

Comparison of Ischemic and Hemorrhagic Strokes in Hypertensive Patients at Tertiary Care Hospital

Comparison of Ischemic and Hemorrhagic Strokes in Hypertensive

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ABSTRACT

Objective: To compare ischemic and hemorrhagic types of stroke in tertiary care hospital.

Study Design: Comparative study

Place and Duration of Study: This study was conducted at the Medical Department of PMC Hospital Nawabshah from August 2018 to January 2019.

Materials and Methods: This study included total 50 patients. All patients were admitted from Medical OPD and emergency department of PMCH Nawabshah. All the patients with clinical features of stroke were admitted. CT Scan was done to diagnose properly and treated accordingly.

Results: Out of total 50 patients, 32 (64%) were male and 18 (36%) were female. Age ranged from 31 to 90 years in males and females. Majority of patients presented from 61-70 years that were 19 (38%) of all. Ischemic stroke was common. It was 36 (72%) whereas hemorrhagic was in 14 (28%).

Conclusion: The incidence of ischemic stroke is common in accordance with age, sex and etiology as compared to hemorrhagic. Age presentation is common from 60 to 70 years.

Key Words: Stroke, Ischemic, Hemorrhagic, CT Scan

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INTRODUCTION

Cerebrovascular disease is the 3rd most common etiology of death in 3rd world. It is the 2nd most common cause of death throughout the globe. World Health Organization reports about 5 million people expiries only in beginning of 21st century and 20% of these deaths occurred in south Asian region. Though there is decrease in incidence of stroke in developed countries but the incidence is still higher in south Asia and is continuously rising.¹

In developing countries, the rate of death due to circulatory disorders is increased among patients suffering from stroke and ischemic heart disease.

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Among white people, the incidence rate is from 80% to 85% whereas 60-70% of Asian and blacks are affected by this disease.²

Stroke is the common complication of hypertension and may be due to cerebral hemorrhage or cerebral infarction. Carotid atheroma and transient cerebral ischemic attacks are common in hypertensive patients.³ Hypertension is a major risk factor for ischemic and hemorrhagic strokes. Hypertension is found in 72-81% of patients with intra-cerebral hemorrhage. 80% of patients with diagnosis of acute stroke are hypertensive at the time of admission in hospital and 30% are classified as hypertensive on long term follow up.⁴

The risk of stroke increases above Blood Pressure levels of 115/75mmHg. This association is steep among adult population. 2/3rd of this burden occurs in middle aged persons aged between 45 to 69 years and 2/3rd occurs in developing countries.⁵

Acute stroke is characterized by the rapid appearance (usually over minutes) of a focal deficit of brain function, most commonly a hemiplegia with or without signs of focal higher cerebral dysfunction (such as aphasia), hemi sensory loss, and visual field defect or brainstem deficits. Weakness on one side of face or body, slurred speech, numbness on affected side, vision changes and balanced difficulties. Hemorrhagic stroke present with sudden headache associated with vomiting, neck stiffness and decreased consciousness.^{6,7}

Computerized Tomography (C.T) is very sensitive and specific for hemorrhage with in first eight days of stroke only, in general, strategies in which most patients were scanned immediately cost least and achieved the most qualities as cost of providing C.T, (even out of hours) was less than cost of inpatient care .⁸

Treatment includes medication, life style changes and least likely surgery. The medications used are aspirin, clopidogrel, heparin,warfarin, ACE inhibitors, beta blockers and anti diabetic medications.⁹

The rationale of our study is to compare the ischemic and hemorrhagic strokes according to age, sex, type of stroke and multiple variations in their presentations so that patients may be diagnosed easily and be advantageous to populace of Pakistan.

MATERIALS AND METHODS

This is a comparative study of 50 patients admitted through Emergency/ medical Outpatient department (MOPD) in medical Department of Peoples Medical College Hospital Nawabshah This study was conducted from August 2018 to January 2019.This is tertiary care hospital receiving and treating the patients of not only but also other provinces of Pakistan.

All the patients admitted had aphasia, hemi-sensory loss and visual filed defect. Physical examination was done to record the BP and pulse rate. Neurological examination was done including the examination of motor and sensory system, Glasgow coma scale (GCS), cranial nerves and higher mental functions. Examination of cardiovascular system was also done. Apart from the routine investigations, CT scan brain and ECG was also done to diagnose the disease. Chi-square test was used to check association between hypertension and type of acute stroke.

RESULTS

A total of 50 stroke patients with history of hypertension were included in this study. Out of these 50 patients 32 (64%) were male and 18 (36%) were female.

Age ranged from 60 to 70 years. Mean age was 60.58, for male it was 61.3 and for females it was 59.2 (Table 1). The frequency of ischemic as well as hemorrhagic stroke was more in males as compared to females (Table 2). It was common in married than unmarried patients. New onset was common than recurrent and new onset was more common in patients suffering from ischemic than hemorrhagic. Crossed hemiplegia was less common as compared to uncrossed one among ischemic stroke patients. In our study, smoking was seen to be major risk factor. Other risk factors found were Diabetes Mellitus, IHD, Atrial

Fibrillation, and alcohol use. Other patients have no any risk factor but Hypertension.

Age ranged from 31 to 90 years in males and females. Majority of patients presented from 61-70 years that were 19 (38%) of all. 32 (64%) patients were male and 18 (36%) were female.

The rate of infarction was 36 (72%) as compared to hemorrhage that was 14(28%). Incidence was higher in 6th and 7th decade of their life. It was higher in males as compared to females. 34 male were affected by this disease whereas only 16 female were suffered from both conditions.

Table No. 1: Distribution of hypertensive stroke patients according to age groups

Age groups	Male	Female	Total
31-40	01	01	02
41-50	5	03	8
51-60	8	5	13
61-70	12	7	19
71-80	5	01	6
81-90	01	01	02
Total	32(64%)	18(36%)	50

Table No. 2: Cummulative distribution of hemorrhage and infarction in various age groups and sex

Age groups	Sex	Infarction	Hemorrhage
31-40	Male	01	02
	Female	00	01
41-50	Male	04	02
	Female	02	01
51-60	Male	5	02
	Female	04	01
61-70	Male	8	03
	Female	6	01
71-80	Male	5	01
	Female	00	00
81-90	Male	01	00
	Female	00	00
Total		36 (72%)	14 (28%)

Table No. 3: Relationship of sexwith type of stroke

Type	Sex		Total
	Male	Female	
Ischemic	24	12	36 (72%)
Hemorrhagic	8	6	14(28%)
Total	32	18	50(100%)

Ischemic and hemorrhagic types were common among male as compared to females. Ischemic was in 24 and 12 in male and females respectively. Hemorrhagic was found to among 8 males and 6 females. Overall, ischemic was common in both genders. It was 36 (72%) whereas hemorrhagic was in 14 (28%) (Table No.3).

DISCUSSION

Stroke is the most common disorder in Pakistan. It is one of the common cause of increasing mortality and morbidity after IHD and Carcinoma. It is the clinical syndrome characterized by sudden onset of focal neurological signs lasting for more than 24 hours. This definition is also verified by WHO.¹⁰

Hypertension has been considered as a major risk factor for stroke and IHD. There is linear relationship between stroke and hypertension as said by Framingham study. This study entails that treating hypertension decreases the incidence of stroke. This implication has been well tested and compared in randomized trials of primary prevention of stroke.¹¹

In studies conducted in Portugal, Poland and Taiwan, male female ratio was 1.2:1, 1.4:1 and 1.6:1 respectively. In our study male incidence is also increased as compared to females. Female ratio in our study is less because females have lesser smoking habit.¹²

The incidence of stroke was found to be highest among patients aged 61 to 70 in our study. Similar observations were reported by Al-Rajeh et al in Saudi Arabia.¹³

The mean age in our patients was 62.35% years. Slightly higher mean age(68 years) was reported by Fonesa et al, in Portugal. However amongst Mexican American population a relatively young mean age was found i.e. 58 years, which they attribute to high prevalence of Diabetes Mellitus in their population.¹⁴

Comparing the type of stroke in hypertensive patients our study showed an increase incidence of infarctive stroke of 36(72%) as compared to hemorrhagic stroke in 14(28%). Different and similar observations are shown by many other populations probably depending upon the environmental, dietary and other social factors, for example: Japanese population showed an incidence of infarctive stroke to be 56%^[13]. Brazilian population showed an incidence of 73% for cerebral infarction, 19% for cerebral hemorrhage and 8% for subarachnoid hemorrhage. American population showed an incidence of infarctive stroke to be 78%. Bamford et al have shown an incidence of 73% for infarctive stroke, 21% for hemorrhagic and 6% for subarachnoid hemorrhage in Great Britain.¹⁵

CONCLUSION

It is concluded that the incidence of ischemic stroke is common among both genders as compared to hemorrhagic. Males are common victim of this disease and commonly come in medical emergency in their 6th and 7th decade of their life. Infarction is common as compared to hemorrhage.

Author's Contribution:

Concept & Design of Study: Shahzad Memon

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