy.

Sampling Technique– Consecutive sampling.

Ethical Clearance- Ethical clearance was obtained from the institutional ethics committee of Jorhat Medical College and Hospital.

Consent: Written and informed consent was taken from all patients.

Study Variables- Fasting and post prandial glucose estimation, serum lipid profile, electrocardiogram, computed tomography of brain (plain/contrast) and magnetic resonance imaging of brain in selected cases.

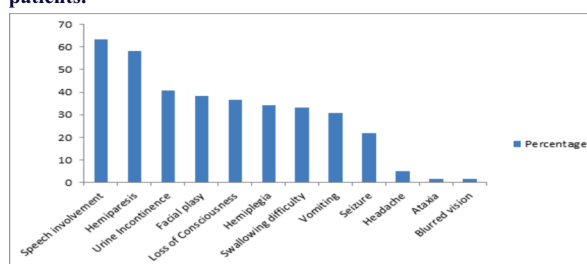
Statistical Analysis: All data were then analyzed using the SSPS (version 27.0; SSPS Inc., Chicago, IL, USA) and Graph Pad Prism 5. Summarization of data has been using mean and standard deviation for numerical variables whereas percentages for categorical variables. The results were obtained in the form of percentage, graphical representation and frequencies.

RESULTS

Table 1: Showing frequency of Clinical features in acute stroke patients.

Clinical Features	Number of patients	Percentage (%)
1.Speech involvement	76	63.3%
2. Hemiparesis	70	58.3%
3.Urine incontinence	49	40.8%
4.Facial palsy	46	38.3%
5.Loss of consciousness	44	36.7%
6.Hemiplegia	41	34.2%
7.Swallowing difficulty	40	33.3%
8.Vomiting	37	30.8%
9.Seizure	26	21.7%
10.Headache	06	05%
11.Ataxia	02	1.7%
12.Blurred vision	02	1.7%

Table 2: Showing distribution of clinical features in acute stroke patients.

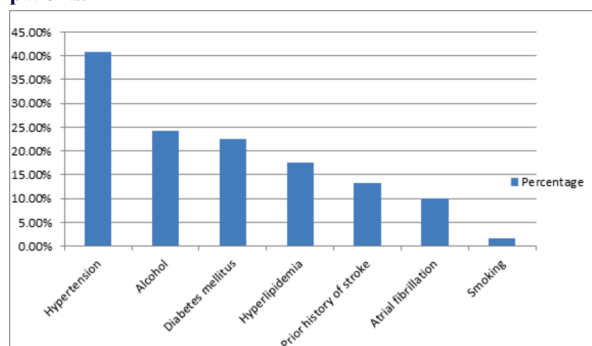


Out of 120 patients, 76(63.3%) patients had speech involvement, hemiparesis was seen in 70(58.3%) patients, urine incontinence in 49(40.8%) patients, facial palsy in 46(38.3%) patients, loss of consciousness in 44(36.7%) patients, hemiplegia in 41(34.2%) patients.

Table 3: showing frequency of risk factors in stroke patients.

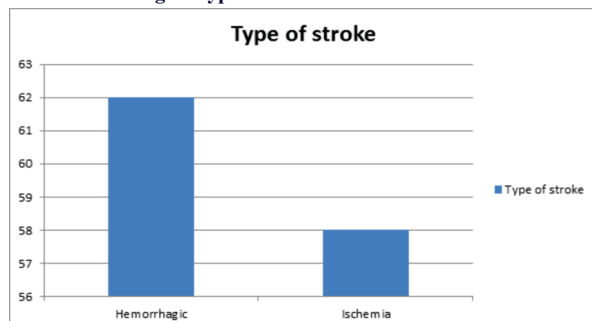
Risk Factors	Number of patients	Percentage (%)
Hypertension	49	40.8
Alcohol	42	35
Diabetes	27	22.5
Hyperlipidemia	21	17.5
Prior history of stroke	16	13.3
Atrial fibrillation	12	10
Smoking	02	1.7

Table 4: Showing distribution of risk factors in acute stroke patients.



Out of 120 patients, hypertension was seen in 49(40.8%) patients, alcohol in 42(35%) patients, diabetes mellitus in 27(22.5%) patients, hyperlipidemia in 21(17.5%) patients.

Table 5: Showing the type of stroke



DISCUSSION

The most common clinical presentation is speech involvement (63.3%) patients followed by hemiparesis in (58.3%) patients. A similar study by **Ginenus Fekadu et al⁸** shows that aphasia was seen in 60.3% patients and hemiplegia in 53.4% patients.

Other clinical presentation which was found in our study are in order as follows are urine incontinence in 49 patients (40.83%), upper motor neuron type facial palsy in 46(38.3%), loss of consciousness in 44(36.7%), hemiplegia 41(34.2%), swallowing difficulty 40(33.33%), vomiting 37(30.8%), seizure 26(21.7%), headache 6(5%), ataxia in 2 patients (1.7%) and blurred vision in 2 patients (1.7%).

In this study out of 120 patients, 62 patients had hemorrhagic stroke and rest 58 patients were having ischemic stroke. Hypertension found to be the single most common risk factor in our study seen in 40.8% patients. This result correlates with the study like **R.P. Eapen et al⁶** where hypertension was seen in 32% patients.

Alcohol is the second most common risk factor in our study seen in 35% patients. Similar study by **Naik M, Rauniyar R.K., Sharma U.K., et al⁹** also found that alcohol intake was associated with stroke in 30.5% patients. Around 22.5% of patients in our study were having Diabetes mellitus which is slightly more as compared to study done by **Maskey et al⁸** which shows 9.3% patients had Diabetes mellitus. The factors which contribute to increased number of diabetes mellitus

patients are alcohol consumption, tobacco use, high carbohydrate diets and high body mass index.

Hyperlipidemia was noted in 17.5% of patients. It correlates with the study done by **R.P.Eapen et al⁶** which shows 17% patients had hyperlipidemia.

In our study prior history of stroke was noted in 13.3% of patients which correlates with study done by **Abdu- Alrhaman Sallam et al⁹** which shows 12.2% patients had prior history of stroke.

Atrial fibrillation was documented in 11.7% of patients in our study. Another study which correlates with our study was done by **James B.W. Russell et al¹⁰** shows 6.1% atrial fibrillation cases.

Smoking was noted in 1.7% of patients in our study which was less as compared to other study done by **Chairu V. Vaidya et al¹¹** 14.2% patients were smoker. The prevalence of smoking had decreased significantly due to significant taxes and raised price, prominent pictorial health warning labels, smoke free policies, population wide tobacco cessation programmes and ban on tobacco industry as well as people awareness and these may be the probable reasons for less incidence of smoking in this study.

CONCLUSION

From the present study it can be reasonably concluded that the overall the most common clinical presentation is speech involvement followed by hemiparesis.

The single most common risk factor is hypertension. The prognosis of acute stroke could be improved by better control of hypertension, diabetes mellitus, hyperlipidemia and also by decreasing alcohol consumption.

As it is a hospital based study and has limitations, further detailed studies involving larger sample size will be required to reveal the overall picture of risk factors to the patients in general.

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