Research Article

Stroke in Young Adults: A Study from a Tertiary Care Hospital, Guntur.

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ABSTRACT

**Background:** Stroke is a worldwide health problem. Stroke in people under 45 years of age is less frequent than in older populations but has a major impact on the individual and society. **Material & Methods:** It was a retrospective, record based study of patients of stroke in the age group of 15-45 years admitted to Government General Hospital, Guntur. Hospital records were analyzed for a period of 2 years from January 2013 to December 2014. A total of 103 records were selected. A semi structured, pre coded proforma was used to collect information from the records. **Results:** Out of the 103 cases of stroke, majority 65 (63.2%) were ischemic stroke, three fourths (74%) were males and majority (56%) were from 31-45 years age group. High prevalence of risk factors was present in the study population. There were about 61% (63) smokers, 52% (53) alcoholics, 48% (49) diabetics and 68% (70) hypertensives. With regards to outcome about stroke, one thirds (33%) had good outcome and about 52% had disability. **Conclusions:** The present study concludes that ischemic stroke was more common in young adults. There was male preponderance with majority of cases occurring in 31-45 years which is the most economically productive period. High prevalence of risk factors was present which could have been prevented through health education and lifestyle modifications.

**Keywords:** stroke, young adults, retrospective, risk factors, outcome

INTRODUCTION:

The term “stroke” is applied to acute severe manifestations of cerebrovascular disease. It causes both physical and mental crippling. World Health Organization (WHO) defined stroke as “rapidly developed clinical signs of focal disturbance of cerebral function; lasting more than 24 hours or leading to death, with no apparent cause other than vascular origin”.

The 24 hours threshold in the definition excludes transient ischaemic attacks (TIA) which is defined to last less than 24 hours, and patients with stroke symptoms caused by subdural haemorrhage tumours, poisoning or trauma are excluded. Stroke includes a number of syndromes with differing aetiologies, epidemiology, prognosis and treatment. These are Ischaemic stroke and haemorrhagic stoke.

Stroke is a worldwide health problem. It makes an important contribution to morbidity, mortality and disability in developed and developing
countries and remains a leading cause of death from non communicable diseases (NCD). Although the prevalence of stroke appears to be comparatively less in India than in developed countries, it is likely to increase proportionally with the increase in life expectancy.

The proportion of stroke in the young population is significantly more in India than in developed countries; some of the important causes for this are likely to be rheumatic heart disease, ischaemic strokes in peripartum period and arteriopathies as a sequel of CNS infections like bacterial and tubercular meningitis.

**MATERIALS AND METHODS:**

It was a retrospective, record based study of patients of stroke in the age group of 15-45 years admitted to Government General Hospital, Guntur. Hospital records were analyzed for a period of 2 years from January 2013 to December 2014. All the records fulfilling the criteria of age and WHO definition of stroke were identified and selected for the study. Prior permission was taken for analysis of the records from the hospital.

A total of 103 records were selected. A semi structured, pre coded proforma was used to collect information from the records. Information related to demographic data (like age, sex, occupation), risk factors (like smoking, family history, hypertension, cardiac diseases) and investigations performed were collected. Data entry and analysis was done using Microsoft Excel 2007 version. Data was presented in percentages and proportions and chi-square test was used to determine the differences observed were statistically significant.

**Stroke subtypes:**

Cardio embolic: presence of potential cardiac sources of embolism as documented from the ECHO cardiograph.

Hemorrhagic stroke: as documented from the cranial computerized tomography (CT) scan.

Ischemic stroke: supported by axial CT or digital subtraction angiography.

**RESULTS:**

Out of the 103 cases of stroke, majority 65 (63.2%) were ischemic stroke, 30 (28.5%) were hemorrhagic stroke and 8 (8.3%) were embolic stroke.

**Demographic characteristics:** Among the study population, almost three fourths (74%) were males and one fourth (26%) females in all subtypes of stroke. With regards to age, majority (56%) were from 31-45 years age group. Occupation wise distribution showed that professionals (24%), skilled (32%), business (11%), unskilled (25%) and students (8%).

**Risk factors:** High prevalence of risk factors was present in the study population. There were about 61% (63) smokers, 52% (53) alcoholics, 48% (49) diabetics and 68% (70) hypertensives. Family history of stroke was present in 32.6% (33) patients. Abnormal platelets and coagulation parameters were seen in about 8% (8) and elevated homocysteine levels found in 5% (5) patients. Association between sex and some of the risk factors including smoking, alcoholism, hypertension showed that there was higher prevalence among males compared to females and this was found to be statistically significant (p<0.05).

With regards to outcome about stroke, one thirds (33%) had good outcome and about 52% had disability. Investigations which were done on the patients were ECHO and Cranial CT scan. ECHO revealed the following abnormalities: The results of the investigations of both ECHO and Cranial CT scan revealed the following findings.

**ECHO:** hypertensive heart disease (14), rheumatic heart disease (RHD) (9) and mitral valve stenosis (4). Cranial CT scan: Middle cerebral artery involvement was seen in 12 patients.
DISCUSSION
Stroke in people under 45 years of age is less frequent than in older populations but has a major impact on the individual and society. Very few studies have been done in India to determine the risk factors, clinical outcomes related to stroke in young adults. Hence the present study has been done to determine stroke especially in young adults aged 15-45 years.

With regards to type of stroke, from the total 103 cases, almost two thirds had ischemic stroke followed by hemorrhagic stroke. Similar observations were seen in study done by Kumar, et al in Mangalore. Another similar retrospective study done by Kashinkunti et al also found similar observations.

In the present study, demographic characteristics revealed that there was male preponderance and more than half the proportions were in the age group of 31-45 years age group. Similar findings were seen in studies done by Nayak et al and Lipska et al.

Risk factors for stroke in young adults in the present study found a very high prevalence of risk factors especially with related to smoking and alcoholism. More than half percentage of study population was either smokers or alcoholics. Even diabetes and hypertension was also seen in majority. Similar observations were seen in studies. Diabetes was not found to be a risk factor for ischemic stroke in Sweden and Taiwan. Lipska et al, have reported that diabetes is not a risk factor for stroke when compared with hospital-based controls. Hypercholesterolemia and hypertriglyceridemia are known to be associated with stroke in young adults. Lipska et al did not find such an association in south Indian patients.

CONCLUSIONS
The present study concludes that ischemic stroke was more common in young adults compared to other types of stroke. There was male preponderance with majority of cases occurring in 31-45 years which is the most economically productive period. High prevalence of risk factors was present among the young patients. Some of these risk factors could have been prevented through health education and lifestyle modifications.

REFERENCES

FIGURES & TABLES:

Table no 1: Risk factors for Stroke in young adults

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<td>Alcoholism</td>
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