



Original Article

Presentation and Risk Factors of Ischaemic Stroke Patients

MN Islam¹, MN Huda¹, SKM Afzal¹,
MK Rahman², Khan MMR², BP Moni³, ARMS Ekram⁴

Abstract

Stroke is the third most common cause of death and is the main cause of neurological disability today. This is an observational study conducted at the department of Medicine, Rajshahi Medical College Hospital, Rajshahi, to observe the risk factors of ischaemic stroke and their presentation during hospital admission. Fifty patients of stroke with cerebral infarction confirmed by CT scan of brain were included. Hypertension (74%), diabetes (42%), overweight (22%), alcoholic (12%), past history of stroke (10%), previous history of TIA (16%), Carotid bruit (20%) and hypercholesterolemia (48%) were found as risk factors. Hemiplegia (96%), facial weakness (34%), deglutition problem (38%), speech difficulty (60%) and coma (14%) were observed during hospitalization.

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Introduction

Stroke is the commonest cause of single organ death above the age of 40 years worldwide.¹ There are quite a number of known modifiable risk factors of stroke, proper control of which plays an important role in primary prevention of the disease. The most important risk factors of stroke are hypertension, heart disease, atherosclerosis, dyslipidaemia particularly low-density lipoprotein (LDL) cholesterol and diabetes mellitus. Dyslipidaemia and atherosclerosis have got important associations between them.²⁻⁴ Various cross-sectional and prospective epidemiological studies have identified many risk factors for stroke but in our country, the exact situation of these risk factors are not studied. Therefore, this study was performed among Bangladeshi patients with ischaemic stroke to observe the presentations and risk factors.

Material and Methods

This descriptive cross sectional study was carried out on 50 consecutive admitted patients, age between 40 to 90 years, presented within 48 hour of symptom onset of stroke. Stroke was defined according to WHO criteria.⁵ Ischaemic stroke was confirmed by clinical examination and CT scan of brain. Fasting (at least 12 hours) blood sample was taken from each patient for lipid profile, blood sugar and other relevant investigations. Carotid duplex ultrasound scanning was done in all patients using a Siemens ACUSON CV-70 ultrasound scanner with a 7.5 MHz transducer. Dyslipidaemia was assessed by raised fasting serum cholesterol >200 mg/dl, LDL>130 mg/d, TG >150 mg/dl and HDL <40 mg/dl (NCEP-2001).⁹

¹ Assistant Professor, Department of Medicine, Rajshahi Medical College.

² Associate Professor, Department of Medicine, Rajshahi Medical College.

³ Resident Physician, Department of Medicine, Rajshahi Medical College.

⁴ Professor, Department of Medicine, Rajshahi Medical College.

Results

Among fifty (50) patients of cerebral infarcts, forty (80%) patients were male and ten (20%) were female. Male female ratio was 4:1 (Table-I). Age of presentation was of varying range from 40-90 years. Majority of the subjects presented at sixth to seventh decade of life and mean age of the patients were 61.72 ± 11.31 years. Most of the patients (52%) came with weakness of right side of body and 44% patients came with left sided body weakness. Seventeen (34%) patients presented with facial weakness, nineteen (38%) with deglutition problem and thirty (60%) patients with speech difficulty. Seven (14%) patients were found in coma, fifteen (30%) were drowsy, eleven (22%) were in semiconscious and seventeen (34%) were conscious at their presentation (Table-I). Carotid bruit was present in ten (20%) cases. Thirty four (68%) cases were smoker but none of them was female (Table-I). Thirty seven (74%) cases were hypertensive. Systolic blood pressure (≥ 140 mm of Hg) were present in thirty seven (74%) and diastolic blood pressure (≥ 90 mm of Hg) were present in twenty one (42%) patients (Table-I). Thirty four patients gave history of previous hypertension and remaining cases were newly diagnosed. About twenty one (42%) cases were diabetic, eleven cases (22%) were overweight, five (10%) cases had a past history of stroke, eight (16%) cases having previous history of TIA and six (12%) cases were alcoholic (Table I). Twenty four (48%) cases showed hypercholesterolemia, twenty (40%) cases showed abnormal TG-cholesterol, thirty nine (78%) cases showed high LDL-cholesterol and thirteen (26%) cases showed low HDL-cholesterol.

Discussion

The risk of stroke increases with age.⁶ And the majority of the subjects in this study were in between sixth and seventh decade of life and their mean age 61.72 ± 11.32 years (Table-1). Iqbal et al.⁷ and Victor and Ropper⁸ also showed similar age statistics (mean age 60.8 ± 13 yrs.) in their study patients. In this study, the male female ratio was 4:1 (Table-1). Male involvement was much higher than female which was almost similar to the findings Haque A et al.⁹ Hypertension is a well

established risk factor for cerebral infarction.¹⁰ In this study 74% of stroke patients were hypertensive of which 68% were diagnosed before stroke events and 8% were newly diagnosed during admission. Moazzam AA¹¹ found 72% hypertensive patients in his study. Mohammad et al¹² reported two third of 1020 ischemic stroke patients as hypertensive. In present study diabetes mellitus was seen in 42% of cases of cerebral infarction. Ullah AKMA et al¹³ showed 30% diabetes and Sarker T K et al¹⁴ showed 33.3% diabetes among the stroke patients. This results are consistent with the study conducted by Karapanyiotides et al¹⁵ who showed 39.8% diabetes. Diabetes increases three fold risk of developing stroke than non diabetic population and the relative risk is highest in 5th and 6th decade of life. Patients with diabetes have increased susceptibility to thromboembolism and 40% of the diabetic patients have hypertension as well. In the present study, 68% stroke patients were smoker. This is comparable with a study done by Ullah AKMA et al.¹⁶ They showed 59.84 percent smoker. The contribution of cigarette smoking increases the risk of stroke. Obesity as a risk factor for cerebral infarction and was found in 22% of patients which is near consistent with Saffer P¹⁷ who found 15% overweight among the stroke. In this study, history of TIA was found in 16 percent of the patients. Holdworth et al¹⁸ showed history of TIA 17 percent in his study.

Hypercholesterolemia was found in 48% patients. Saffer M.¹⁷ reported 30% hypercholesteremic patients in their study. Hypercholesterolemia leads to rapid atherosclerosis and risk of cardiac and cerebral ischaemia. Elevated levels of total cholesterol, triglyceride and LDL-cholesterol are related to increased risk of stroke which corroborate with the western studies.¹⁸ Serum lipids are important risk factors for ischaemic stroke. It is a modifiable risk factor. So, by changing lifestyle, diet and taking regular physical exercise and losing weight in case of overweight, we can reduce the risk of dyslipidaemia.

Conclusion

Risk factors modification and lifestyle changes can reduce the incident of stroke. Early detection of

variable presentations stroke and risk factors stratification may ensure the favorable outcome of stroke.

Table-I: General characteristics, presentation and risk factors of the patients (n=50)

Character	No. of patients	Percent (%)
Age (Yrs)	61.72 ±11.31	--
Male: Female	4:1	--
Weakness of body		
Right side	26	52%
Left side	24	48%
Level of consciousness		
Coma	7	14%
Drowsy	15	30%
Semiconcious	11	22%
Conscious	17	34%
Facial weakness	17	34%
Deglutation difficulty	19	38%
Difficulty in speech	30	60%
Smoking	34	68%
Hypertension	37	74%
Diabetes mellitus (FBS)	21	42%
Hypercholesterolemia	24	48%
Past H/O stroke	5	10%
Past H/O TIA	8	16%
History of Alcoholism	6	12%

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All corresponds to
Dr. Md Nurul Islam
Assistant Professor
Department of Medicine
Rajshahi Medical College
E-mail: nuruldr07@gmail.com