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SOCIODEMOGRAPHIC STUDY OF POSTERIOR CIRCULATION STROKE SURVIVAL

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Abstract

This was a retrospective observational study carried out in Medicine units of Bangabandhu Sheikh Mujib Medical University, BIRDEM Hospital, Mitford Hospital and Dhaka Medical College Hospital from January to June 2007 with aims and objectives to evaluate the sociodemographic status of stroke survival. 100 stroke patients of either sex aged 45 years and above who had first ever or recurrent posterior circulation stroke verified by CT scan / MRI of brain were included in the study. Maximum strokes were found between the ages 65 to 74 years. The Male female ratio was 1.44: 1. Among the occupational category of the studied patients housewives were 40.1%, cultivator (15%), elderly persons (12%) and businessman (10%). Study revealed haemorrhages in 38% of patients and 62% patients had infarction.

Key words : Stroke; posterior circulation; sociodemgraphy

Introduction

Stroke is defined as the clinical syndrome of rapid onset of cerebral deficit (usually focal) lasting more than 24 hours or leading to death with no apparent cause other than a vascular one[1]. Different combination of focal deficits can define several stroke syndromes such as total anterior circulation syndromes, partial anterior circulation syndromes, pure motor stroke and posterior circulation syndrome[2].Twenty to twenty five percent of ischemic events involve tissue supplied by the posterior circulation i.e. vertebrobasilar system. Dizziness, vertigo, headache, vomiting, double vision, loss of vision, ataxia, numbness and weakness involving both sides of the body are frequent symptoms and limb weakness, gait and limb ataxia oculomotor palsies and or pharyngeal dysfunction are most common signs of vertebrobasilar insufficency[3]. Cerebellar, pontine and other brain stem ischemia/ hemorrhage are common in posterior circulation stroke[4].

Over the past two decades, findings of randomized trials have shown that several intervention are effective in both the primary and secondary prevention of stroke and currently available preventive strategies could reduce stroke incidence by as much as 50-80%[6]. So, knowledge of socio demographic study of stroke survival will further strengthen our preventive strategies.

Materials and methods

This study was carried out in one hundred stroke patients, admitted in medicine units of Bangabandhu Sheikh Mujib Medical University, BIRDEM Hospital, Mitford Hospital and Dhaka Medical College Hospital from January 2007 to June 2007 to identify the spectrum of risk factors of posterior circulation stroke. Aims and Objectives was to identify sociodemographic pattern of posterior circulation stroke patients (age, sex, occupation)

Inclusion criteria

All patients of either sex 45 years and above who had first ever or recurrent posterior circulation stroke verified by CT scan/ MRI of brain.

Exclusion criteria

The following patients were excluded from the study that had.

- Stroke<45 years.
- Stroke of anterior circulation territory
- Stroke of dual supply area of brain (e.g. thalamus, basal ganglia)
- Subarachnoid haemorrhage
- Transient ischemic attack
- Syncopal attack.
- Presumptive diagnosis of posterior circulation stroke but no lesion on MRI of brain.

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- Neurological deficits secondary to neoplastic or epilepsy or head injury or an infective etiology.
- Pre-existing severe physical or cognitive disability.

Patients admitted in previously mentioned hospitals were initially recorded according to the case record profile of the respective institution by the medical professionals of these institutions who had given their kind verbal consent to help conduction this study. The reported posterior circulation cases as verified by CT scan/ MRI brain were recorded according to the questionnaire of this study. After taking a verbal consent from the patients/ relatives, a detailed history was taken and a thorough physical examination (including cardiovascular and neurological) was performed. Qualitative variables were analyzed by finding their frequencies and percentages.

Results

Maximum strokes were found between the ages 65 to 74 years. The mean age was 66.23+ 11.8 years (Table-I). The Male female ratio was 1.44: 1 (male 59: female 41) (table-II). Sex ratio in the different age group was clearly approximated to the above value, except the age group of more than 85 years where the ratio was 1.67: 1 (Table III). Among the occupational category of the studied patients affected female patients were housewives 40.1%, Cultivator (15%), elderly persons (12%) and businessman (10%) were the other common victim of posterior circulation stroke (Table IV). CT scan/ MRI evaluation of the stroke patients of this study revealed haemorrhages in 38% of patients and 62% patients had infarction (Table V).

Table I : Age distribution of the posterior circulation stroke patients (n=100)

Age	Number of Patient	Percentage (%)	Mean with SD
45-54	05	5	66.23± 15.8
55-64	20	20	
65-74	38	38	
75-84	29	29	
≥ 85	08	8	

Table II : Sex distribution of the patients (n=100)

Sex	Number of Patient	Percentage (%)
Male	59	59
Female	41	41
Male Female ratio	1.44 : 1	

Table III : Sex ratio in the different age group of the studied patients (n=100)

Age Group (year)	Male	Female	Sex Ratio
45-54	3	2	1.5 : 1
55-64	12	8	1.5 : 1
65-74	22	16	1.37 : 1
75-84	17	12	1.45 : 1
≥ 85	5	3	1.67 : 1

Table IV : Occupation of patient (n=100)

Occupation	Number of Patient	Percentage (%)
Business	10	10
School teacher	5	5
Service holder	9	9
House wife	41	41
Cultivator	15	15
Worker	4	4
Elderly persons	12	12
Others	4	4

Table V : Types of stroke (n=100)

Type	Number of Patient	Percentage (%)
Ischaemic	62	62
Haemorrhagic	32	32

Discussion

Despite all newer and modern intervention, identifying the clinical patterns and the risk factors to control or modify them remain the most important means of reducing the incidence of stroke [5]. Although some determinants of stroke, such as age, gender, race, ethnicity and heredity cannot be modified, they need to be considered in the patient assessment [1].

Increasing age is clearly the strongest determinant of stroke each year. In this study of posterior circulation stroke age of incidence was between 66.23 ± 15.8 year (Table 1). Men were at a somewhat greater risk for stroke than women but difference was small (male: female-1.44:1) (Table II). This observation was similar to that of study done on posterior circulation stroke in Korean population where the mean age was 63.4 years and male female ratio was 1.26:1[6]. In our country a similar study was done on stroke patients and found the sane age incidence of stroke between 5th to 7th decade[7]. This study showed only 8% cases were above the age of 85 years. This finding contradicted with the study conducted by WHO Task Force in the western population where the peak age of incidence of stroke was 85 years. This discrepancy with the

present study may be due to the reduced life expectancy in our country which is much less than that of the study group population of WHO [8]. Another study done of western population in London in 1990 showed that male suffer more than female (Male female ration was 1.5:1)[9]. This observation is closely approximated to the result of this study (male female 1.44:1) (Table III). But the study done on stroke patients of Bangladesh on 1975[10] showed a gross difference in male female ratio (4:1) with a higher male predominance. The present study result (male: female 1.44:1) might reflect the positive attitude and awareness of the society towards female and the availability of the hospital management to the female patients. However a recent study (TOAST) done on 2001 showed a smaller female incidence among posterior circulation stroke patients than that of anterior circulation stroke[11].

In this study most dominant stroke type was infarction 62% and hemorrhage was present in 38% of cases. In the hemorrhagic variety cerebellar haemorrhage was more (20%) and in the infarction category brain stem infarction was more (35%) (Table IV). The reported result of ischaemic frequency (62%) was less than the observation (80%) of the above mentioned journal report[12]. As the short term mortality of haemorrhagic stroke are more, the haemorrhagic stroke patients are admitted in hospitals in more numbers than ischaemic type, hence ischaemic events in the admitted patients are not of that frequencies as found in population based cohort study. Another cause of high incidence of haemorrhagic stroke in the hospital based study in our community may be due to very rapid onset deep coma, vomiting and convulsion in haemorrhagic stroke which may lead to emergency admission in the hospital in more number. Increased number of haemorrhagic stroke in hospital based study needs further evaluation and extensive study.

On the occupational basis (Table V) elderly persons (12%), cultivators (13%) among male population and housewives (41%) in female category were most commonly found affected in this study. Number of elderly persons affected (12%) simulated with that of Basher study in 1995 where elderly person were 16%31. In most of he developed countries, elderly persons mostly affected are > 65 years [8]. There was increased number of housewives seen affected in this study which demands special attention to search for the cause and risk factors. As this age group of female in our country are in the category of housewives, stroke in this middle aged and elderly female will occur reasonably in higher frequency.

Conclusions

Stroke contributes to have a great impact on public health. Socio demographic profile of the present study emphasizes deep concern about elderly persons and cultivators of our country those who need special attention for stroke prevention. Housewives should not be neglected searching cause and risk factors of this disabling disease and should have public health priority. Knowledge of socio demographic factors of stroke is necessarily a concern of the preventive and management strategy of stroke. Further study in this respect is highly recommended.

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