



## General Medicine

## A STUDY OF STROKE PATIENTS IN SREE BALAJI MEDICAL COLLEGE, CHENNAI

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**ABSTRACT** Stroke, is a devastating & disabling disease with some residual deficit which leads to economic loss. Stroke prevalence rate is 471.58 / 1, 00,000 population in recent Indian studies. Objective of this study was to analyse clinical profile and important facts that contribute to stroke in both sexes. This is a descriptive, retrospective cross-sectional study carried out on acute stroke patients admitted to the SreeBalaji Medical College and Hospital, Chennai. 150 patients were studied over a period of 1 year from June 2017 till May 2018. 62% males and 38% females constituted study population. Among them females were predominant young stroke patients. Only 30.3% of patients were brought to the hospital within 6 hours. 92% patients had GCS score ( $\geq 13/15$ ). Common presentation was hemiplegia. 77% had infarct & 17% had intracerebral haemorrhage (ICH). Risk factors: Type A personality (70%), smoking (61.7%), Alcoholism (45.7%), Systemic Hypertension (61.5%), Diabetes Mellitus (32%), Cardiac disorders (12.5%).Cerebrovascular accidents (CVA) were commonly seen in young females. Type A personality, most important risk factor. Smoking and alcoholism in males and chronic comorbid illness in females was strongly associated with stroke. A holistic approach comprising public awareness, behavioural modification, treating comorbid medical illness is the need of the hour.

## KEYWORDS :

## INTRODUCTION

A devastating and disabling cerebrovascular disease, stroke leads to significant amount of residual deficit leading on to economic loss. It is defined as a rapidly developing signs of focal or global disturbances of cerebral function with symptoms lasting  $\geq 24$  hours, or leading to death with no apparent cause other than vascular origin. It is the 3rd most common cause of morbidity & mortality in the west. Though India is one of the countries lacking sufficient stroke research data, 3 recent studies have explained the stroke pattern to a considerable extent in our country with a prevalence of 471.58/1,00,000 population. Hence this study was done to differentiate various aspects of acute cerebrovascular accident (CVA) patients admitted to the Institute of General Medicine, Sree Balaji Medical College & Hospital, Chennai. Aim is to assess and analyse the epidemiological, clinical & risk factor profile of these stroke victims with particular reference to males and females.

## METHODS AND MATERIALS

This is a descriptive, retrospective, cross sectional study carried out on acute stroke patients admitted to the Institute General Medicine, Sree Balaji Medical College & Hospital, Chennai. Patients admitted for hemiparesis other than CVA were excluded from the study. Sample size was 150 patients. This study was conducted over a period of 1 year during the year 2017-2018. Patient data collection forms were used to collect data on age, sex, educational status, time of occurrence, time lapse, clinical profile and risk factors - chronic medical illness diagnosed / or under treatment for Systemic hypertension (HT), diabetes mellitus (DM), cardiac disorders (ischaemic heart disease, valvular heart disease, atrial fibrillation, cardiomyopathy, congenital heart diseases). Adverse personal habits like Tobacco abuse (smoking, chewing, snuff), alcohol abuse. Personality Types like Type A : Ambitious, aggressive, highly competitive are associated with cardiovascular diseases & Type B who are Apathetic & relaxed.

Statistical analysis was done by Pearson chi square test using SPSS 17.0 version software. Informed consent was obtained from the study patients.

## RESULTS

TABLE 1

Clinical profile	Males n =93	Females n =57
GCS >13/15	90.6%	88.7%
SIDE OF PLEGIA LEFT	52%	43%
RIGHT	38%	56%
TYPE OF PLEGIA- HEMIPLEGIA	88.6%	92%
CRANIAL NERVE INVOLVEMENT	65%	64%
SPEECH- APHASIA/DYSARTHRIA	34%	32%

TABLE 2

RISK FACTORS	MALE	FEMALE
TYPE A PERSONALITY	72%	56%
TOBACCO ABUSE	79%	30%
ALCOHOL ABUSE	76%	1%
SYSTEMIC HYPERTENSION	58%	65%
DIABETES MELLITUS	31%	33%
CARDIAC DISORDERS	11%	14%

TABLE 3

CHRONIC MEDICAL ILLNESS	INFARCTION	HEMORRHAGE
Hypertension	31%	17%
Diabetes and hypertension	21%	32%
Diabetes, hypertension and cardiac	7%	7%
Cardiac	4%	1%
Diabetes	4%	1%
Diabetes and cardiac	2%	1%
Nil	31%	41%

Among 150 CVA patients 62% (n=93) were males and 38% (n=57) were females. percentages of young stroke (< 45 yrs) were common in females. 48% (n=72) of our study population were illiterates, of which 45.8% (n=33) were males and 54.2% (n=39) were females.

With respect to the Golden period of 6 hours, 32% (n=48) patients were brought to the medical attention within this period. 58.3% (n=28) of males and 41.6% (n=20) of females belonged to the above category. 28.2% (n=22) of illiterates and 38.9% (n=28) of literates were brought within the "Golden period". The clinical profile in males and females is shown in Table 1. The various risk factors in males and females is given in table 2.

The pathology encountered in plain computed tomography (CT) brain was infarct in 76% (n=114) and intracerebral haemorrhage (ICH) in 18% (n=27). 73.6% (n=64) of males and 79.4% (n=50) of females had infarction. 19 of males and 8 of females had ICH. The relative distribution of infarction and intracerebral hemorrhage in the various comorbid illnesses is depicted in Figure 2. Out of 9 cases of recurrent CVA, females were 5.

## DISCUSSION

In our study population, 62% of patients were males. As with previous research works, this study also showed a sex ratio with female predominance in young stroke patients. 4,5,6,8,10,12 A prior angiographically proven study reported that 50% of the total cases of stroke in young women were related to pregnancy and puerperium. 13 In our study 23% of young females were in the puerperal period.

CVA patients who receive neurological care within 6 hours of onset of symptoms have a fourfold increased chance of recovery than those treated after this acute period.<sup>7,8</sup> In the study only 32% of patients were brought within 6 hours, predominantly involving males (58%).

Non contrast computed tomography brain is the first imaging modality of choice in CVA patients as it distinguishes acute ICH from cerebral ischaemia.<sup>8,9</sup> In this study, pathological process was evaluated using plain CT-brain and MRI Brain. In accordance to prior studies conducted in India, cerebral infarction was the major pathology encountered (76%) in the study.<sup>10,11</sup>

On comparison between men and women, females had predominantly infarction and males had ICH (table 2). Recent Indian Stroke studies shows that ratio between Infarction : ICH is 2.2:1 (western countries ratio is 5:1).<sup>10</sup> In our study, it is in the ratio of 4.2:1. Identification of risk factors for stroke and awareness of relative importance of each and their interaction carries prime importance in the outcome in both the sexes.

Though innumerable risk factors exist for the occurrence of stroke, the most salient and common ones encountered in our setup and those risk factors whose modification has a great positive impact on the occurrence and outcome of stroke has been considered in this study.<sup>10,14,16</sup> As far as the chronic medical illness is considered, the most common encountered is the systemic hypertension seen in 61.5% of patients, followed by DM -32%) and cardiac disorders (12.5%). Study of pattern of past medical illness in patients with infarct, showed that large number of patients were hypertensives. Whereas in patients with ICH, maximum no. of them had DM and hypertension in combination.

Though tobacco abuse was equal among patients with infarct and ICH, alcohol abuse was more among patients with ICH (in accordance to prior studies). Interestingly 70% of our study population had Type A personality of whom males predominated. In assessing the combination and their effects of risk factors, tobacco abuse and hypertension appear to act synergistically as stroke risk factors<sup>30</sup> which was evident in this study also by the following data – hypertensives who were tobacco abusers were 60% in contrast to 40% of non tobacco abusers. Similar relation with tobacco abuse was also seen in DM and cardiac disorders.<sup>16-22</sup>

In this study chronic medical illness had significant contribution in occurrence of stroke in females as for adverse habits in males. Recurrent CVA was most commonly seen in female patients. As our sample size was limited, statistical significance could not be met in certain areas, still considerable correlations were presented and discussed in our study setup.

## CONCLUSION

Stroke as a disease entity cause significant morbidity and mortality in our country. In the west it is the 3rd most common cause of mortality. In our country figures are fast rising. Stroke in women is a particularly young females with special reference to the puerperal period is a potential area to be explored.<sup>6</sup> Most of the patients with ICH were alcoholics whereas tobacco abuse was equally distributed between Infarction and ICH. This opens new directions to explore the association between CVA pathology and adverse personal habits. Systemic hypertension was the most common factor with contribution by diabetes mellitus and cardiac disorders in both the sexes. Type A personality, a less described variable, was seen in a large number of study subjects which needs further clarification in the future. Thus personal habits in males and chronic comorbid illness in females stroke victims had a strong association with stroke. Therefore the real remedy lies in generating urgent and adequate public awareness on stroke - its causes, symptoms, effects and need for immediate medical attention within golden period of 6 hours from the onset of symptoms so that affected victims can receive early and effective therapy Management of chronic medical illness, the most important risk factor especially in women needs serious attention. Behavioural modification is the key to long term permanent management of stroke in case of substance abuse specifically in males. Thus a holistic approach is the call for demand to accommodate tough challenge of stroke in our country.

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