FREQUENCY OF STROKE IN HYPERTENSIVE PATIENTS

Dr. Ashok Kumar Lohano, Dr. Adnan Samie, Dr. Noor Nabi Siayal

ABSTRACT... Objective: To determine the frequency of intracerebral hemorrhage in hypertensive patients. Study design: Cross sectional study. Setting: This study was conducted at Medical department of Peoples Medical College & Hospital Nawabshah, from 01-01-2012 to 31-12-2012. Material and methods: Admitted patient through emergency department with history of hypertension more than two years, meeting the inclusion criteria taken consent from attendant. Patient was referred for C.T scan brain presence of hyperdense area was considered as intracerebral hemorrhage. Inclusive criteria were age >20 years, either sex and patients with history of hypertension more than two year with any two or more sign and symptoms like sudden unconsciousness or with hemiplegia, hemiparesis, dysarthria. Aphasia, cranial nerve palsies. Exclusion criteria were age less than 20 years, normotensive patients with cerebral hemorrhage and patients with traumatic hemorrhage. Results: Among 281 patients that had stroke, there were 147 males and 134 females with a sex ratio males: female 1:1. Mean age of patients admitted with intracerebral hemorrhage was 37.89 ± 7.33 years with an average age among males and females was same. Duration of hypertension was greater than 20-25 years in most of the patients nearly 63.7%. Patients with long duration of diabetes and hypertension presented with intracerebral hemorrhage. Nearly all the patients with intracerebral hemorrhage were smokers 145, only 2 patients were non smokers and nearly all had long history of smoking. The 127 patients who presented with intracerebral hemorrhage were obese. All risk factors were statistically significant and were responsible for intracerebral hemorrhage. Conclusions: Hypertension is a risk factor for intra cerebral hemorrhage. An effort should be made to control blood pressure and other modifiable risk factors to reduce incidence of intra cerebral hemorrhage and improve patient outcomes.

Key words: Intra cerebral hemorrhage, Hypertension, Diabetes.
30 cases per 100 000 persons in the western countries. The worldwide incidence of stroke has variation from nation to nation, suggesting the importance of genetic and environmental factors. According to WHO, 15 million people suffering from stroke worldwide each year.

Intracerebral hemorrhage has a high morbidity and mortality, in hospitalized patients worldwide. Diagnosis is mostly clinical but it was wrong in 10-15% of cases so the brain imaging is necessary for accurate diagnosis like CT scan brain MRI brain, which are helpful to rule out stroke mimics and clinical management. Intracerebral hemorrhage and subarachnoid hemorrhage are managed by supportive therapy and prevention of the complication by controlling the blood pressure and intracranial pressure through medication and ventriculostomy.

The rational of study is as that data is deficient on the topic although study is done without appropriate sample size so the prevalence of intracerebral hemorrhage is questionable therefore the present study is design to estimate the actual magnitude of intracerebral hemorrhage in hypertensive patients so strategy could be develop to screen hypertensive patients and compliance insured, so that the morbidity could be reduced and decrease the economical burden and disability.

MATERIAL AND METHODS
This study was conducted at Medical department of Peoples Medical College & Hospital Nawabshah, from 01-01-2012 to 31-12-2012. Admitted patient through emergency department with history of hypertension more than two years, meeting the inclusion criteria taken consent from attendant. Patient was referred for C.T scan brain presence of hyperdense area was considered as intracerebral hemorrhage. Inclusive criteria were age ≥20 years, either sex and patients with history of hypertension more than two year with any two or more sign and symptoms like sudden unconsciousness or with hemiplegia, hemiparesis, dysarthria. Aphasia, cranial nerve palsies. Exclusion criteria were age less than 20 years, normotensive patients with cerebral hemorrhage and patients with traumatic hemorrhage. The collected data was entered and analyzed by using Statistical Package for Social Sciences (SPSS) software, Version 17. Effect modifier like age, gender, durations of hypertension and D.M, smoking and obesity was control through stratification applying chi square test. P value < equal to 0.05 was taken as significant.

RESULTS
Among 281 patients that had stroke, there were 147 males and 134 females with a sex ratio males: female 1:1. Mean age of patients admitted with intracerebral hemorrhage was 37.89 ± 7.33 years with an average age among males and females was same. Of 281 hypertensive patients 147(52.3%) patients presented with intracerebral hemorrhage, while the rest 128 (45.5%) presented with ischemic stroke and 6 patients (2.2%) had subarachnoid hemorrhage. Of 281 hypertensives there were 158(56.2%) diabetics, 154 (54.8%) smokers, 139(49.5%) obese (Table No.I). Duration of hypertension was greater than 20-25 years in most of the patients nearly 63.7% as shown in figure 1. Patients with long duration of diabetes and hypertension presented with intracerebral hemorrhage. Nearly all the patients with intracerebral hemorrhage were smokers 145, only 2 patients were non smokers and nearly all had long history of smoking. There were 127 patients who presented with intracerebral hemorrhage were obese. All risk factors were statistically significant and were responsible for intracerebral hemorrhage.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Frequency and percentage (n=281)</th>
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<tbody>
<tr>
<td>Age mean ± SD</td>
<td>37.89 ± 7.33</td>
</tr>
<tr>
<td>Smoking</td>
<td>154 (54.8%)</td>
</tr>
<tr>
<td>Obesity</td>
<td>139 (49.5%)</td>
</tr>
<tr>
<td>Intracerebral hemorrhage</td>
<td>147 (52.3%)</td>
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<tr>
<td>DM</td>
<td>158 (56.2%)</td>
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Table-I. Demographic & clinical variables among patients
DISCUSSION

Stroke is the third most common cause of death and leading cause of disability in developing and developed countries. WHO estimates nearly 20% of deaths in South Asia. As no large scale, community based epidemiological studies are available in Pakistan, but annual incidence is nearly 250/100,000. The highest prevalence reported in Pakistan was in adult Pushtoon community in Karachi i-e; 4.8%, which is the highest ever reported prevalence in the world. Ischemic strokes being more common than hemorrhagic strokes, but the rate of hemorrhagic stroke is higher compared to Western population.

In our study the frequency of intracerebral hemorrhage seen in hypertensives were 52.3% which was most commonly seen among males. This ratio was consistent with previous studies on gender, as rate in men has been declined from 2.8% in 2006 to 2.5% in 2009, and then increased to 2.7% in 2010. In our study three quarters of all the patients presented with intracerebral hemorrhage were under 50 years of age and the remaining one fourth were less than 65 years. However, Khan JA et al reported 26% of patients in 15-45 years of age. Syed et al reported a frequency of 28% of young stroke under age of 55 years. Strokes can occur at any age but risk doubles each decade after age of 55 according to American Heart Association. Vohra et al also reported 34% of patients fewer than 55 years of age. Among Americans age 65 and older prevalence is 40/1000 persons and one in 10 Americans over 75 has experienced stroke.

The major vascular risk factors like hypertension, diabetes mellitus, smoking, dyslipidaemia and obesity is enormous in Pakistan. In our study, hypertension was the risk factor for the intracerebral hemorrhage. Longer the duration of hypertension, more was the incidence of the stroke. Hypertension is the leading cause of stroke especially intracerebral hemorrhage, but this rate is declining in developed countries largely due to efforts to control blood pressure and smoking. In Pakistan, a cross sectional survey conducted in tertiary care hospital revealed 39% of the people who had hypertension, dyslipidaemia and history of active smoking were in age range of 18-55 yrs. Only 40% of hypertensive patients had controlled blood pressure. It is also more prevalent in Southeastern region of the United States. The Framingham Heart Study showed the declining response of stroke over past 50 years, but lifetime risk is declining at a slower rate.

Other common risk factor is diabetes, which in our study was present in 56.2% of cases. Usually the patient which presented with stroke were of male gender with duration of diabetes was 5-10 years in most of cases. However previous studies showed 27-42% cases with diabetes. Study in 2004, in tertiary care hospital showed a much less incidence of diabetes among patients with stroke i-e; 15%. Same study showed incidence of obesity 24% of cases. In our study, there were 26% of cases who were obese according to WHO criteria.

While the other modifiable risk factor like smoking was found in half of the cases i-e; 54.8% and showed statistically significant correlation with intracerebral hemorrhage. Study of 100 patients conducted in 2008, smoking reported to account for 94.7% of cases of stroke both hemorrhagic and ischemic stroke. While another study on risk factors of stroke showed 43% of smokers. Our
study was consistent with the findings of the previous studies; therefore the efforts should be made to reduce these modifiable risk factors in order to overcome this disabling disease.

CONCLUSIONS
Hypertension is an important risk factor for intracerebral hemorrhage. An effort should be placed to control blood pressure and other modifiable risk factors to reduce incidence of intracerebral hemorrhage and improve patient outcomes.

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“Raise your words, not voice. It is rain that grows flowers, not thunder.”

Hazrat Ali (R.A)