



COMPARATIVE STUDY OF CEREBRO VASCULAR STROKES IN YOUNG (MORE THAN 15 YEARS AND LESS THAN 40 YEARS) AND OLD PERSONS (MORE THAN 40 YEARS)

KEYWORDS

Cerebrovascular strokes,

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ABSTRACT

Cerebrovascular stroke ranks for most among all the disorder of central system. Cerebrovascular accident is the 3rd leading cause of death after cardiovascular diseases. The incidence of stroke worldwide is 179 per 1,00,000 population where as in India it varies from 52 to 842 / 1,00,000 in various parts. I propose to present my observations in regard of risk factors in 25 cases of cerebrovascular accidents in young individuals with age varying from 15 to 40 yrs and 75 cases with age 41 years and above, admitted in General Hospital and Government General Hospital Kurnool.

Introduction: Cerebrovascular disease is one of the devastating neurological disease seen in your people compared to western studies incidence of stroke in young is more common in Indian studies. This study was carried out to know risk factors for stroke in young in this part of the country. Epidemiological studies of cerebrovascular accidents (C.V.A) as a whole have been made by various worker both in India and abroad. Our studies concerning cerebrovascular accidents in young individuals are very few. In India many reports on cerebral venous thrombophlebitis, cerebral thrombophlebitis and Intracerebral hemorrhage have been made.

Aims & Objectives:

1. Role of smoking in causation of stroke in young.
2. Is there any gender based risk factor in young cerebrovascular stroke patients?
3. Role of Hyperlipidemia in causation of stroke in young

PATIENTS AND METHODS:

The present study was carried out in Kurnool Medical College teaching and General Hospital, Kurnool during a period from September 2013 to September 2015.

The total number of cases studied were 100 out of which 25 cases were young i.e. Age group between 15 to 40 years and 75 elderly patients i.e. group above 40 years. In each case detailed clinical history and investigation were done.

Following cases were excluded during study

1. Haemorrhagic strokes due to head injuries
2. Stroke due to Epilepsy
3. To exclude cases of TIA
4. Patients below 15 years of age

Following cases were included in the study.

1. Patients above 15 years
2. Young patients are defined as those between the age group of 15 years and 40 years (Inclusive of age 40)
3. Old patients are defined as those who have completed 40 years of age as on the date of this study.

Above cases were studied with the help of following investigations.

1. Lipid profile
2. Blood sugar
3. Computed Tomography scan
4. Two dimensional Echocardiography
5. Electro Cardiography

OBSERVATION AND RESULTS:

Stroke in young formed 25% of acute stroke patients admitted to Government General Hospital from September 2013 to September 2015. Strokes in young age group is common after age of 20 years.

Mean age at the time of admission was 28 years. Incidence of stroke was high in male (64%) than female (26%) Ratio M:F 1.7:1.

Where as in elderly stroke is common at age group of 40-60 years. Mean age at the time of admission was 58 years. Incidence of stroke was high in males (68%) than in females (32%) Ratio M:F 2.1:1.

In ischemic strokes common risk factor like hypertension, Diabetes Mellitus and smoking which are common in stroke in elderly patients are rather infrequent in young. Common predisposing factor which were noticed in stroke in young are hypertension (25%) smoking / tobacco chewing (25%) alcohol (20%). Other predisposing factors like tubercular meningitis recent delivery RDH were also seen

Ischemic strokes were the commonest strokes in this study in strokes in Young (80%) and stroke Elderly (73.33%) then Haemorrhagic strokes in young (20%) and strokes in elderly (26.66%).

Hemispherical Lesion was the commonest location in both types of strokes.

Strokes in Young:

I:H	ratio in hemispher	-	5:3:1
I:H	ration in brain stem	-	2:1

Strokes in Elderly:

I:H	ratio in Hemisphere	-	2.9:1
I:H	ratio in brain stem	-	1.7:1

Commonest clinical presentation in this study in strokes in young was motor weakness (65%). Other common symptoms in ischemic stroke were unconsciousness (55%), speech disturbances (30%), headache (40%) vomiting (30%), and fever (10%) were seen.

In haemorrhagic strokes unconsciousness was commonest (80%). All patients had headache (100%) and convulsion (80%). None of the patient had sensory disturbances in the study. One the other hand in Elderly patients commonest clinical presentation in ischemic stroke were motor weakness (85.4%) followed by unconsciousness (32.7%) speech disturbances and headache (21.8%). In haemorrhagic stroke commonest presentation was unconsciousness (90%) followed by Motor weakness (50%), headache (40%), vomiting (40%), convulsions (25%). Sensory disturbances were seen in two patients (3.6%).

Mortality was common in haemorrhagic strokes. Mortality was 40% in haemorrhagic strokes. One had massive intraventricular haemorrhage and other had pontine haemorrhage. Mortality was 30% in ischemic strokes. In this study 60% of patients who had either ischemic or haemorrhagic strokes improved. In elderly patient Morbidity and mortality rates were not able to calculate because most of the patient were taken against medical advice. In case of haemorrhagic strokes in elderly (26.6%) only 7 patients improved (9.33%).

Total No. of CT Scan Head	25
No. of Infarction	20
No. of Haemorrhage	5
Single Lesion	24
Double Lesion	1

CT Scan head with and without contrast study was done in 25 patients. Out of 25 patients 20 patients showed infarction and 5 patients showed haemorrhage.

DISCUSSION:

Incidence of stroke was common in male in various studies. In this study also stroke was common in males. Female has less incidence of stroke because they are protected by sex specific factors like oestrogen. Risk factor like smoking was less in females. Where as in elderly patients incidence was common in Male than female patients.

Study by Spyridon Roditis et al showing that male gender is the most common for stroke in young and also old. Age is the greatest risk factor for intracerebral hemorrhage. Hypertension is the most important prevalent modifiable risk factor for intracerebral hemorrhage. Untreated hypertension is a greater risk factor than treated hypertension and hypertensive patients who discontinue their medications have greater risk than who continue medication. In our study cerebro vascular accidents are more common among males than females.

The study shows that hypertension is the most common risk factor for hemorrhagic stroke in young adults. Majority of acute hemorrhagic patients presented with hemiplegia followed by altered consciousness. In our study also the hypertension is the most common risk factor for hemorrhagic stroke in young adults. The commonest risk factor for ischemic stroke was smoking (25%) and hypertension (25%) in our study. Whereas in study by chopra J.S. et al smoking was seen in 10% and hypertension in 15% only. Chopra J.S. et al study was conducted almost two decades earlier?. Moreover there was also a difference in the sample study. This increases association of smoking and Hypertension with stroke may be due to increased prevalence of smoking and life style in young. This is one mainly due to urbanization and changing habits. Whereas in elderly patient common risk factor in ischemic stroke are hypertension, diabetes mellitus and smoking.

Common risk factors for haemorrhagic stroke in our study was hypertension (60%) incidence of haemorrhagic stroke due to hypertension was similar in study by John Marshal 60%. Other common risk factors seen in association with haemorrhagic stroke in our study were alcohol (60%) and smoking (60%). These factors were not studied by John Marshal. In elderly group (more than 40 years) common risk factors in haemorrhagic stroke were hypertension (70%) Diabetes Mellitus (15%) and smoking (35%). In our study ischemic stroke was the commonest type of stroke. Similar observation was reported by authors like P.M. Dalal and J.S. Chopra et al. P.M. Dalal says that many of haemorrhagic stroke patients die before reaching hospital. This explain the lower incidence of haemorrhagic strokes in hospital studies.

In our study seriological tests for syphilis, HIV and IBM was positive in 5% of ischemic strokes. Rheumatic heart disease was detected in 15% of strokes in young and 3.6 of strokes in elderly group. To the best of our knowledge there are no recent studies to compare CT scan findings. Improvement and mortality in ischemic stroke was almost similar in both the studies. Mortality in haemorrhagic stroke was high, but compared to P.M. Dalals study mortality was less. In elderly patients final outcome was not known because most of them were discharged on request. Taiwan Tsung – et al study a four common risk factors were studied in which Hyperlipidemia (53.1%), smoking 49.8% Hypertension 45.8% and family h/o stroke 29.3%. In their study the hyperlipidemia is the major risk factor for ischemic stroke in

young in our study smoking is the major risk factor for stroke in young. Salma N-Khan ejaz ahamad vohra et al showed that incidence of ischemic stroke was 70% and 29.9% cerebral hemorrhage. The mean age at presentation was 62 years male to female ratio 1.05:1. In their study comparison between cerebral infarction and cerebral hemorrhage & sex distribution.

CONCLUSION

1. Commonest risk factor includes smoking in strokes in young and hypertension in stroke in elderly in ischemic stroke. Hypertension and smoking were commonest risk factors in haemorrhagic strokes in strokes in young and Hypertension in strokes in elderly.
2. In this study ischemic strokes were commoner than Hamemorrhagic strokes (4:1) in strokes in young and (2.8:1) in strokes in elderly.
3. Male had more incidence of strokes than female in this study
4. CT Scan study of head (with and without contrast) revealed inferred picture (Hypodensity) commoner than haemorrhagic lesions (Hyperdensity). Anatomically speaking supra tentorial lesions were commoner than intratentorial lesions. Haemorrhagic strokes had increased risk of mortality whereas in ischemic strokes mortality was low.

REFERENCES

1. J. W. Sturm, M. Mackay, and A. G. Thrift, "Stroke among women, ethnic groups, young adults and children," in Handbook of Clinical Neurology, M. Fisher, Ed., vol. 92, Elsevier, New York, NY, USA, 2009.
2. R. Bonita, J. B. Broad, and R. Beaglehole, "Changes in stroke incidence and case-fatality in Auckland, New Zealand, 1981-9," *Lancet*, vol. 342, no. 8885, pp. 1470-1473, 1993.
3. R. D. Brown, J. P. Whisnant, J. D. Sicks, W. M. O'Fallon, and D. O. Wiebers, "Stroke incidence, prevalence, and survival: secular trends in Rochester, Minnesota, through 1989," *Stroke*, vol. 27, no. 3, pp. 373-380, 1996.
4. K. N. Vemmos, M. L. Bots, P. K. Tsibouris et al., "Stroke incidence and case fatality in southern greece: the Arcadia stroke registry," *Stroke*, vol. 30, no. 2, pp. 363-370, 1999.
5. A. Carolei, C. Marini, M. Di Napoli et al., "High stroke incidence in the prospective community-based LAquila registry (1994-1998): First year's results," *Stroke*, vol. 28, no. 12, pp. 2500-2506, 1997.
6. P. L. Kolominsky-Rabas, C. Sarti, P. U. Heuschmann et al., "A prospective community-based study of stroke in Germany—the Erlangen Stroke Project (ESPro): incidence and case fatality at 1, 3, and 12 months," *Stroke*, vol. 29, no. 12, pp. 2501-2506
7. D. Smadja, P. Cabre, F. May et al., "ERMANCIA: epidemiology of stroke in Martinique, French West Indies: Part I: methodology, incidence, and 30-day case fatality rate," *Stroke*, vol. 32, no. 12, pp. 2741-2747, 2001.