FREQUENCY OF HYPERTENSION IN STROKE PATIENTS PRESENTING AT AYUB TEACHING HOSPITAL

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Background; Stroke is a frequent medical problem occurring in patients with hypertension and other risk factors. The objective of this study was to find the frequency of hypertension as important risk factor in stroke patients presenting at Medical 'B' unit of Ayub Teaching Hospital, Abbottabad from November 2003 to January 2005. **Methods:** Patients who clinically presented with features of stroke and then confirmed on C.T scan were included in this study. Other underlying risk factors were diabetes mellitus, smoking, cardiovascular disease and dyslipidemia. **Result:** Hypertension was found to be the most common risk factor in current study. Out of 91 cases, 51 (56.04%) were suffering from hypertension. Thirty five patients were male and sixteen patients were female. Peak stroke prone age was 61-70 years in males and 51-60 years in females. **Conclusion:** Hypertension is the leading risk factor of stroke. It is therefore essential to detect and treat hypertension at its outset

Keywords: Stroke, Hypertension, Risk factors, CT scan

INTRODUCTION

Stroke is defined as rapidly developing symptoms and/or signs of focal and at times global loss of cerebral function lasting for 24 hrs or more with no apparent cause other than that of vascular origin.[1] According to a consensus statement on stroke 'Every five minutes some one in United Kingdom has a stroke. It is the cause of one in eight deaths and constitutes a formidable burden of disability and misery for the patients and their relatives and the wider community.[2] Stroke makes a considerable contribution to morbidity and mortality and is one of the top four causes of death worldwide.[3] A large number of patients with stroke are being admitted in secondary and tertiary care hospitals in Pakistan. Some of these die in hospitals while a significant proportion are left with partial or total disability. This puts economical and social burdens on the family and society. Measures should be taken to prevent cerebrovascular disease as not only “prevention is better than cure” but cost effective as well.

The incidence and mortality of stroke vary greatly among different populations and has declined considerably in several foreign studies.[4] This is probably the result of better preventive measures. Common risk factors of stroke are hypertension, diabetes mellitus, coronary artery disease, atrial fibrillation, physical inactivity and alcohol. Among these a number of risk factors are modifiable and treatable. Hypertension is a major health problem in Pakistan with a prevalence of 17.9% in adult population; there are an estimated 10 million hypertensives.[5] In this study we investigated presence of hypertension as risk factor in stroke patients presenting at ATH.

MATERIAL AND METHODS

It is a study of 91 patients of stroke admitted in Medical ‘B’ unit of Ayub Teaching Hospital, Abbottabad from November 2003 to January 2005. On admission a detailed history with a special emphasis on hypertension was recorded. Presence of other risk factors like smoking, diabetes mellitus, coronary artery disease, atrial fibrillation and dyslipidemia was also evaluated. General physical and neurological examination was carried out in all patients to diagnose and find possible underlying risk factors of stroke. Transient elevation in blood pressure, which settled without treatment, was disregarded. All patients in study had a C.T scan brain to confirm the clinical diagnosis of stroke. In all cases routine investigations including full blood count, ESR, blood sugar, ECG, complete urine examination, were carried out. In selected patients serum lipid profile, X-ray Chest, echocardiography, Anti Nuclear Antibodies and Prothrombin Time was done.

Patients above 20 years of age of either sex with their C.T scan brain showing cerebral infraction or intracerebral hemorrhage were included in the study. Patient below 20 years of age, those who could not afford C.T scan, having Space occupying lesion on C.T scan and patients with Sub-arachnoid Hemorrhage were excluded from study**.**

RESULTS

Out of 91 Patients with confirmed stroke on C.T scan, 65 (71.42%) patients were male and 26 (28.57%) were female (M: F 2.5:1). Peak stroke prone age 61-70 years in male (25 cases) and 51-60 patients in female (12 cases). Age and sex

distribution of the patients is presented in Table1. Cerebral infraction was found in 65 patients (71.42%) while 26 (28.57%) had intra-cerebral hemorrhage on CT scan. Hypertension was found in 51 (56.04%) patients in which 35 patients were male (68.63%) and 16 patients were female (31.37%). In hypertensive patients infarction was seen in 36 cases (70.6%) and cerebral hemorrhage in 15 cases (29.4%). Out of 36 patients with hypertensive cerebral infarction 25 were male and 11 were female. In hypertensive cerebral hemorrhage 10 were male and 5 were female. Other risk factors were diabetes mellitus, smoking, cardiovascular diseases and dyslipidemia (Table2) and more than one risk factor was present in certain patients.

Table 1: Age and sex breakdown (patients with hypertension in brackets)

Age in years	Male	Female
20-40	5(2)	01
41-50	12(4)	3(1)
51-60	23(12)	12(9)
61-70	25(14)	7(5)
71-80	8(3)	3(1)

Table 2: Risk Factors of Stroke (n=91)

Risk factor	No. of Patients	Percentage
Hypertension	51	56
Diabetes Mellitus	30	33
Smoking	25	27.5
Cardiovascular Diseases	12	13.2
Dyslipidemia	09	9.9

DISCUSSION

The incidence of stroke in UK is 240/100,000 per year. This increases with age and is higher in men than in women.[6] Stroke is probably as common in Pakistan and is responsible for significant mortality, morbidity and financial constraints. In Chinese and Australian studies risk of stroke was higher in hypertensive patients as compared to normotensive patients.[7,8]

Cerebral atherosclerosis with atheroma formation is the basic underlying pathophysiologic mechanism in ischemic stroke. Hypertension is one major risk factor for atherosclerosis. The mechanisms of atherosclerosis in hypertensive patients are thought to be due to injury responses i.e. classical wound contracture mechanisms and vascular re-modeling.[9] The atherosclerotic vessel is more prone to thrombosis and rupture.

The importance of hypertension as a risk factor in stroke is well established.[10,11] Hypertension was found in 56.04% of all cases in our study which is nearly similar to that reported by Fayyaz et al (58%)[12], Khawaja and Shakoor (56%)[13] and Al Rajeh et al (56.4%)[14] and higher than that observed by Raza and Imran (49%)[15] , Vohra et al (50%)[16] and Bornstein et al (52.2%).[17]

In this study male to female ratio of stroke is 2.18 :1, which is higher than that observed by Khawja and Shakoor (1.5:1)[13] and Raza and Imran (1.6:1).11 Higher ratio in male patients is due presence of other risk factor like diabetes and smoking and most of patients belong to older age group.[18]

Peak prone age in this study for males is 61-70 and for females is 51-60 which is quite similar to the figures by Khawaja and Shakoor.[13]

Cerebral infarction (70.6%) was common amongst the patients with hypertension in this study as compared to cerebral hemorrhage (29.4%), which is similar to observe by Raza and Imran10[10] 71.5% and 28.5% respectively. Similar trend is also observed in other studies.[19]

This study, confirms the findings of previous studies performed in Pakistan that hypertension is the leading risk factor of stroke. It is therefore essential to detect and treat hypertension at its outset.

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