

ORIGINAL RESEARCH

Evaluation of Clinical Features and Risk Factors Among Stroke Patients: A Hospital Based Study

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ABSTRACT

Introduction: Identification of risk factors for stroke as well as awareness of relative importance of each, and of their interaction should facilitate stroke prevention. The understanding of stroke in a clinical setting is pivotal to create awareness among masses to prevent the burden of vascular diseases as well as to educate people regarding modifiable and non-modifiable risk factors. Hence, the present study was conducted to reveal signs, symptoms, and risk factors of stroke in patients with this condition.

Materials and Methods: The current cross-sectional observational study comprised of 100 patients who were diagnosed as stroke cases. The clinical profile of all enrolled patients was noted as per the proforma. Relevant clinical history was taken, and laboratory investigations was carried, and lipid profile was studied. CT scan of brain was conducted. For statistical analysis of the study, χ^2 with $k < 0.5$ and a p -value < 0.01 was considered as significant value.

Results: In this study 4% cases of stroke were below 40 year, 16% cases in age 40-50 years, 27% in 51-60 years, 34% in 61-70 years, 15% in 71-80 years, 3% in 81-90 years, 1% in 91-100 years. Regarding clinical symptoms, 62% patients present with right hemiplegia, 38% patients presented with left hemiplegia, 48% patients present with cranial n palsy, 30% present with altered sensorium. 55% patients had a history of (h/o) smoking, 50% patients had h/o hypertension, 34% patients had h/o ischemic heart disease, 15% patients had transient ischemic attack, 13% patients were alcoholics, 57% had diabetes mellitus while 51% were presented with intermittent claudication.

Conclusion: The present study concludes that age, gender, smoking tobacco, alcohol intake, hypertension, diabetes as well as dyslipidemia are the most common risk factor for the stroke. Active lifestyle with moderate physical activity and diet control can help in prevention of substantial proportion of stroke incidence.

Keywords: Cardiovascular diseases; Hypertension; Stroke.

INTRODUCTION

Stroke is acute clinical event of focal or global neurological disturbance related to impairment of cerebral circulation, which lasts longer than 24 hours resulting in death with no known cause other than vascular origin. Without blood to supply oxygen and to remove waste products, brain cells quickly begin to die.¹ Identification of risk factors for stroke as well as awareness of relative importance of each, and of their interaction should facilitate stroke prevention. Since the pathogenic process underlying the various stroke types differ, it is reasonable to expect that risk factors for infarction differ from risk factors for

haemorrhage. The common risk factors are age, hypertension, gender, TIA or prior h/o stroke, genetics, cardiac diseases, diabetes mellitus, smoking, dyslipidemia, alcohol consumption and hyper homocystenemia.²

The burden of stroke on the community is best reflected by the incidence. According to the World Health Organization, 15 million people suffer stroke worldwide each year. Of these, 5 million die and another 5 million are permanently disabled. High blood pressure contributes to more than 12.7 million strokes worldwide. In developed countries, the incidence of stroke is declining, largely due to efforts to lower blood pressure and reduce smoking.³ However, the overall rate of stroke remains high due to the aging of the population.

The understanding of stroke in a clinical setting is pivotal to create awareness among masses to prevent the burden of vascular diseases as well as to educate people regarding modifiable and non-modifiable risk factors. Hence, the present study was conducted to reveal signs, symptoms, and risk factors of stroke in patients presenting to the department with this condition.

MATERIALS AND METHODS

The current cross-sectional observational study comprised of 100 patients who were admitted in the Department of Medicine at C.U. SHAH Medical College and admitted and diagnosed as stroke cases. The study was initiated after obtaining ethical approval from the institutional ethical committee. The participants were enrolled by convenient sampling after receiving informed and written consent from them. Inclusion criteria comprised in-patients presenting with following signs:

- Unilateral or bilateral motor impairment (including dyscoordination)
- Unilateral or bilateral sensory impairment
- Aphasia/dysphasia (non-fluent speech)
- Hemianopia (half-sided impairment of visual fields)
- Perception deficit of acute onset
- Ataxia of acute onset
- Dysarthria (slurred speech)

and those patients in whom CT Scan brain was done as well as those patients or relatives who gave consent to participate in the study. Exclusion criteria comprised of patient presenting causes of stroke other than cerebrovascular stroke, patient presenting with repeated/recurrent stroke and patient/relative unwilling to participate in the study. The clinical profile of all enrolled patients was noted as per the proforma. Relevant clinical history including age, socio-economic status, clinical presentation of patients, significant personal and family history, history of any drug intake, alcohol and smoking, history of associated diseases was taken and entered in the proforma. Laboratory investigations was carried, and lipid profile was studied. CT scan of brain was conducted. For statistical analysis of the study, X^2 with $k < 0.5$ and a p -value < 0.01 was considered as significant value.

RESULTS

In our study we found 4% cases below 40 year, 16% cases in age 40- 50 years, 27% in 51-60 years, 34% in 61-70 years, 15% in 71-80 years, 3% in 81- 90yrs, 1% in 91-100 years.

In our study we found that 62% patients present with right hemiplegia, 38% patients presented with left hemiplegia, 48% patients present with cranial n palsy, 30% present with altered sensorium (figure 1). Here patient also present with overlapping of one or more symptoms.

In our study 55% patients had history of (h/o) smoking, 50% patients had h/o HTN, 34% patients had h/o IHD, 15% patients were h/o TIA, 13% patients were alcoholics, 57% with h/o DM while 51% were presented with intermittent claudication. Many patients had more than one risk factors (table 2).

In our study we found 40% had high LDL, in 23% had high TG, 17% had reduced HDL, and 11% had high total cholesterol (table 3).

Age	Male	Female	Total
<40	1	3	4
40-50	11	5	16
51-60	20	7	27
61-70	20	14	34
71-80	8	7	15
81-90	3	0	3
91-100	1	0	1
Total	64	36	100

Figure1: Predominant symptoms on presentation

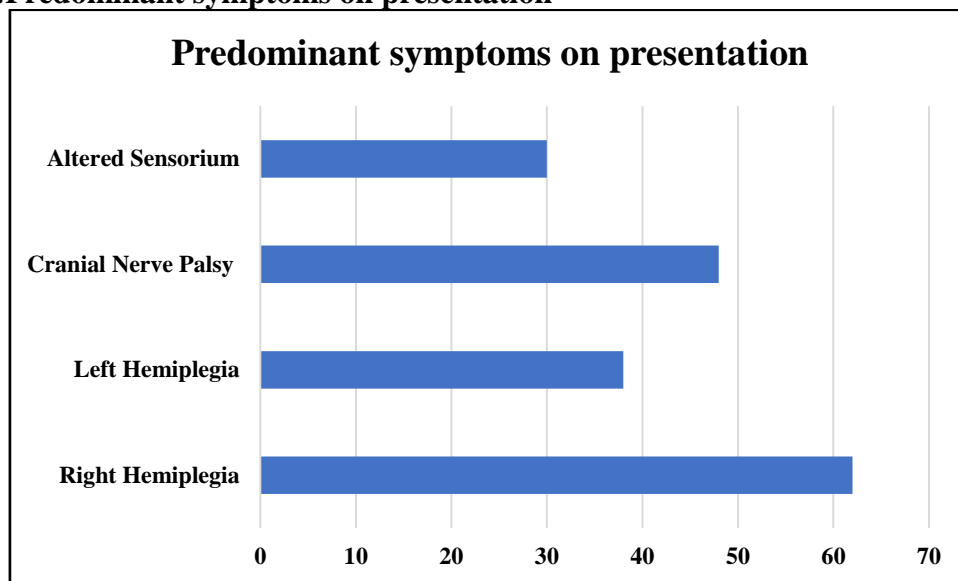


Table2: Risk factors in patient

SYMPTOMS	Cases
History of TIA	15
Alcoholics	13
IHD	34
Smoking	55
DM	57
HTN	50
Intermittent Claudication	51

Table3: Dyslipidemia

SYMPTOMS	Cases
↑Cholesterol	11
↑LDL	40
↑TG	23
↓HDL	17

DISCUSSION

Stroke is the second leading cause of death and the third leading cause of disability across the world.⁴ In this study 4% cases of stroke were below 40 year, 16% cases in age 40-50 years, 27% in 51-60 years, 34% in 61-70 years, 15% in 71-80 years, 3% in 81-90 years, 1% in 91-100 years. Regarding clinical symptoms, 62% patients present with right hemiplegia, 38% patients presented with left hemiplegia, 48% patients present with cranial and palsy, 30% present with altered sensorium. Here patient also present with overlapping of one or more symptoms. In another study by Patne SV et al,⁵ clinical profile of stroke patients in rural tertiary health care centre was studied and it was reported that the cerebrovascular strokes were more common in males than females with most common age group was 61-70 years. Hemiplegia was the most common clinical feature, the most common risk factor was hypertension (48.78%), tobacco chewing (26.01%), smoking (19.51%), followed by past h/o of cerebrovascular stroke (12.19%), Dyslipidemia (8.94%). In the present study, 40% had high LDL, 23% had high TG, 17% had reduced HDL, and 11% had high total cholesterol. In another study by Shravani K et al,⁶ the mean age of the patients was 50 years and the incidence of stroke was predominant in males 73%, followed by females 27. It was observed that 70% of patients were hypertensives, 28% were diabetics, 27% were alcoholics, and 24% of patients had a habit of smoking, followed by others. Studies conducted by Palomeras Soler E et al⁷ and Akbar DH et al⁸ also reported male preponderance.

In the present study, 55% patients had a history of (h/o) smoking, 50% patients had h/o hypertension, 34% patients had h/o ischemic heart disease, 15% patients had transient ischemic attack, 13% patients were alcoholics, 57% had diabetes mellitus while 51% were presented with intermittent claudication. Many patients had more than one risk factors. In a similar study, in which Fekadu G et al¹ studied risk factors, clinical presentations and predictors of stroke among adult patients admitted to stroke unit in Ethiopia and reported that the most common risk factor identified was hypertension (75.9%) followed by family history (33.6%), alcohol intake (22.4%), smoking (17.2%) and heart failure (17.2%). The most common clinical presentation was headache complained by 75.0% of the patients followed by aphasia 60.3% and hemiparesis 53.4%. Atrial fibrillation was the independent predictor of hemorrhagic stroke. The relationship with systolic blood pressure is similar and possibly stronger, and even 'isolated', systolic hypertension is associated with increased risk.⁹

Another similar study, conducted by Tini K et al¹⁰ in Bali reported that strokes were more common in males (61%) with most affected age group was 50-59 years (29.3%) and young

stroke (age ≤ 45 years) accounted for 19.5% of the cases. Ischemic stroke (53.7%) was more common type encountered, and hypertension (76.8.3%) was leading risk factor.

CONCLUSION

The present study concludes that age, gender, smoking tobacco, alcohol intake, hypertension, diabetes as well as dyslipidemia are the most common risk factor for the stroke. Active lifestyle with moderate physical activity and diet control can help in prevention of substantial proportion of stroke incidence.

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