

Clinical Profile of Stroke Patients Attended in a Tertiary Care Hospital- Study of 219 cases

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Abstract:

Background: Stroke is serious pathology with a immense impact on the functional and vital prognosis. It is the leading cause of death worldwide. The objective of the study was to observe clinical profile of stroke patients and important risk factors. Methods: It was a cross-sectional descriptive study conducted in the department of Neurology, Bangabandhu Sheikh Mujib Medical University (BSMMU), Shahbag, Dhaka from August 2014 to November 2015. All patients above 18 years of age and both sexes attending the above mentioned department meeting all inclusion and exclusion criterias and confirmed CT/MRI scan of Brain were included in this study. Results: A total of 219 patients were studied. Maximum 93(42.5%) patients were in age group of 61-70 years followed by 51(23.3%) and 30(13.7%), in the age group of 51-60 years and 71-80 years respectively. Male 138(63%) were predominant than female 81(37%). 78(35.61%) patients had weakness in both sides of the body, 66(30.1%) had weakness in the left side and 36(16.4%) had weakness in the right side of the body. 190 (87.7) patients had ischemic stroke and 29(12.3%) had hemorrhagic stroke. Among risk factors dyslipidemia was in 185(84.5%) patients, hypertension, smoking habits, diabetes mellitus and ischemic heart disease were present in 165(75.3%), 120(54.8%), 105(47.9%) and 42 (19.2%) patients respectively. H/O recurrent stroke was present in 55(25%) cases. Conclusion: Stroke cases were male predominant where dyslipidaemia was the most common risk factor, most common type of stroke was ischemic, most common presentation was hemiplegia/monoplegia and commonest age of presentation was seventh decade.

Introduction:

Stroke is a devastating and disabling cerebrovascular disease with significant amount of residual neurological deficit leading to great economic loss. It has been defined as a rapidly developing signs of focal (or global) disturbance of cerebral function with symptoms lasting for ≥ 24 hours or leading to death with no apparent cause other than vascular origin¹. It is a collection of clinical syndromes resulting from cerebral ischemia or hemorrhage. In the west, it is the 3rd most common cause of mortality and commonest cause of morbidity among the elderly persons². Some of the recent studies have found that the stroke prevalence is of considerable extent in this

subcontinent³. A recent study identified that 7% of medical and 45% of neurological admissions were due to stroke with a fatality rate of 9% at hospital discharge and 20% at 28 days⁴. Dyslipidemia, hypertension, smoking and diabetes mellitus are the common causes of stroke among the elderly,⁵ and smoking, dyslipidemia, increased BMI, diabetes mellitus and hypertension are significantly associated with strokes among young people⁶. Ischemic strokes account for 50-80% of all strokes worldwide⁷. Hemorrhagic strokes are due to subarachnoid hemorrhage or intracerebral hemorrhage. They account for 1-7% and 7-27% respectively of all strokes worldwide⁸. Recently Bangladesh Bureau of statistics has estimated that

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the number of strokes has increased significantly and it occupies the number one position (16.4%) of mortality among elderly persons, ischemic heart disease being the 2nd (12.6%) and respiratory tract infection being the 3rd (11.4%).⁸ The global burden of disease study also projects the similar findings worldwide by the year 2020.¹⁰ Hence this study was undertaken in our setup to study various aspects of stroke which will help young physicians to deal with this deadly and disabling disease.

Materials and methods:

It was a cross-sectional descriptive study conducted in stroke clinic, In-patients and out-patients department of Department of Neurology, Bangabandhu Sheikh Mujib Medical University (BSMMU), Shahbag, Dhaka from August, 2014 to November, 2015. All patients above 18 years of age and both sexes attending the above mentioned department meeting all inclusion and exclusion criteria were included in this study. Total 219 consecutive patients were selected on the basis of history, clinical examination and findings of CT or MRI scan of Brain. The following information's were collected from each patient- age, sex, occupation, educational status, past history of stroke, hypertension, diabetes mellitus, coronary artery disease, family history of stroke, current or previous history of smoking, alcohol consumption, tobacco chewing, dietary history and others. Examination findings including hemiplegia/monoplegia, dysphasia/dysarthria, pulse, BP, carotid bruit, cardiac murmur etc were noted. Fasting serum lipid profile, blood sugar, S. Creatinine, S. electrolytes, ECG, eco-cardiogram, X-ray chest and relevant other investigations were done. Data analysis was done by using SPSS (statistical package for social science) soft ware version 18. Results were expressed in frequencies and percentages.

Selection Criteria:

Inclusion criteria: All patients clinically diagnosed as first or recurrent stroke (ischemic or hemorrhagic) confirmed by CT/MRI scan of Brain, age 18years or above and of both sexes.

Exclusion criteria: Patients less than 18years of age, advanced medical conditions (acute myocardial infarction, left ventricular failure, end

stage renal disease, malignancy etc), metabolic and toxic states resembling stroke and patients unwilling to participate in the study.

Results and observations:

Table-I

Distribution of patients according to age (n-219).

Age	Frequency	Percentage
d"40	9	4.1
41-50	21	9.6
51-60	51	23.3
61-70	93	42.5
71-80	30	13.7
>80	15	6.3
Total	219	100.00

Table-I: Shows most of the Patients were above 50 years of age. Maximum 93(42.5%) patients were in the age group of 61-70 years, followed by 51(23.3%) and 30 (13.7%) in the age group of 51-60years and 71-80years respectively.

Table-II

Distribution of Patients according to gender (n-219).

Gender	Frequency	Percentage
Male	138	63.0
Female	81	37.0
Total	219	100.0

Table-II: Shows distribution of patients according to gender. Male 138(63%) were predominant than female 81(37%). Male female ration was 1.7:1

Table-III

Distribution of patients according to educational status (n-219)

Education	Frequency	Percentage
Illiterate	27	12.3
Primary	66	30.1
Secondary	63	28.8
Higher Secondary	42	19.2
Graduate & above	21	9.6
Total	219	100.0

Table-III Shows distribution of patients according to educational status. Maximum 66(30.1%) patients completed their primary education followed by 63(28.8%) and 42(19.2%) patients completed their secondary and higher secondary education respectively.

Table-IV
Distribution of patients according to occupation (n-219)

Occupation	Frequency	Percentage
Housewife	48	21.9
Service holder	39	17.8
Business	12	5.5
Others	120	54.8
Total	219	100.0

Table-: IV. Shows distribution of patients according to their occupation. Forty eight (21.9) patients were house-wife, 39(17.8%) were service holder and 120(54.8%) patients had miscellaneous occupation.

Table-V
Distribution of patients according to weakness of part of the body (hemiplegia/monoplagia)(n-219).

Hemiplegia/monoplagia	Frequency	Percentage
Right	36	16.40
Left	66	30.13
Bilateral	78	35.61
No	39	17.8
Total	219	100.00

Table-V. Shows distribution of patients according to hemiplegia/monoplegia. Among them 78(35.61) patients had bilateral hemiplegia, 66(30.13%) had left sided and 36(16.40%) patients had right sided hemiplegia.

Table-VI
Distribution of patients according to type of stroke (n-219)

Stroke type	Frequency	Percentage
Ischemic	190	87.7
Hemorrhagic	29	12.3
Total	219	100.0

Table-: VI. Shows distribution of patients according to type of stroke. 190(87.7%) patients had ischemic and 29(12.3%) patients had hemorrhagic stroke.

Table-VII
Distribution of patients according to risk factors(n-219)

Risk factors	Frequency	Percentage
Dyslipidemia	185	84.5
Hypertension	165	75.3
Smoking habit	120	54.8
Diabetes mellitus	105	47.95
P/H/O stroke	55	25.1
Ischemic heart disease	42	19.2
Alcohol	12	5.5
Rheumatic Heart disease	03	1.4

Table-: VII. Shows distribution patients according to risk factors. Here dyslipidemia (84.5%), hypertension (75.3%), smoking habit (54.8%) and diabetes mellitus (47.95%) were the common risk factors.

Table-VIII
Distribution of patients according to clinical presentation(n-219)

Clinical Features	Frequency	Percentage
Altered sensorium	31	14.15
Instability of gait	15	6.85
Convulsions	18	8.22
Speech involvement	62	28.31
Headache	05	2.28
Vomiting	25	11.41
Hemiplegia/monoplegia	180	82.19

Table-VIII Shows distribution of patients according to clinical presentation. Hemiplegia/monoplegia 180 (82.19%), speech involvement 62(28.31%) and altered sensorium 31(14.15%) were the common presentations.

Table-IX
Gender wise distribution of different types of stroke (n-219)

Gender	Ischemic	Hemorrhagic	Total
Female	70(32%)	11(5%)	81(27.00)
Male	120(54.8%)	18(8.2%)	138(63.0)
Total	190 (86.77%)	29(13.3)	219(100)

Table-: IX. Shows gender wise distribution of patients according to different types of stroke. Here among 190(86.77%) ischemic stroke patients 120(54.8%) were male and 70(32%) were female. And among 29(13.3%) hemorrhagic stroke 29(13.3%) patients 18(8.2%) were male and 11(5%) were female. So, in both types of stroke male is predominant than female.

Discussion:

In this study it was observed that mean age of stroke patients was 67.5±42.5 years which correlates with study done by Chirayu et al(mean age 64years)⁹, Maskay et al (mean age 63 years)¹¹ and Awad et al(mean age 63.66years)¹². The common age group was in between 61-70years (42.5%) which correlated with the studies done by Upoha et al¹³, and Maskey et al¹¹. Young stroke (age<50years) comprised of 13.7% of all patients which closely correlated with study done by Sallam et al (13.6%)¹⁴ and Gauri et al (19%)¹⁵. Among stroke patients males 138(63%) were predominant than females 81(37%). Male female ration was 1.7:1. Stroke is male predominant disease shown in different studies in Bangladesh¹⁶⁻¹⁸. They found M:F ratio 2.75:1, 2.53:1 and 3.44:1 respectively. This study also shows both ischemic & hemorrhagic strokes are male predominant [Ischemic-male 120(86.77%), female 70(32%); hemorrhagic-male 18(8.2%) and female 11(5%)], which also correlated with another study done abroad⁹. In this study out of 219 patients, 120(54.8%) were either current

smoker or ex-smoker and 99(45.2%) were non-smoker. In another two studies done in this country showed 39.5% and 44% stroke patients were smoker respectively^{16,19}. Regarding hemiplegia/monoplegia 78(35.61%) patients had weakness in both sides of the body, 66(30.13%) patients had weakness on his left side and 36(16.4%) had weakness in right side of the body. This observation closely correlates with the study done in India by Chitrabalam et al (hemipegia <45years 93.3%, in >45years 89.2%)²⁰.

In this study common risk factors correlated with the study done both in home and abroad. Dyslipidaemia was present in 185(84.5%) patients, HTN in 165(75.3%), smoking habit in 120(54.8%), DM in 105(47.95%) and IHD in 42(19.2%) patients respectively. H/O recurrent stroke was found in 52(25.1.25%) cases. This observation correlates with the study of Sarker, 2015(found dyslipidemia in 53.75%, HTN in 60%, DM in 27.5%, IHD in 11.3% and recurrent stroke in 20% cases)¹⁸ and HTN in 58.6%, DM in 32.1%, in khan;2000¹⁶ and HTN series in 65% and DM in 21% ullah et al 1993¹⁹ series. This study shows 190(87.79%) patients had Ischemic stroke and 29(12.3%) had hemorrhagic stroke. This data correlated with studies done in home and abroad. In studies done by Aiyar et al²¹ shows infraction in 70% and hemorrhage in 26% cases. Eapen et al⁵ showed infraction in 68% and hemorrhage in 32% cases. Regarding clinical presentation 180(82.19%) patients had hemiplegia, 62(28.3%) patients had speech involvement and 31(14.15%) cases had altered sensorium which also correlates with the studies in home & abroad^{9, 16, 19}.

Conclusion:

In this study it was found that ischemic stroke (87.7%) was more common than hemorrhagic stroke (12.3%). Most of the patients (42.5%) were in between 61-70 years of age. Dyslipidemia was most frequent among risk factors (84.5%), followed by HTN(75.3%), smoking habit (54.8%), DM (47.9%). H/O recurrent stroke (25%), IHD (19.2%). Most common clinical presentation was hemiplegia/monoplegia followed by speech involvement.

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