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Original Research Paper

General Medicine

A CROSS SECTIONAL STUDY OF CORRELATION OF SEVERITY AND OUTCOME OF YOUNG STROKE IN A TERTIARY CARE CENTRE IN CENTRAL INDIA

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ABSTRACT Stroke is one of the leading cause of mortality and morbidity around the world. Young stroke defined as stroke under 45 years of age. This study shows significant correlation in severity and outcome of young stroke. Severity is assessed by NIHSS (National institute of health stroke scale) and outcome is assessed by MRS (modified rankin score).

KEYWORDS : young stroke,NIHSS scale,Modified rankin score

INTRODUCTION

Stroke was defined by WHO guidelines as rapidly developing clinical indications of focal, at times global, impairment of brain function lasting more than 24 hours or leading to death with no obvious cause other than vascular origin. Though cerebral blood vessel disorders and the resulting infarcts and haemorrhages primarily affect the elderly, the young are not immune.According to community-based surveys from the West and Japan, the average yearly incidence of stroke is 111-180 per 100,000 in the general population and 9-28 per 100,000 among young persons under 45. According to data from major Indian hospitals, young people account for 24 to 35 percent of all neurological admissions.Although some studies on stroke in the young included patients in their second to fourth or fifth decade, stroke in the young often refers to people between 15 and 45.

CASE STUDY

A total of 50 patients was enrolled in this study of age less than 45 years. Out of which majority of patients had an age between 31-45 years,68% of the patients were from urban areas and 32% patients were from rural areas with a male preponderance (62%). 72% of the patient population was in the normal BMI group, only 8% were in the obese group and 14% were in the lean BMI group.In this study Ischemic stroke (70%) was the most common type followed by intracranial haemorrhage in 24%, subarachnoid haemorrhage in 2%, and subdural haemorrhage in 4% of patients seen in these young patients.

Hypertension topped the list of risk factors with 32%, followed by alcohol use in 28%, tobacco use in 16%, and diabetes mellitus in 14% of patients. 12% patients had the covid-19 infection, 8% patients had atrial fibrillation, 8% patients had valvular heart disease, 2% patients had a cerebrovascular accident and 2% patients had coronary artery disease. So, Hypertension, alcohol use, and tobacco use were the most predominant risk factors seen in these young stroke patients. Other risk factors in their study include systemic hypertension (37.10%), diabetes mellitus (29.57%), and ischemic heart disease (15.59%).

There was a significant association seen between Rankin Score at discharge and the Rankin Score at admission (P=0.001) correlated with patients' outcome. 3 of the 4 patients having admission Rankin Score of 5 expired and 1 patient with Rankin Score 4 also expired. While the Rankin Score at discharge showed a decrease in the score compared to the admission Rankin Score.

CONCLUSION

Stroke in young adults is a major public health problem, affecting the young productive age group of the society. Ischemic stroke is the most commonly seen type of stroke. These young patients present with higher NIHSS score and modified Rankin Scores. So, there is a need to make them aware about the warning signs of stroke and about young stroke itself. We did not find any association of risk factors on the outcome of these young stroke in the present study, but the impact of these risk factors should not be negated. There was 8% deaths in the present study. These patients had high NIHSS as well as modified Rankin Score at presentation. Early diagnosis and initiation of the treatment is the way to save these young strokes from morbidity and mortality caused by stroke.

Table 1 Rankin score at admission and discharge

Rankin Score	Admission Rankin A	Discharge Rankin D
0	0	2
1	8	30
2	10	13
3	17	1
4	11	0
5	9	0
6	0	4
Total	50	50

Table 2 Comparison of admission and discharge rankin score in relation with NIHSS grade

NIHSS Grade	Pt.	Rankin A	Rankin D	'T' value	P value
0	3	1.00±0.00	0.33±0.58	2.000,df=2	0.184
1-4	7	1.286±0.49	1.00±0.00	1.549,df=6	0.172
5-15	29	2.93±0.70	1.31±0.48	14.035, df=28	0.001

16-20	4	4.25±0.50	3.25±1.89	1.000,df=3	0.391
21-42	2	5.00±0.00	6.00±0.00	_	_

Paired 't' test applied. P value <0.05 was taken as statistically significant.

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