Clinical Profile of Acute Ischemic Cerebrovascular Stroke

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ABSTRACT

Introduction: Stroke is the common cause of severe disability and death worldwide. Study aimed to evaluate etiological, demographic, clinical course and identification of risk factors in acute ischemic cerebrovascular stroke.

Material and methods: A prospective study of 46 patients of Ischemic cerebrovascular stroke conducted at Medical College, Vadodara during January 2014 to November 2014. All Patients were subjected to Personal biodata and detailed clinical assessment with written consent. All were sent for routine blood investigations including Lipid profile, chest x ray PA view, Electrocardiography, 2D Echo and CT Scan. All Data were analysed by using Microsoft excel software.

Results: In our study, most common age group was 55 to 64 yrs (mean age 55.5yrs) with males predominance was observed (52%). Among males, 26 (56.53%) patients were smokers while 18 (39.13%) males were alcoholic. Amongst 46 patients, 55% and 35% found to be hypertensive and Diabetic respectively. 24% Patients had positive family history of Hypertension. In our study, 54.3% had normal serum cholesterol level between 150 to 199 mg/dl while Hypertriglyceridemia and low HDL was found in 17.4% and 26% respectively. Most common documented risk factors for stroke were age, smoking, hypertension and Diabetes Mellitus. Most of Patients presented with limb/motor weakness (86.9%) followed by speech disturbance and loss of consciousness at 41.3% and 34.7% respectively. Hospital outcome was good.

Conclusion: Ischemic stroke entails high socioeconomic burden due to increased morbidity and mortality. Age, Smoking, Hypertension and Diabetes are important atherosclerotic risk factors in our study. Early Identification, treatment and prevention of risk factors can decline the incidence, complications and related mortality. So Physician have a important role in stroke prevention by encouraging the reduction in risk factors.

Keywords: Ischemic Cerebrovascular Stroke, Atherosclerotic Risk Factor

INTRODUCTION

Stroke is defined as rapidly developing clinical signs of focal or global disturbance of cerebral function lasting for more than 24 hours with no obvious cause other than vascular origin. Stroke,also called 'brain attack' because it involves an acute insult to to the brain, is a major disabling disease.[1] Among all neurological diseases of older life, the cerebrovascular events rank the first in frequency and importance. Stroke after heart disease and before cancer is the most common cause of death.[2] In India, community surveys have shown a crude prevalence rate for hemiplegia is in range of 200 per 1,00,000 persons, nearly 1.5% of all urban hospital admissions, 4.5% of all medical and around 20% of Neurologic cases.[3] Atherosclerosis is the most common cause of cerebrovascular stroke. It leads to stroke either by situ stenosis or occlusion or by embolization of plaque material to distal cerebral vessels. The mortality rate of stroke in the acute phase is as high as 20% and it remains higher for several years after the acute event in stroke population than the general population.[4] Early identification of individuals at risk could be of help in Primary Preventive strategies. Current study aimed to evaluate etiological, demographic, clinical course and identification of risk factors in acute ischemic cerebrovascular stroke.

MATERIAL AND METHODS

The Present study was carried out at medicine department, SSG Hospital Vadodara during January 2014 to November 2014 with approval of medicine department and Institutional ethics committe. In this prospective study, 46 cases were enrolled with history and clinical features suggestive of acute ischemic cerebrovascular stroke attending OPD and IPD of SSG Hospital, Vadodara with written informed consent. All patients were enrolled applying inclusion and exclusion criteria.

Inclusion criteria
1) Age> 25 yrs
2) Sex: both male and female
3) First ever in life time acute ischemic stroke
4) CT Scan evidence of infarction within 24 hrs of onset of stroke.

The exclusion criteria
1) Past h/o Transient ischemic attack / Stroke
2) CT scan evidence of haemorrhage or other space occupying lesions other than infarction
3) Trauma
4) Known case of cardiac diseases which could be source of emboli or whose Echocardiogram shown sources of emboli
5) Haematological abnormalities like leukemia, polycythemia or other myeloproliferative diseases.
6) Malignancy
7) Connective tissue diseases.

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8) Systemic infections including meningitis and encephalitis

Detailed history was taken about onset, duration and progress of the symptoms including past and family history especially for stroke risk factors (i.e hypertension, diabetes mellitus, ischemic heart disease and TIA/Stroke).All patients were clinically evaluated for general and systemic examination mainly CNS. All the Patients blood were taken within 24 hrs of stroke with written consent and sent for biochemical analysis and were analysed in our biochemical laboratory using standard analyzer. All blood samples were sent for routine examination(complete hemogram. Urine anlysis,RBS, FBS,PPBS, Renal and liver function tests, lipid profile). The patients were evaluated for presence of additional risk factors: Hypertension (BP>130/85 mm of hg),Diabeters mellitus(random RBS or postprandial blood sugar PPBS >200 mg/dl or FBS >126 mg/dl.), altered lipid profile(CHO >200 mg/dl, TG>150mg/dl, HDL<40 mg/dl) according to NCEP ATP 3 guidelines. History of smoking and alcohol within last 5 years were considered as smokers and alcoholics. The patients with IFG or IGT were not included as diabetics in this study. All patients sent for fundus examination and CT/ MRI Scan. In addition to that E CG, CXR PA View, 2D ECHO cardiography and USG KUB were also done. All data were analysed using Microsoft excel software. Statistical analysis was performed and data analysed in form of mean and standard deviation. T-test was applied to test statistically significant difference in groups. The significance was decided on the basis of p value. Two tailed P value <0.05 were considered significant.

RESULTS

Table 1 shows majority 30.4% respondents were within age group 55 to 64 years followed by 23.9% in 65 to 74 years followed by % in 45 to 54 years.

Table 2 shows that males were 52% while females were 48%.Thus the ratio of males to females was 1.1:1. In present study 24% had positive family history of Hypertension while 4.3% had Diabetes mellitus. No patient had family history of cerebrovascular stroke.

Table 3 shows that 55% patients were hypertensive while 45% were normotensive. Furthermore, present study shows that 35% had DM while majority 75% were non diabetics.

In study, n is 46 as only 26 (56.53%) male patients were smokers and amongst total male 18(39.13%) were alcoholic. So Hypertension, cigarette smoking and Diabetes mellitus were found to be important risk factor for stroke in our study. In my study,54.3% had between 150 to 199 mg/dl while21.7% patients had their cholesterol more than 200 mg/dl. Study also shows that Hypertriglyceridemia and low HDL was found in 17.4% and 26% respectively.

In present study. most of patients presented with limb/motor weakness (86.9%), followed by speech speech disturbance (41.3%) while 34.7% patients presented with altered consciousness.

In our study, 74% patients had hemiplegia, and 10.8% had bilateral motor weakness while monoplegia

Age distribution in years	Frequency	Percentage
25 to 34	2	4.3
35 to 44	5	10.8
45 to 54	11	23.9
55 to 64	14	30.4
65 to 74	11	23.9
75 to 84	2	4.3
>85	1	2.2
Total	46	100

Table-1: Age distribution among the study population

Gender	Frequency	Percentage
Male	24	52%
Female	22	48%
Total	46	100%

Table-2: Gender distribution among the study population

Risk Factor	Frequency	Percentage
Hypertensive	25	55%
Diabetes Mellitus	16	35%

Table-3: Risk Factors among the study population

Addiction	History	Frequency	Percentage
Smoking	Present	26	56.53%
	Absent	20	43.47%
Alcoholism	Present	18	39.13%
	Absent	28	60.87%

Table-4: Smoking and Alcoholism among the study population

Serum Lipid	No. of patients	Percentage
Serum cholesterol (>200 mg/dl)	10	21.7%
Serum Triglyceride (>150 mg/dl)	8	17.4%
HDL (<40 mg/dl)	12	26%

Table-5: Lipid abnormalities among study population

Symptoms	Frequency	Percentage
Headache	5	10.8
Vomiting	6	13
Limb/motor weakness	40	86.9
Altered sensorium	16	34.7
Convulsion	7	15.2
Speech disturbance	19	41.3
Tingling	1	2.1
Vertigo	4	8.7

Table-6: Presenting symptoms among the study population

Limb involvement	Frequency	Percentage
Hemiplegia	34	74
Bilateral	5	10.8
Monoplegia	1	2.1
No motor weakness	6	13
Total	46	100

Table-7: Motor weakness among the study population

and no motor weakness were found in 2.1 and 13% respectively.

DISCUSSION

In present study, total number of 46 patients of ischemic cerebrovascular stroke were studied.The most common documented risk factors for stroke were age,smoking hypertension and Diabetes Mellitus. Age is the most common non modifiable risk factors for the development of stroke.[1] The most common age group was 55 to 64 yrs (mean age 55.5yrs) which correlates with vivek jain et alstudy[5] and Bhadada S et al study[6], sharma et al[18] and idicula et al[19] studies. In our study, males predominance was observed(52%) being the male: female ratio1.1:1. The jukka putaala et al[7,8], tsong hai lee et al[9] and P Nencini et al[10] also observed male predominance in stroke patients which is similar to the present study. In recent years, studies have shown cigarette smoking to be an important risk factor for stroke. The nicotine and carbon monoxide in cigarette smoke damage the cardiovascular system in many ways. Even the use of oral contraceptives combined with cigarette smoking greatly increases stroke risk.Also smoking and Hypertension are multiplicative risk factors.[11] Hypertension is the most common modifiable risk factor for stroke.[13] Furthermore, the present study shows that 25 (55%) were hypertensive and 16 (45%) were normotensive. Similar results were found in millinois et al[12] and tushar patil et al study.[13] Hypertension is the most common modifiable risk factor for stroke.[14] The present study also shows DM among the study population, where (35%) of patients had DM. So Diabetes mellitus ranks second as a risk factor in this study, constitute (35%) of the study population. Similar findings were observed in Jukka putaala et al[7,8], nedeltchev et al[15] and Ruijun et al study[16] (Htn 14%, 12% haddm, 32% smokers, 24% alcohilic).However bhadada et al[6] observed that there was high prevalence of traditional risk factors of stroke among cases. Hypertension, Diabetes Mellitus, dyslipidemia and obesity were 87.7,54.8,87.7 and 56.2% respectively. In our study, majority of patients 54.3% had their serum cholesterol in normal range while serum triglyceride and low HDL was found in 17.4% and 26% respectively.This finding is not consistent with previos studies that have shown positive correlation between Dyslipidemia and stroke.As in india the prevalence of Dyslipidemia may be overall lower than the west as most of our study population belonged to relatively economically deprived class visiting general civil hospital.Also this emphasis the well known fact that many patients of ischemic cv stroke should be treated with statins despite of normal or low cholesterol levels. Addition of statins has lowered risk of stroke even in patients without elevated LDL or low HDL. In current study, most of patients (86.9%) presented with motor weakness followed by speech disturbance and loss of consciousness at 41.3% and 34.7% while only 15.2% had convulsions. Sharma et al[18], appel et al[20] and idicula et al[19] also reported the predominant symptom as motor weakness and speech disturbance. No mortality occurred during entire study period.

CONCLUSION

Despite the advent of treatment of selected patients with acute ischemic stroke with the promise of acute therapies, effective prevention remains the best approach for reducing the burden of stroke. Unfavorable trends in stroke risk factor profile, lack of prevention programmes, lack of awareness of risk factors and warning signals by public and lack of emphasis on preventing training in medical schools, leads to high stroke rates. This is unfortunate as stroke has high prevalence, high burden of illness and economic cost, well defined modifiable risk factors and effective preventive measures. Limitation of study was small number of Patients which can overcome by enrolling large number of population in study research.

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