

ORIGINAL ARTICLE

EVALUATION OF RISK FACTORS IN ACUTE STROKE

Putta Suresh¹, C. Yamini Devi², H. Suresh Reddy³, K. Alekhya⁴, A. T. Narayana Reddy⁵

HOW TO CITE THIS ARTICLE:

Putta Suresh, C. Yamini Devi, H. Suresh Reddy, K. Alekhya, A. T. Narayana Reddy. " Evaluation of Risk Factors in Acute Stroke". Journal of Evidence based Medicine and Healthcare; Volume 2, Issue 13, March 30, 2015; Page: 1990-1994.

ABSTRACT: Introduction: Cerebrovascular disease is the third most common cause of death in the developed world after cancer and ischemic heart disease. In India, community surveys have shown a crude prevalence rate of 200 per 100000 population for hemiplegia. Aims and objectives: Identification of risk factors for cerebrovascular disease. Materials and Methods: Inclusion Criteria: Cases of acute stroke admitted in S.V.R.R.G.G.H, Tirupati were taken for the study. Exclusion Criteria: Head injury cases, neoplasm cases producing cerebrovascular disease were excluded. Results: Stroke was more common in male, 54% patients were male 46% were female. It was more common in 6th and 7thdecade. More common risk factors were hypertension followed by smoking, diabetes mellitus. More common pathology was infarction. Conclusion: Common risk factors for acute stroke are hypertension, smoking, diabetes mellitus, alcoholism, obesity, cardiac disease. Stroke was confirmed by CT scan of brain.

KEYWORDS: Cerebrovascular disease, stroke, risk factors.

INTRODUCTION: A stroke or cerebrovascular accident is defined by abrupt onset of neurologic deficit that is attributable to a focal vascular cause.¹ Thus, the definition of stroke is clinical, and laboratory studies including brain imaging are used to support the diagnosis. In India community surveys have shown a crude prevalence rate of 200 per 100000 population for hemiplegia. It accounts by nearly 1.5% of all urban admissions, 4.5% of all medical and about 20% of neurological cases.² the incidence of stroke worldwide was 179 per 100000 population in various parts. In western countries overall prevalence rate is 794 per 100000 population. The annual incidence of stroke in UK is about 350 per 100000 population and in USA they cause 200000 deaths per year.^{3,4}

Cerebrovascular disease is the second cause of death worldwide, and all projections indicate that this will remain in the year 2020.^{5,6} Stroke is more common in men, but women are more severely ill.

STROKE RISK FACTORS. ⁷
Fixed
Age
Gender(male>female, except in the very young and very old)
Race(afro Caribbean>Asian>European)
Heredity
Previous vascular events
High fibrinogen

ORIGINAL ARTICLE

Modifiable
High blood pressure
Heart disease(atrial fibrillation, heart failure, endocarditis)
Diabetes mellitus
Hyperlipidemia
Smoking
Excess alcohol consumption
Polycythemia
Oral contraceptives
Social deprivation

AIMS AND OBJECTIVES: Identification of risk factors in acute stroke. This study included 50 patients of acute stroke admitted in S.V.R.R.G.G.H., Tirupati.

MATERIALS AND METHODS:

INCLUSION CRITERIA: Patients of acute stroke admitted in S.V.R.R.G.G.H. were included in this study.

EXCLUSION CRITERIA: Head injuries and neoplasm causing stroke were excluded.

The diagnosis of stroke was made on the basis of clinical examination and CT scan of the brain.

After admission detailed history of stroke including history of risk factors like hypertension diabetes mellitus, cardiac disease, smoking, alcohol intake were taken. Complete neurological and other systemic examination was done.

RESULTS:

Age (years)	Male	Female	Total	Percentage
20-30	0	1	1	2.00
30-40	2	0	2	4.00
40-50	6	4	10	20.00
50-60	3	4	7	14.00
60-70	11	7	18	36.00
70-80	15	7	12	24.00

Table 1: Age and Sex distribution in stroke patients

	No. of Cases	Percentage
No risk factors found	2	4
Risk factors found	48	96
a)hypertension	33	66
b)smoking	23	46

ORIGINAL ARTICLE

c)diabetes mellitus	21	42
d)alcohol	16	32
e)obesity	11	22
f)cardiac causes	10	20
g)past h/o stroke	1	2

Table 2: Incidence of risk factors in stroke

DISCUSSION: A hospital based cross sectional study was done to know the risk factors of acute stroke. Among the 50 patients 27 were male, 23 were female patients. Incidence of acute stroke was common in male than female. The incidence of acute stroke was common in the age groups of 60-80 years. The overall prevalence of stroke is higher in men than in women and increases with age in both sexes.⁸ The only epidemiological study of Abraham et al(1970)who found hypertension, diabetes mellitus, hypercholesterolemia and syphilis to be the risk factors associated with hemiplegic patients.⁹

Shaper et. al., in 1991 concluded that hypertension, smoking and preexisting ischemic heart disease was found to be the major risk factors. Stroke is the third leading cause of death in the industrialized world after heart disease and cancer.¹⁰ the rate of stroke approximately doubles with each decade after the age of 55 years. Men have 40% higher incidence of stroke than women. Hypertension increases the risk to four fold, smoking doubles the risk and diabetes mellitus increases the risk two to six fold.¹¹ Heavy alcohol consumption may be the risk factor for ischemic and hemorrhagic stroke.

Study Group	Venkataraman et.al., (1975)	Carlos et.al., (2003)	Present Study (2015)
Incidence of stroke	41%	71.8%	66%

Table 3: Comparison of stroke incidence above age group of 50 years

Risk Factors	Smith (2008) (%)	Carlos et.al., (%)	Present Study (%)
Hypertension	87.00	48.00	66.00
Diabetes mellitus	50.00	20.90	42.00
Smoking	35.22	-	46.00
Past h/o stroke	39.30	-	2.00
Hyperlipidemia	22.95	-	22.00
Alcohol intake	-	-	32.00
Cardiac disease	-	-	22.00

Table 4: Comparison of associated risk factors in various studies

ORIGINAL ARTICLE

In this study risk factors were found in 96% of cases while no risk factor was found in 4% of cases. Hypertension was found in majority of cases(66%) which is comparable with that found in the studies of Smith (2005) and Carlos (2003) i.e., 87% and 48% respectively, and next common risk factor was smoking(46%) which is comparable with that found in Smith (2005) was 35.22% and diabetes mellitus was found in 42% cases.

SUMMARY: Cerebro vascular disease was more common in male, 54% were male and 46% were female patients. Acute stroke was more common in the age group of 60-80 years. Stroke in the young was found in 6% of cases. In the present study the commonest risk factor was hypertension 66% followed by smoking 46%, diabetes mellitus 42%.

CONCLUSION: In the present study, the most common risk factor for acute stroke was hypertension which was present in majority of patients. So to prevent stroke, strict control of hypertension is necessary. The next commonest risk factors were smoking, diabetes mellitus, cardiac disease, hyperlipidemia, to prevent acute stroke, smoking should be avoided, strict control of blood sugar in diabetes mellitus patients, and control of LDL cholesterol was necessary.

REFERENCES:

1. Wade S Smith, Joey D English, S Claiborne Johnston: Cerebrovascular diseases; Harrisons Principles of Internal Medicine-Anthony S Fauci, MD, Dennis C Kasper MD, Dan I Lango, MD et.al. 17th edition, p-2513.
2. Dalal PM: Cerebrovascular disease in API Textbook of Medicine, 7th edition; 2004:796-809.
3. MC Allen, Jhaeck: Davidson's Principles and Practice of Medicine, 19th edition, 1159-1168.
4. Wade Smith, Stephen I Hauser, Donald J Easten: Cerebrovascular accident, Harrison's Principles of Medicine, 18th edition, 3270-3299.
5. Murray CJL, Lopez AD: Mortality by cause for eight reasons of the world: Global burden of disease study. Lancet 1997; 349; 1269-1276. PMID: 9142060.
6. Murray CJL, Lopez AD: Alternative projections of mortality and disability by cause 1990-2020: Global burden of disease study. Lancet-1997; 349; 1498-1504. PMID: 9167458.
7. CMC Allen, C J Lueck, M Dennis: Cerebrovascular disease : Davidson's Principles and Practice of Medicine, Nicki R. Colledge, BSC FRCP(ed), Brian R. Walker, BSC MDFRCP(ed), Sthart H. Ralston, MD, FRCP F Med sci FRSE 21st edition, table 26-48, p1181.
8. Principa M, Ferrathi C, Casini AR, Santoni M, Giubileri F, Celasso F: Stroke, disability and dementia, results of population survey stroke.1997; 28; 531-36. PMID: 9056607.
9. Abraham et.al: Risk factors in stroke. Lancet 1970; 32; 464-966.
10. Sharper AG, Philips AN, Pocock S J et.al. : Risk factors of stroke in middle aged British men. BMJ1991, 302; 1111-1115.
11. Justin A Zivin: Approach to a cerebrovascular disease, Goldman's Cecil Medicine, Lee Goldman, MD, Andrew I Schafer MD 24th edition, p2304.

ORIGINAL ARTICLE

AUTHORS:

1. Putta Suresh
2. C. Yamini Devi
3. H. Suresh Reddy
4. K. Alekhya
5. A. T. Narayana Reddy

PARTICULARS OF CONTRIBUTORS:

1. Associate Professor, Department of General Medicine, Sri Venkateshwara Medical College.
2. Assistant Professor, Department of Anatomy, Sri Venkateshwara Medical College.
3. Post Graduate, Department of General Medicine, Sri Venkateshwara Medical College.

4. Post Graduate, Department of General Medicine, Sri Venkateshwara Medical College.
5. Post Graduate, Department of General Medicine, Sri Venkateshwara Medical College.

NAME ADDRESS EMAIL ID OF THE CORRESPONDING AUTHOR:

Dr. Putta Suresh,
18-37-S12-573, 2nd Floor,
Bhavani Nagar, Tirupati-517501,
Andhra Pradesh.
E-mail: bujjigarusuresh@gmail.com

Date of Submission: 20/03/2015.
Date of Peer Review: 23/03/2015.
Date of Acceptance: 24/03/2015.
Date of Publishing: 27/03/2015.