

A Prospective Study to Evaluate the Clinical Profile & Biochemical Profile of Acute Ischaemic Stroke Cases

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ABSTRACT

Background: The conventional stroke risk factors, including hypertension, diabetes mellitus, smoking, and cardiac diseases, do not fully account for the risk of stroke, and stroke victims, especially young subjects, often do not have any of these factors. Our aim of this study to evaluated the clinical profile & biochemical profile of Acute Ischaemic Stroke cases”.

Material & Methods: This is a case control study done on 50 patients of stroke admitted in indoor and emergency wards of PG Department of Medicine, SN Medical College, Agra. 20 healthy, age and sex matched, controls were also taken for valid comparison. Diagnosis of stroke was confirmed by CT and MRI. Patients who presented with an acute onset of focal neurological deficit were examined thoroughly and data were recorded in the standard Performa of clinical features.

Results: Our study showed that maximum no. of cases was in the age group of 60-69 yrs. All the cases presented with hemiparesis. 62 % cases had aphasia and altered sensorium. Among total 50 cases, Hypertension was present in 48 cases (96%); Diabetes was present in 42 cases (84%). Smokers were 32 (64%). Hypercholesterolemia hypertriglyceridemia

were present in 42% and 20% cases respectively. 30% cases had combined hypercholesterolemia and hypertriglyceridemia.

Conclusion: We concluded that hypertension came out to be the most common risk factor in stroke patients.

Keywords: Stroke, Hypertension, Atherosclerosis, Lipid profile

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INTRODUCTION

Stroke is one of the foremost causes of morbidity and mortality throughout the world, posing a major socioeconomic challenge in the occupational and neuro-rehabilitational programmes for “Stroke-Survivors”. Stroke is the third leading cause of mortality in the western world and a major cause of disability. Despite recent advances, only two-thirds of all strokes can be attributed to known causal risk factors. Large clinical trials of LDL-cholesterol lowering therapy reported adverse events in up to 19% of patients despite these powerful interventions. This observation has intensified the search for “new non-lipid” factors for atherosclerotic vascular disease.

The conventional stroke risk factors, including hypertension, diabetes mellitus, smoking, and cardiac diseases, do not fully account for the risk of stroke, and stroke victims, especially young subjects, often do not have any of these factors. Geographic heterogeneity, seasonal preponderance in stroke incidence during

fall or winter months found in most studies, and the decline of stroke during the 20th century are only incompletely explained by conventional risk factors and their temporal trends.¹⁻⁵ Inflammatory parameters and chronic and acute infectious diseases have been considered to modify stroke risk independent of conventional risk factors.

Stroke is an etiologically heterogeneous disease, but atherosclerosis contributes to a large proportion of cases either directly via aortic, cervical, or intracranial large-artery atherosclerosis or indirectly by cardioembolism, e.g., as a result of cardiac arrhythmias caused by coronary heart disease (CHD) or emboli after myocardial infarction. Atherosclerosis is today perceived as a chronic inflammatory vascular condition,⁶ and infectious diseases are believed to contribute to its pathophysiology. Our aim of this study to evaluate the clinical profile & biochemical profile of Acute Ischaemic Stroke cases”

MATERIALS & METHODS

This is a case control study done on 50 patients of stroke admitted in indoor and emergency wards of PG Department of Medicine, SN Medical College, Agra. 20 healthy, age and sex matched, controls were also taken for valid comparison. Diagnosis of stroke was confirmed by CT and MRI.

Inclusion Criteria

All diagnosed cases of stroke more than 35 yrs. of Age.

Exclusion Criteria

1. All patients below 35 years of Age.
2. Patients not willing for study.

3. Patients suspected to have stroke on clinical grounds without correlation with Brain Imaging studies.

4. Patients in which plasma homocysteine levels may be increased due to psoriasis, systemic lupus erythematosus, severe hepatic impairment, pernicious anemia, malignancies of breast, ovary, pancreas, drugs.

Methods

Patients who presented with an acute onset of focal neurological deficit were examined thoroughly and data were recorded in the standard Performa of clinical features.

Table 1: Age and Sex Distribution of Cases & Controls Group

Age (Yrs)	Cases			Control		
	Male	Female	Total	Male	Female	Total
30-39	6	2	8	2	3	5
40-49	5	1	6	5	1	6
50-59	10	2	12	2	2	4
60-69	14	6	20	1	2	3
70-79	3	1	4	1	1	2
Total	38	12	50	11	9	20
Mean Age	56.55	53.00	54.77	50.45	52.77	51.5

Table 2: Clinical Features at the Time of Admission

	Total Cases (N=50)	%
Altered Sensorium	31	62
Hemiparesis	50	100
Headache	14	28
Vomiting	19	38
Seizure	5	10
Aphasia	31	62

Table 3: Showing Risk Factors in Present Study

	Total Cases (N=50)	%
Diabetes	42	84
Hypertension	48	96
C A D	23	46
Smoking	32	64
Alcohol	18	36

Table 4: Table Showing Lipid Profile in Cases

	Total Cases (N=50)	%
Hypercholesterolemia (>200)	21	42
Hypertriglyceridemia (>150)	10	20
Hypercholesterolemia + Hypertriglyceridemia	15	30
High L D L (>100)	33	66
Low H D L (<40)	41	84

Table 5: Table Showing C T Scan Findings in Cases

	Total Patients (N =50)	%
Lacunar Infarct	9	18
M C A Infarct	28	56
A C A Infarct	13	26

RESULTS

Our study showed that maximum no. of cases was in the age group of 60-69 yrs. Mean age in males was 56.55 yrs and females was 53.00 yrs. Total no. of control was 20. The minimum age was 38 yrs. and maximum age was 76 yrs (table 1).

All the cases presented with hemiparesis. 62 % cases had aphasia and altered sensorium. Out of 50 patients 28% had headache while 38% patients had vomiting. Only 10% patients had seizure (table 2).

Among total 50 cases, Hypertension was present in 48 cases (96%); Diabetes was present in 42 cases (84%). Smokers were 32 (64%). CAD and Alcoholism were the risk factors present in 23 (46%) and 18 (36%) cases respectively (table 3).

Among total 50 patients, 66% cases had high LDL. 82% had low HDL. Hypercholesterolemia hypertriglyceridemia were present in 42% and 20% cases respectively. 30% cases had combined hypercholesterolemia and hypertriglyceridemia (table 4).

Among cases 56% cases had MCA Infarct. 18% cases had lacunar infarct. ACA infarct was present in 26% cases (table 5).

DISCUSSION

Stroke is a leading cause of mortality and morbidity all over the world and single largest cause of disability in young and elderly population. Stroke puts tremendous burden on health budget of a country and puts the patient and the family in great difficulty. Preventing the stroke is the biggest challenge for medical fraternity and various researches are going on for prevention of stroke.⁷ What causes stroke is still an enigma. Lot of factors have been incriminated and high association of stroke with hypertension, diabetes, smoking, alcoholism, dyslipidemia, coronary artery disease has been attributed.⁷

Our study showed that maximum number of cases was in the age group of 60-69 years. Mean age of cases was 54.77 years and there was predominance of male i.e. 76% of cases in comparison to 24% females. Mean age of control was 51.5 years and there

was predominance of male i.e. 55%. High incidence of stroke in males may be ascribed to their genetic susceptibility and females as usual are protected by female hormones during their child bearing age. In postmenopausal state females are susceptible to stroke in a similar fashion as males.¹ On the analysis of risk factors hypertension came out to be the most common risk factor in stroke patients. Hypertension was present in 96% of patients. High incident of hypertension in our stroke patients may be attributed to the fact that we have taken B.P. of the patients at the time of the admission only. It is a well-known fact even in normotensive subject B.P. may be found high at the time of stroke due to stress and other neuro hormonal mechanisms.

In this present study, among cases 56% cases had MCA Infarct. 18% cases had lacunar infarct. ACA infarct was present in 26%cases. In the Oxfordshire Community Stroke Project, a prospective-based study of 675 consecutive patients with a first-ever stroke, over 90% of patients had CT and/or necropsy examinations.⁸ At 1 year, 35% of those surviving a cerebral infarction were in some way dependent on others, based on the modified Rankin scale. In this study, there was no significant difference in functional dependence at 1 year between patients surviving a cerebral infarction and those surviving primary intracranial hemorrhage or subarachnoid hemorrhage.

In this study, among total 50 cases, Hypertension was present in 48 cases (96%); Diabetes was present in 42 cases (84%). Smokers were 32 (64%). CAD and Alcoholism were the risk factors present in 23 (46%) and 18 (36%) cases respectively. Hemorrhagic strokes appear to be directly related to the level of blood pressure elevation, whereas ischemic stroke is largely accounted for by atherosclerotic lesions of the extracranial and/or intracranial cerebral arteries and by arteriosclerotic changes in small cerebral arteries, which are the hallmark of uncontrolled hypertension, i.e. accelerated atherosclerosis.

In this study, among total 50 patients, 66% cases had high LDL. 82% had low HDL. Hypercholesterolemia hypertriglyceridemia were present in 42% and 20% cases respectively. 30% cases had combined hypercholesterolemia and hypertriglyceridemia. Individuals with higher levels of plasma cholesterol, decreased HDL (high-density lipoprotein) and increased LDL (low-density lipoprotein) have a higher risk of premature atherosclerosis and thus may also have association with stroke.

CONCLUSION

We concluded that hypertension came out to be the most common risk factor in stroke patients. What causes stroke is still an enigma. Lot of factors have been incriminated and high association of stroke with hypertension, diabetes, smoking, alcoholism, dyslipidemia, coronary artery disease has been attributed.

REFERENCES

- Howard G, Howard VJ, Katholi C, Oli MK, Huston S. Decline in US stroke mortality: an analysis of temporal patterns by sex, race and geographic region. *Stroke*.2001; 32: 2213-20.
- Jakovljevic D, Salomaa V, Sivenius J, Tamminen M, Sarti C, Salmi K et al. Seasonal variation in the occurrence of stroke in a Finish adult population: the FINMONICA Stroke Register. *Stroke*. 1996; 27: 1774-9.
- Kelly-Hayes M, Wolf PA, Kase CS, Brand FN, McGurik JM, d'Agostino RB. Temporal patterns of stroke onset: the Framingham Study. *Stroke*. 1995;26: 1343-7.
- Klag MJ, Whelton PK, Seidler AJ. Decline in US stroke mortality: demographic trends and antihypertensive treatment. *Stroke*. 1989;20:14-21.
- Bonita R, Beaglehole R. Does treatment of hypertension explain the decline in mortality from stroke? *B M J*. 1986; 292: 191-2.
- Ross R. Atherosclerosis: an inflammatory disease. *N Engl J Med*. 1999; 340: 115-26.
- Garcia JH, Ho Khang-Loon, Pantoni L. Pathology in Barnett, Henry JM, Mohr JP, Stein BM, Yatsu FM (eds). *Stroke Pathophysiology, Diagnosis and Management*. Third edition, Philadelphia, PA: Churchill Livingstone; 1998.
- Bamford J, Sandercock P, Dennis M, Warlow C, Jones L, McPherson K, Vessey M, Fowler G, Molyneux A, Hughes T A prospective study of acute cerebrovascular disease in the community; the Oxfordshire Community Stroke Project 1981-86. Methodology, demography and incident cases of first ever stroke. *J Neurol Neurosurg Pshchiatry*. 1988 Nov; 51(11):1373-80.

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