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ORIGINAL RESEARCH

Risk factors in ischemic stroke patients

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ABSTRACT

Background: Stroke is defined as rapidly developing clinical indications of focal (or global) disruption of brain function that lasts more than twenty-four hours or results in death and has no apparent cause other than vascular origin. The present study was conducted to assess risk factors in patients with ischaemic stroke. **Methodology:** 104 patients with ischemic stroke of both genders were included. Risk factors such as prior CVD, alcoholism, diabetes, hypertension, obesity, dyslipidemia, smoking, and family history of stroke etc. were recorded. **Results:** Out of 104 patients, 58 were males and 46 were females. Common risk factors were obesity in 45, alcoholism in 41, smoking in 72, past CVD in 38, dyslipidaemia in 54, family history of stroke in 17 patients, diabetes in 59, and hypertension in 81 patients. The difference was significant (P< 0.05). Right side hemiplegia/hemiparesis was seen in 47 patients and left side in 57. Out of 11 cases of speech abnormality, 6 had dysarthria and 5 had aphasia. Common clinical features observed were speech disturbances in 45, altered sensorium in 13, seizures in 26, cranial nerve involvement in 31, and gait abnormalities in 27 patients. The difference was significant (P< 0.05). **Conclusion:** The majority of ischemic stroke cases were in men. Alcoholism, smoking, and hypertension were found to be common risk factors. The most prevalent clinical characteristics were hemiplegia/hemiparesis on the left side.

Keywords: dysarthria, aphasia, Ischaemic stroke

INTRODUCTION

Stroke is defined as rapidly developing clinical indications of focal (or global) disruption of brain function that lasts more than twenty-four hours or results in death and has no apparent cause other than vascular origin.[1] Stroke is the primary cause of mortality and disability in India. There are between 119 and 145 cases per 100,000. In both middle-class and lower-class countries, stroke is becoming a more significant cause of early mortality and disability.[2,3] It has been found that population changes and modifiable risk factors play a major role in the elevated risk of strokes. An abrupt blockage of the arterial system causes the brain's tissues to lose blood flow, leading to an ischemic stroke. The occlusion may be due to thrombus or embolism.[4,5]

Worldwide, ischemic strokes account for between 50 and 85 percent of all strokes. Age, sex, and heredity are some of the numerous risk factors that cannot be altered.[6] High blood pressure, diabetes, alcoholism, smoking, and hyperlipidemia are among the risk factors for ischemic stroke that can be altered. The incidence of stroke can be reduced by focusing on a number of modifiable risk factors.[7]The present study was conducted to assess risk factors in patients with ischaemic stroke.

MATERIALS &METHODS

The present study was conducted on 104 patients with ischemic stroke of both genders. Patients' relative consent was obtained before starting the study.

Data such as name, age, gender etc. was recorded. Each situation was carefully considered. A CT/MRI scan of the brain was performed. Prior CAD, CVD, drinking, diabetes, hypertension, obesity, dyslipidemia, smoking, and a family history of stroke were among the risk factors that were recorded. Clinical features such as impaired sensorium, seizures, hemiplegia/hemiparesis, abnormalities in gait, and so on were observed. The results were compiled and subjected for statistical analysis. P value less than 0.05 was regarded as significant.

RESULTS

Table I Patients distribution

Total- 104		
Gender	**Males**	**Females**
Number (%)	58	46

Table I shows that out of 104 patients, 58 were males and 46 were females.

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Table II Assessment of risk factors

Risk factors	Number	P value
Obesity	45	0.05
Alcoholism	41	
Smoking	72	
Past CVD	38	
Dyslipidaemia	54	
family history of stroke	17	
Diabetes	59	
Hypertension	81	

Table II, graph I shows that common risk factors were obesity in 45, alcoholism in 41, smoking in 72, past CVD in 38, dyslipidaemia in 54, family history of stroke in 17patients, diabetes in 59, and hypertension in 81 patients. The difference was significant (P< 0.05).

Graph I Assessment of risk factors

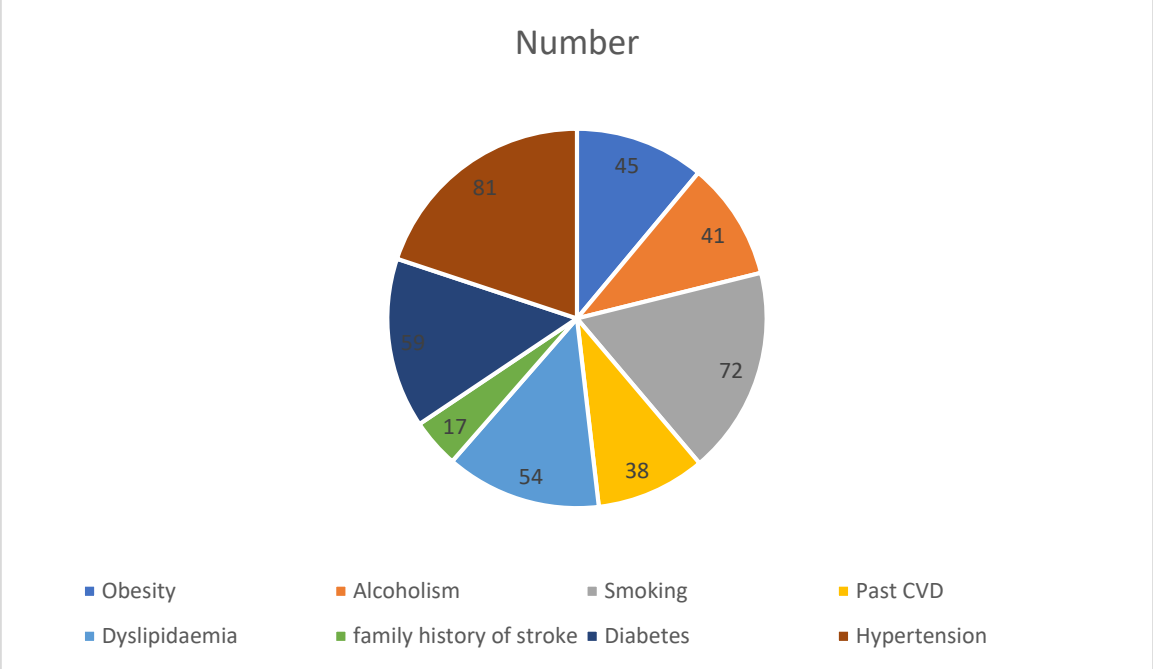

Table III Assessment of parameters

Parameters	Variables	Number	P value
Side of hemiplegia/hemiparesis	Left	57	0.87
	Right	47	
speech abnormality (11)	dysarthria	6	0.79
	aphasia	5	
Clinical features	speech disturbances	45	0.05
	altered sensorium	13	
	seizures	26	
	cranial nerveinvolvement	31	
	gait abnormalities	27	

Table II, graph I shows that right side hemiplegia/hemiparesis was seen in 47 patients and left side in 57. Out of 11 cases of speech abnormality, 6 had dysarthria and 5 had aphasia. Common clinical features observed were speech disturbances in 45, altered sensorium in 13, seizures in 26, cranial nerve involvement in 31, and gait abnormalities in 27 patients. The difference was significant (P< 0.05).

DISCUSSION

Stroke is the main cause of emergency admissions among the elderly. It is the primary cause of the elevated mortality rate. Numerous research show that the prevalence rates in the elderly population differ.[8] Two types of strokes have been seen. Ischemic is the most common, accounting for 80% to 85% of cases. The second entity is hemorrhagic stroke, which accounts for 15% to 20% of occurrences.[9,10] Ischemic strokes are caused by arterial constriction associated

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with atherosclerosis, which ultimately leads to blood stasis.[11] Hemorrhagic stroke is caused by subarachnoid hemorrhage (1%–7%) and intracerebral hemorrhage (7%–27%). Strokes result in time and money loss, as well as long-term damage. Compared to industrialized countries, where there is a slight decline, the rate is larger in developing countries.[12,13] The present study was conducted to assess risk factors in patients with ischaemic stroke.

We found that out of 104 patients, 58 were males and 46 were females. Common risk factors were obesity in 45, alcoholism in 41, smoking in 72, past CVD in 38, dyslipidaemia in 54, family history of stroke in 17 patients, diabetes in 59, and hypertension in 81 patients. Chauhan et al[14]determined clinical profile of patient with ischemic stroke in geriatric population. Out of 100 patients, males comprised 60 (60%) and females 40 (40%). Maximum cases were seen in age group 70-80 years (60) followed by >80 years (26) and 60-70 years (14). clinical features observed were hemiplegia/hemiparesis in 54, cranial nerve involvement in 26, speech disturbances in 8, altered sensorium in 4, seizures in 5 and gait abnormalities in 3 patients. Right side hemiplegia/hemiparesis was seen in 30 patients and left side in 24. Out of 26 cases of cranial nerve involvement, seventh nerve was involved in 65%, third in 23%, seventh+ twelfth in 7% and nineth+ tenth in 5%. The difference was significant (P< 0.05). Common risk factors observed were dyslipidaemia in 28, diabetes in 43, hypertension in 52, alcoholism in 21, smoking in 38, obesity in 15, past CAD in 7, past CVD in 5, family history of stroke in 4, diabetes in 43, hypertension in 52, alcoholism in 21, smoking in 38, obesity in 15, past CAD in 7, Past CVD in 5 and family history of stroke in 4 patients. Arteries involved were middle cerebral artery in 72, anterior cerebral artery in 16, posterior cerebral artery in 8, middle cerebral artery+ anterior cerebral artery in 2 and middle cerebral artery+ posterior cerebral artery in 2 cases. Out of 100 patients, fully recovered were 26, partially recovered were 58 and 16 died.

We observed that right side hemiplegia/hemiparesis was seen in 47 patients and left side in 57. Out of 11 cases of speech abnormality, 6 had dysarthria and 5 had aphasia. Common clinical features observed were speech disturbances in 45, altered sensorium in 13, seizures in 26, cranial nerve involvement in 31, and gait abnormalities in 27 patients.According to a study by Putaala et al[15], smoking (44%), dyslipidemia (60%), and hypertension (39%), among 628 male and 380 female stroke patients, were the most prevalent risk factors. Men and patients over 44 obviously had more risk factors. Cervicocerebral artery dissection (15%) and cardioembolism (20%) were the most frequent etiologic categories. There were 55 patients (5%) with leukoaraiosis, 235 patients (23%) with numerous infarcts, and 126 patients (13%) with silent infarcts. Kivioja R et al[16] found that atrial fibrillation, cardiovascular disease, type 1 and type 2 diabetes mellitus, low high-density lipoprotein cholesterol, current smoking status, hypertension, and a family history of stroke were significant risk factors for ischemic stroke in a study that included 1403 healthy participants and 961 stroke patients. A negative correlation was observed with elevated low-density lipoprotein cholesterol.

Bhattacharya Pet al[17]compared risk factors, comorbidities, complications, laboratory findings, medications, and outcomes in patients with cocaine-related (n = 41) and non-cocaine-related (n = 221) ischemic stroke (n = 147) and transient ischemic attack (n = 115) in 3 academic hospitals. The patients with cocaine-related stroke were younger (mean age, 51.9 years vs 59.1 years; P = .0008) and more likely to be smokers (95% vs 62.9%; P < .004). The prevalence of arrhythmias was significantly higher in the patients with cocaine-related stroke, and that of diabetes was significantly higher in those with non-cocaine-related strokes. The prevalence of hypertension and lipid profiles were similar in the 2 groups; however, those with cocaine-related stroke were less likely to receive statins. Antiplatelet use was similar in the 2 groups. Survivors of both groups had similar modified Rankin scores and lengths of hospital stay. In the older urban population, smoking and cocaine use may coexist with other cerebrovascular risk factors, and cocaine-related strokes have similar morbidities and mortality as non-cocaine-related strokes. Moreover, because the patients with cocaine-related stroke is younger, they have an earlier morbidity. New strategies for effective stroke prevention interventions are needed in this subgroup.

The shortcoming of the study is small sample size.

CONCLUSION

Authors found that the majority of ischemic stroke cases were in men. Alcoholism, smoking, and hypertension were found to be common risk factors. The most prevalent clinical characteristics were hemiplegia/hemiparesis on the left side.

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