

ORIGINAL RESEARCH

Assessment of risk factors of ischemic stroke

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ABSTRACT

Background: Rapidly developing clinical signs of focal (or global) disturbance of cerebral function, lasting more than 24 hours or leading to death, with no apparent cause other than that of vascular origin is called stroke. The present study was conducted to assess risk factors in patients with ischaemic stroke. **Methodology:** 54 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 54 patients, males were 32 and females 22. Rightside hemiplegia/hemiparesis was seen in 19 patients and left side in 35. Out of 6 cases of speech abnormality, 4 had dysarthria and 2 had aphasia. Common clinical features observed were speech disturbances in 12, altered sensorium in 2, seizures in 7, cranial nerve involvement in 34, and gait abnormalities in 15 patients. The difference was significant ($P < 0.05$). Common risk factors were alcoholism in 35, smoking in 40, obesity in 18, dyslipidaemia in 12, diabetes in 47, hypertension in 50, past CVD in 6, and family history of stroke in 8 patients. The difference was significant ($P < 0.05$). **Conclusion:** Males constituted maximum cases of ischaemic stroke. Left side hemiplegia/hemiparesis was the most common clinical features. Common risk factors identified were hypertension, smoking and alcoholism.

Keywords: Alcoholism, smoking, Ischaemic stroke

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INTRODUCTION

"Rapidly developing clinical signs of focal (or global) disturbance of cerebral function, lasting more than 24 hours or leading to death, with no apparent cause other than that of vascular origin," is called stroke.¹ In India, stroke is the leading cause of death and disability. The incidence rate ranges from 119 to 145 per 100,000.²

Stroke is increasingly contributing to early mortality and disability in middle-class and lower-class nations. It has been discovered that modifiable risk factors and changes in the population contribute significantly to the increased risk of strokes.^{3,4} An ischemic stroke is brought on by an abrupt blockage of the arterial system, which results in the brain's tissues losing blood flow. Embolism or thrombus could be the cause of the blockage.⁵ Between 50 and 85 percent of strokes occur globally as ischemic strokes. Among the many unchangeable risk variables are age, sex, and genetics. The risk factors for ischemic stroke that can be changed include high blood pressure, diabetes, alcoholism, smoking, and hyperlipidemia, among

others. Several modifiable risk factors can be targeted in an effort to lower the incidence of stroke.⁶ The present study was conducted to assess risk factors in patients with ischaemic stroke.

MATERIALS & METHODS

The present study was conducted on 54 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. Every case was thoroughly evaluated. A brain CT/MRI scan was conducted. A list of risk variables was kept, including prior CAD, CVD, alcoholism, diabetes, hypertension, obesity, dyslipidemia, smoking, and family history of stroke. Clinical characteristics were noted, including changed sensorium, hemiplegia/hemiparesis, altered sensorium, seizures, abnormalities in gait, and so on. 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- 54 | | |
|------------|-------|---------|
| Gender | Males | Females |
| Number (%) | 32 | 22 |

Table I shows that out of 54 patients, males were 32 and females 22.

Table II Assessment of parameters

| Parameters | Variables | Number | P value |
|--------------------------------|--------------------------|--------|---------|
| Side of hemiplegia/hemiparesis | Left | 35 | 0.01 |
| | Right | 19 | |
| speech abnormality (6) | dysarthria | 4 | 0.03 |
| | aphasia | 2 | |
| Clinical features | speech disturbances | 12 | 0.05 |
| | altered sensorium | 2 | |
| | seizures | 7 | |
| | cranial nerveinvolvement | 34 | |
| | gait abnormalities | 15 | |

Table II, graph I shows that right side hemiplegia/hemiparesis was seen in 19 patients and left side in 35. Out of 6 cases of speech abnormality, 4 had dysarthria and 2 had aphasia. Common clinical features observed were speech disturbances in 12, altered sensorium in 2, seizures in 7, cranial nerve involvement in 34, and gait abnormalities in 15 patients. The difference was significant (P< 0.05).

Graph I Assessment of parameters

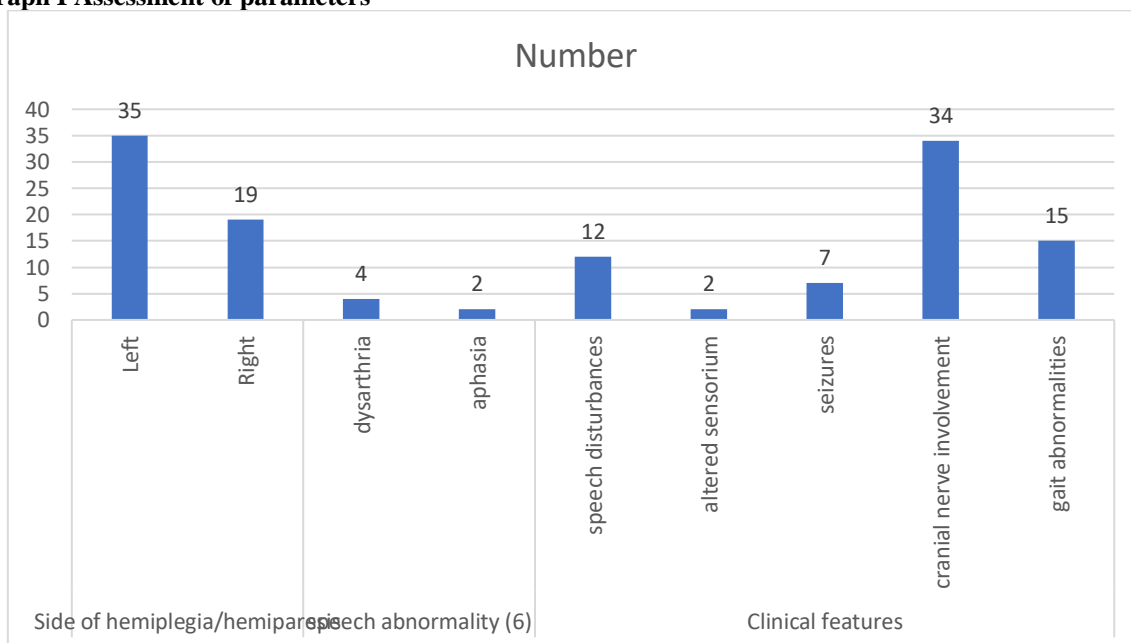


Table III Assessment of risk factors

| Risk factors | Number | P value |
|--------------------------|--------|---------|
| Alcoholism | 35 | 0.05 |
| Smoking | 40 | |
| obesity | 18 | |
| Dyslipidaemia | 12 | |
| Diabetes | 47 | |
| Hypertension | 50 | |
| Past CVD | 6 | |
| family history of stroke | 8 | |

Table III shows that common risk factors were alcoholism in 35, smoking in 40, obesity in 18, dyslipidaemia in 12, diabetes in 47, hypertension in 50, past CVD in 6, and family history of stroke in 8 patients. The difference was significant (P< 0.05).

DISCUSSION

The primary reason for emergency admission in the elderly population is stroke. It is the main reason for the high death rate. There are numerous studies that demonstrate varying prevalence rates among the older population. They have observed two kinds of strokes. Between 80% and 85% of cases are ischemic, making it the most prevalent. About 15%–20% of cases are caused by hemorrhagic stroke, which is the second entity.^{7,8} Atherosclerosis-related artery constriction that eventually results in blood stasis is the cause of ischemic strokes. Intracerebral hemorrhage (7%–27%) and subarachnoid hemorrhage (1%–7%) are the causes of hemorrhagic stroke. Strokes cause long-term impairment as well as financial and time loss.^{9,10} The rate is higher in underdeveloped nations than in industrialized nations, where there is a little decrease trend because of rising adoption.^{11,12} The present study was conducted to assess risk factors in patients with ischaemic stroke.

We found that out of 54 patients, males were 32 and females 22. In a study by Putaala et al¹³, the most common risk factors among 628 male and 380 female stroke patients were hypertension (39%), smoking (44%), and dyslipidemia (60%). Clearly, patients over 44 and men had higher risk factors. The most common etiologic groupings were cervicocerebral artery dissection (15%) and cardioembolism (20%). 235 patients (23%) had multiple infarcts, 126 patients (13%) had quiet infarcts, and 55 patients (5%) had leukoaraiosis.

We observed that rightside hemiplegia/hemiparesis was seen in 19 patients and left side in 35. Out of 6 cases of speech abnormality, 4 had dysarthria and 2 had aphasia. Common clinical features observed were speech disturbances in 12, altered sensorium in 2, seizures in 7, cranial nerve involvement in 34, and gait abnormalities in 15 patients. In a study involving 1403 healthy participants and 961 stroke patients, Kivioja R et al¹⁴ discovered 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. Increased low-density lipoprotein cholesterol showed a negative correlation with IS.

We found that common risk factors were alcoholism in 35, smoking in 40, obesity in 18, dyslipidaemia in 12, diabetes in 47, hypertension in 50, past CVD in 6, and family history of stroke in 8 patients. Males made up 58.53% of the patients in Patne's study¹⁵ on cerebrovascular stroke patients, while females made up 41.46%. The age group most frequently engaged was 61–70 years old (34.95%). There were 68.28% cases of ischemic stroke and 31.69% cases of hemorrhagic stroke. Lead clinical characteristic was hemiplegia (55.28%). Of the several risk factors, the most prevalent ones were hypertension (48.78%), smoking (19.51%), chewing tobacco (26.01%), previous history of cerebrovascular stroke (12.19%),

and dyslipidemia (8.94%). The most frequently affected regions in ischemic stroke were the frontal lobe (7.31%), parietal (30.08%), and basal ganglia (9.75%). The thalamus (10.56%) was the most often affected region in hemorrhagic stroke, followed by the ventricles (5.69%) and basal ganglia (4.06%).

CONCLUSION

Authors found that males constituted maximum cases of ischaemic stroke. Left side hemiplegia/hemiparesis was the most common clinical features. Common risk factors identified were hypertension, smoking and alcoholism.

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