INTRODUCTION

Stroke, also called cerebrovascular accident (CVA) is an acute neurological dysfunction of the brain which is usually due to disruption of the cerebral blood supply. Traditionally, it is divided into ischemic (85%), and hemorrhagic (15%). It is the second leading cause of death worldwide. Approximately 15 million people worldwide suffer from stroke annually, of these more than 5.5 million die, another 5 million are left with permanent disability, posing burden on the family and community. Despite the decline of this disease in developed countries, its burden in South Asian countries has increased and is expected to rise. In Pakistan no exact incidence of stroke is available, but there is estimated incidence of 250/100,000, translated to 350,000 new cases every year.

There are several risk factors which predispose to stroke. These can be broadly divided into non-modifiable and modifiable. The non-modifiable are, age, sex, race, ethnicity, and family history of stroke. Major modifiable risk factors are hypertension, diabetes, cardiovascular diseases, hyperlipidemia, cigarette smoking, alcohol, and sedentary life style. Prevention of risk factors remains an important approach to reducing the incidence, recurrence, disability and mortality of stroke.

This study aimed to find out the prevalence of common modifiable risk factors among patients admitted to teaching hospitals of Bannu.

MATERIAL AND METHODS

This study descriptive was conducted from January 2011 to December 2011, on the patients admitted to the medical wards of DHQ Teaching Hospital, and Khalifa Gul Nawaz Teaching Hospital Bannu. History and thorough clinical examination was performed and recorded on printed proforma to gather all relevant information. CT scan brain was done to confirm the diagnosis of stroke. Other necessary investigations were also performed for the evaluation of risk factors. All the patients with tubercular meningitis, brain tumor, encephalitis, multiple sclerosis, were excluded. Stroke was defined as focal neurological deficit due to vascular event in the brain. Hypertension was diagnosed as patient taking anti-hypertensive drugs, or blood pressure 140/90 mmHg or more. Diabetes mellitus was diagnosed according to WHO criteria.
Hyperlipidemia was diagnosed if the patient total cholesterol, LDL, and HDL cholesterol were abnormal according to NCEP 111 Guidelines.

RESULTS

A total of 56 patients with stroke confirmed on CT brain were selected for the study. Out of these, 34 (61%) were males and 22 (39%) females, with male to female ratio of 1.5:1. The mean age was 57.5 years.

Cerebral infarction was found in 37 (66%) patients, while 19 (34%) were having hemorrhagic stroke.

Hypertension was the most common risk factor, 36 (64%). The number of male hypertensive patients was double than females (24 male 12 female). Hypertension was present in 15 (41%) of infarct and 14 (74%) of hemorrhagic strokes. Other risk factors were diabetes mellitus in 14 (25%), hyperlipidemia in 10 (18%), cardiovascular disease in 10 (18%), previous history of TIA or stroke in 4 (7%), cigarette smoking in 3 (5%), and obesity in 2 (3.5%).

Table 1: Age and sex distribution of patients with stroke.

<table>
<thead>
<tr>
<th>Age group (years)</th>
<th>Sex</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
</tr>
<tr>
<td>25-34</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>35-44</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>45-54</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>55-64</td>
<td>13</td>
<td>7</td>
</tr>
<tr>
<td>65-74</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>&gt;75</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>Total</td>
<td>34</td>
<td>22</td>
</tr>
</tbody>
</table>

Table 2: Modifiable risk factors in stroke patients (n=56).

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Risk factors</th>
<th>Males</th>
<th>Females</th>
<th>Total</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Hypertension</td>
<td>24</td>
<td>12</td>
<td>36</td>
<td>64%</td>
</tr>
<tr>
<td>2</td>
<td>Diabetes mellitus</td>
<td>8</td>
<td>6</td>
<td>14</td>
<td>25%</td>
</tr>
<tr>
<td>3</td>
<td>Hyperlipidemia</td>
<td>6</td>
<td>4</td>
<td>10</td>
<td>18%</td>
</tr>
<tr>
<td>4</td>
<td>Cardiovascular diseases</td>
<td>7</td>
<td>3</td>
<td>10</td>
<td>18%</td>
</tr>
<tr>
<td>5</td>
<td>Previous TIA/stroke</td>
<td>3</td>
<td>1</td>
<td>4</td>
<td>7%</td>
</tr>
<tr>
<td>6</td>
<td>Obesity</td>
<td>2</td>
<td>0</td>
<td>2</td>
<td>3.5%</td>
</tr>
<tr>
<td>7</td>
<td>Cigarette smoking</td>
<td>3</td>
<td>0</td>
<td>3</td>
<td>5%</td>
</tr>
</tbody>
</table>

DISCUSSION

Stroke is the leading cause of morbidity and mortality in the elderly people. The stroke incidence increases with advancing age, more in males than females.10 Our study showed 34 males and 22 females. The age range was 25-90 years with a mean age 57.5 years which is lower than Kamal et al (63.4 years) and much lower than USA which is 70 years. This difference may be due to better awareness and control of risk factors in USA. The other reason may be that most of our people and especially females are uneducated and they do not know exactly of their ages. In our study male to female ratio was 1.5:1, which is similar to other studies.10-12

Ischemic stroke was reported in our study as 66% and hemorrhagic stroke as 34%, which is similar to other studies.10,11 In our study we found 5% case of subarachnoid hemorrhage.

Among the modifiable risk factors, hypertension was the most common which is similar to other studies in Pakistan.10-13 Scientific review has shown that hypertension, smoking and physical inactivity increases the risk of stroke by a relative risk of 25-40%, 25%, and 25% respectively. Blood pressure reduction of 5-6 mmHg systolic and 2-3 mmHg diastolic would result in 40% fewer strokes.14 Diabetes was reported in our study as 25%, which is lower than other local studies.15 Diabetic patients are at greater risk for stroke as these patients may have hypertension and hyperlipidemia.

Hyperlipidemia was present in 18% in our study which closely resemble another local study conducted in nearby district D.I.Khan by Kamal et al.10

Other risk factors were, cardiovascular diseases (16%), of these 10 patients, 3 were young and suffering from atrial fibrillation. Patients with valvular atrial fibrillation have 17 fold higher risk of
acquiring stroke. In our study all the cases of atrial fibrillation were of valvar origin.

Although cigarette smoking is an important risk factor for ischemic heart disease and stroke, our study showed 5% of smoking which is lower than other studies (44.4-53%),16 this may be due to the reason that people in Bannu district use oral snuff (naswar) instead of smoking.

In our study obesity was 3.5%. It may be due to the reason that most of our patients belonged to rural areas.

No case of alcohol intake was found in our study. Alcohol consumption of more than 60 g/day is associated with increased risk of stroke.17

CONCLUSION

The major modifiable risk factors for stroke in our set-up are hypertension, diabetes mellitus, cardiovascular disease and hyperlipidemia.

Awareness of these risk factors will be helpful in prevention of stroke.

REFERENCES


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