ORIGINAL ARTICLE

Hypertension an Important Risk Factor for Stroke : A Study of 100 Cases in A Tertiary Care Hospital.

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Abstract :

Stroke is one of the commonest causes of death and disability in the world. Early detection and correction of risk factors, particularly the major and modifiable risk factors is the mainstay of controlling stroke. The present cross sectional hospital based study was carried out on 100 patients in Holy Family Red crescent Medical College Hospital to evaluate the correlation of hypertension with stroke as an important risk factor and the result of the study was compared with similar types of studies carried out at home and abroad. One hundred hospitalized patients of stroke were chosen randomly for the study. Male patients were more than female with ratio of 1.93:1. Majority of stroke patients were elderly 50 years and above (88%). Most of the patients came from middle and higher socioeconomic status. Hypertension was observed as the most common (82%) risk factor for stroke. Among them most of the patients were known hypertensive (90%) but were getting irregular treatment and only 10 percent cases were newly diagnosed. Most of the patients were hypertensive for 1-5 years.

Introduction :

Stroke is the third leading cause of death after heart disease and malignant disease. All over the world, morbidity of stroke is also one of the important family, social and country burden as well, which demands serious medical, socio-economic and rehabilitation issue[1]. The term stroke can be defined as a focal neurological deficit of sudden onset occurring as a result of non traumatic pathological process involving the blood vessels of the brain. So the patient having a stroke is diagnosed as cerebro-vascular disease / accident (CVD/CVA)[2].

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In developed country, there is an over all prevalence of stroke is 794 per million populations. In the United States it is estimated that more than 400,000 patients are discharged each year from hospitals after a stroke. In Bangladesh adequate data is lacking. On the incidence and mortality from stroke, never the less the gravidity of the situation can easily be assessed by the high incidence of hospital admission for similar illness. In 2003 it was found that stroke was the third commonest cause of emergency admission in Holy Family Red Crescent Medical College Hospital, Dhaka. So the loss of those affected persons form their work and the extended hospitalization for recovery make a great economic impact of the disease. The risk factors of stroke[3] can be divided into; Major risk factors that include advanced age, arterial hypertension, cigarette cigarette smoking, diabetes mellitus, hyperlipidaemia, and thrombotic manifestations1. Other risk factors are i) Positive family history ii) High alcohol intake iii) Oral

contraceptives iv) Heart diseases v) Collagen vascular diseases and vi) Past history of CVD. Many studies have been done abroad in this field but only a limited study has been conducted in Bangladesh.

Regarding management of stroke total cure of the disease in most of the patients can not be claimed but can be prevented to some extent by early detection and proper treatment of the risk factors. In the context of limited facilities for management of stroke patients in our country attempt of prevention of stroke is much essential.

In this hospital based retrospective study, effort was made to identify the major risk factors present either isolated or in combination. Though the study was limited to one hospital and does not reflect the over all situations but will give a leading impression about the importance of hypertension and relative importance of other major risk factors in relation to stroke and will draw attention of other researchers to undertake large scaled study in future which is still lacking in our country.

Materials and method :

It is a retrospective cross sectional study carried out in hospitalized patients with stroke in the Department of Medicine and Neurosurgery of Holy Family Red Crescent Medical College Hospital, Dhaka from November 2005 to April 2006. Consecutive 100 patients of stroke either ischaemic or hemorrhagic presented with clinical features of stroke and subsequently diagnosed and confirmed by CT scan of brain were included in the study.

The study included those patients who fulfill the definition of stroke with history taking from the patient or his/her attendants and full physical examination. Investigations including CT Scan of brain were done in all the patients in support of diagnosis and to identify the prevailing risk factor/ factors

Patients who did not give the history properly on having no responsible attendants who can give the patient's history in an acceptable way were excluded

After an initial clinical diagnosis being established further detailed history regarding risk factors like hypertension, diabetes mellitus, obesity, cigarette, smoking, family history, oral pills, alcohol intake, bleeding disorders, thrombotic manifestations and head trauma were taken from the patient / attendant.

One hundred hospitalized patients of stroke were chosen at a random selection method for this study.

Results :

One hundred stroke patients were studied by elaborate history taking, meticulous clinical examination and by all appropriate investigations in view to confirm the diagnosis as well as to identify the risk factors / factors present.

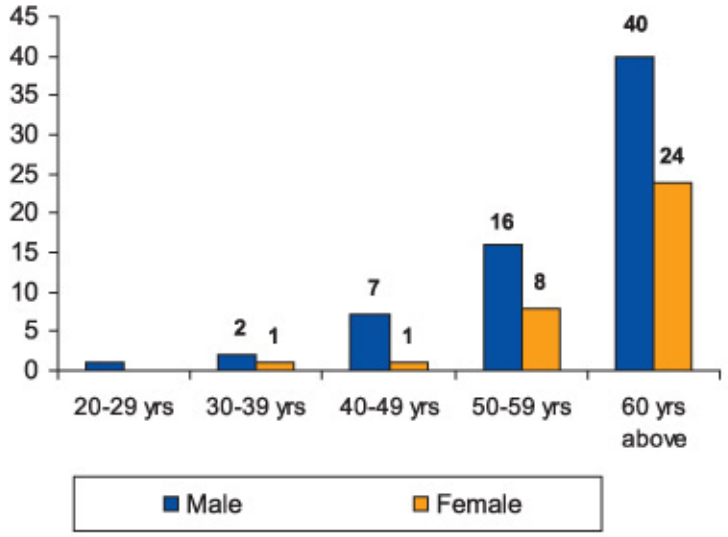
Finally all the collected data are expressed in frequency and percentage and they are tabulated in numerical tables. Some are expressed in graph and some are in pie chart.

Table -I : Age distribution of the patients under study (n=100)

Age (Years)	Number of patients	Percentage
<20	0	0%
20-29	1	1%
30-39	3	3%
40-49	8	8%
50-59	32	32%
60 yrs and above	56	56%

In this series the maximum number of stroke patients (88%) is above 50 years age group.

Figure-1: Age distribution of the stroke patients in male and female



In this study there was male preponderant. In the age group 60 and above male was 40% and female was 24%.

This series shows ischaemic and haemorrhagic stroke are 72% and 28% respectively.

Table- II : Association of major risk with the stroke patients

Risk factors	Numbers of patients	Percentage
Arterial hypertension	82	82%
Cigarette smoking	40	40%
Diabetes mellitus	16	16%
Hyperlipidemia	10	10%
Thaombotic manifestation	5	5%

In this series, it was obvious that hypertension was the most common risk factor (82%), the next common associations were smoking 40% and then diabetes (16%) and hyperlipidemia (10%) respectively. Multiple risk factors were also observed in many patients.

Table-III: Duration of hypertension (n=82)

Blood pressure status	Numbers of patients	Percentage
1st time detected on admission	10 1	2.19%
1-5 years	34	41.46%
5-10 years	24	29.27%
> 10 years	14	17.07%

Among hypertensive patients most were having hypertension for 1-5 years duration (41.46%) nest 5-10 years (29.27%), > 10 years (17.7%) and newly detected cases (12.19%) respectively.

Hypertensive patients were (82%) and non- hypertensive were (18%).

Table- IV : Distribution of hypertensive patients on the basis of treatment of hypertension (n=82)

Pattern of treatment	Number of patients	Percentage
Detected on admission	10	12.20%
Irregularly treated	62	75.60%
Regularly treated	10	12.20%

In this series majority of the patient (75.60%) having hypertension were getting irregular treatment.

Discussion :

In this cross sectional study, a total of one hundred patients having stroke were studied, clinical presentation varied in patient to patient. Major risk factors among these patients were of aged 50 years and above (88%) and above 60 years age group (56%) in this study the frequency of stroke is increases with in creasing age, that correlates with the results of similar studies in home and abroad[4]. In this study 66 percent patients were male and 34 patients were female stroke attested males were 1.93 times more than female and the ration being 1.93:1 which correlates with results of others studies[4]. But a similar study by Mannan and Alamgir[5] showed significant difference (M:F=4:1).

In this study 72% of patients had ischaemic stroke and 28% patients were haemorrhagic Hasanuzzaman found 68% ischemic stroke and 32% haemorrhagic. Jammovic[6] found 77.34 percent ischaemic and 22.66 percent haemorragic stroke. So the study correlates with similar study in home and abroad.

In the present study it is obvious that hypertension is the most common risk factor 82 percent. Among the hypertensive group most were having hypertension for 1-5 year 41.46%, next 29.27 % were hypertensive for more them 5 years. In another study in BIRDEM by latif et al[7] 50.30% with NIDDM and were also hypertensive. In WHO collaborated study on stroke in Japanese center association of hypertension with stroke was 75% and in Ulan Batar (Mongolia) the incidence of hypertension to stroke patient was similarly high[8]. In a multifactorial analysis of risk factors, found the association of hypertension in more than 60% of patients[9]. Haque and Mannan MA[10] have shown that more than on third of stroke patients were they suffered the stroke. This implies the lack of awareness of hypertension.

Ischaemic heart disease definitely augments the risk of stroke[12]. In an study in Britain on middle aged Brithish man[13] it has been shown that a four fold in crease in risk of stroke with that of ischaemic heart disease. Hypertension is also an important risk factor of ischaemic heart disease. So prevention detection and proper management of hypertension along can bring down the incidence of stroke[11].

Conclusion :

In this small study one hundred hospitalized stroke patients may not reflect the exact situation of the disease in the community but reflects its proximity to the reality cannot be underestimated. Maximum emphasis was given to detect the major risk factors of the observed patients.

Among the observed risk factors detected in the patients group, hypertension remains the most important, which need maximum attention for the prevention of stroke. Along with this, DM, hyperlipidemia and smoking should also be prevented for betterment of people. Screening programme for hypertension, diabetes and other risk factors can be taken on a large scale basis for middle aged to elderly groups of people. So that appropriate measures can be adopted in appropriate time.

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