

## CEREBROVASCULAR STROKE - SPECTRUM

M. NARAYANA SWAMY, NAGAPPA H. HANDARGAL, PRABHU S. & JANANI MURALIDHARAN

Department of Medicine, Bangalore Medical College and Research Institute, Fort Road, Bangalore, India

### ABSTRACT

The aim is to know the incidence of cerebrovascular stroke and spectrum in tertiary care hospitals. A cross sectional study conducted at Bowring and Lady Curzon hospitals, BMCRI, Bangalore during 2014 total 100 patients were considered for the study. The data was obtained by the pretested questionnaires. Collected data were analyzed by the SAS - 16.50 versions. The CT- scan images was observed and correlate with the presenting symptoms and clinical features and it was found to be hemorrhage 17.0%, INFARCT 63.%. Finally we have infract with the final outcomes as per the spectrum the total 36.0% improvement was observed ; against advice was 39.0%. Only ignorable mortality was acquainted 2.0% and 23.0 % were unresolved cases presenting the final outcome of the present study. The Intensive Blood Pressure Reduction in Acute Cerebral Haemorrhage showed that aggressive blood pressure lowering reduced hematoma growth in patients with intracerebral hemorrhage when started within 6 hours of symptom onset.

**KEYWORDS:** INFARCT, Cerebrovascular Stroke, CT- Scan, Hypertension

### INTRODUCTION

Cerebrovascular accident is the sudden death of some brain cells due to lack of oxygen when the blood flow to the brain is impaired by blockage or rupture of an artery in the brain. A CVA is also referred to as a stroke. Symptoms of a stroke depend on the area of the brain affected. The most common symptom is weakness or paralysis of one side of the body with partial or complete loss of voluntary movement or sensation in a leg or arm. There can be speech problems and weak facial muscles, causing drooling. Numbness or tingling is very common. A stroke involving the base of the brain can affect balance, vision, swallowing, breathing and even consciousness. A stroke is a **medical emergency**. Anyone suspected of having a stroke should be taken immediately to a medical facility for diagnosis and treatment. The causes of stroke: An artery to the brain may be blocked by a clot (thrombus) which typically occurs in a blood vessel that has previously been narrowed due to atherosclerosis ("hardening of the artery"). When a blood clot or a piece of an atherosclerotic plaque (a cholesterol and calcium deposit on the wall of the artery) breaks loose, it can travel through the circulation and lodge in an artery of the brain, plugging it up and stopping the flow of blood; this is referred to as an embolic stroke. A blood clot can form in a chamber of the heart when the heart beats irregularly, as in atrial fibrillation; such clots usually stay attached to the inner lining of the heart but they may break off, travel through the blood stream, form a plug (embolus) in a brain artery and cause a stroke. A cerebral hemorrhage (bleeding in the brain), as from an aneurysm (a widening and weakening) of a blood vessel in the brain, also causes stroke. The diagnosis of stroke involves a medical history and a physical examination. Tests are done to search for treatable causes of a stroke and help prevent further brain damage. A CT scan and MRI of the brain is often done to show bleeding into the brain; this is treated differently than a stroke caused by lack of blood supply. A CT scan also can rule out some other conditions that may mimic a stroke. An electrical wave of the heart (echocardiogram) may be done to look for ischaemia in the heart.

Narrowing of the carotid artery (the main artery that supplies blood to each side of the brain) in the neck can be seen with a soundwave test called a carotid ultrasound. Blood tests are done to look for signs of inflammation which can suggest inflamed arteries. Certain blood proteins are tested that can increase the chance of stroke by thickening the blood. The aim is to know the incidence of Cerebrovascular stroke and spectrum in tertiary care hospitals

## MATERIALS AND METHODS

A cross sectional study conducted at Bowring and Lady Curzon hospitals, BMCRI, Bangalore during 2014 total 100 patients were considered for the study .The data was obtained by the pretested questionnaires. Collected data were analyzed by the SAS - 16.50 version. Univariate analysis was employed to test the significant inference. Signs and symptoms of a stroke depend upon the part of the brain affected and how much damage occurred. During a CVA, we have considered the numbness (no feeling), tingling, weakness, or paralysis (cannot move) on one side of the body and also disturbed walking, swallowing, talking, or understanding. vision (sight) may be blurred or doubled. feel dizzy, confused. These signs or symptoms may appear within minutes to hours.

### Inclusion Criteria

Patients more than 18 years of age

History of the patients was considered

Patient motor functions.

### Exclusion Criteria

Patients less than 18 years of age

Patients with chronic diseases

## RESULTS

**Table 1: Descriptive Statistics and Final Outcome of the Cerebral Stroke**

| SL | Variables                                     | No (%) | Mean±SD                | CI-95%      | P-Value |
|----|---|--------|------------------------|-------------|---------|
| 01 | <b>Gender</b><br><b>Male</b><br><b>Female</b> |        | 36(36.0%)<br>64(64.0%) |             | 0.01**  |
| 02 | <b>Age</b>                                    | 100    | 58.25±13.50            | 54.21-62.33 | 0.00**  |
| 02 | <b>Sensory</b><br><b>Yes</b>                  |        | 90(90.0%)              |             | 0.00**  |
| 03 | <b>Cognitive</b><br><b>Yes</b>                |        | 22(22.0%)              |             | 0.02*   |
| 04 | <b>Mean duration(Days)</b>                    | 100    | 1.75±1.02              | 0.56-2.20   | 0.36    |
| 05 | <b>Hypertension</b><br><b>Yes</b>             |        | 63(63.0%)              |             | 0.01*   |
| 06 | <b>Diabetics</b><br><b>Yes</b>                |        | 48(48.0%)              |             | 0.02*   |
| 07 | <b>IHD</b><br><b>Yes</b>                      |        | 06(6.0%)               |             | 0.56    |
| 08 | <b>Hypercholestrolemia</b>                    |        | Nil                    |             | -       |
| 09 | <b>Stroke H/o</b>                             |        | 15(15.0%)              |             | 0.32    |
| 10 | <b>Smoking</b>                                |        | 17(17.0%)              |             | 0.35    |
| 11 | <b>Alcoholic</b>                              |        | 12(12.0%)              |             | 0.44    |

| <b>Table 1: Countd.,</b> |                             |           |        |
|--------------------------|-----------------------------|-----------|--------|
| 12                       | <b>Clinical fetures</b>     |           |        |
|                          | <b>Cranial nerve</b>        | 36(36.0%) | 0.02** |
|                          | <b>Motor</b>                | 66(66.0%) | 0.00** |
|                          | <b>Sensory</b>              | 05(5.0%)  | 0.22   |
|                          | <b>Cerebellar</b>           | 03(3.0%)  | 0.56   |
|                          | <b>Meningeal irrigation</b> | 02(2.0%)  | 0.23   |
|                          | <b>CVS</b>                  | NIL       | -      |
|                          | <b>Crepts</b>               | 06(6.0%)  | 0.14   |
|                          | <b>ECG-WNL</b>              | 21(21.0%) | 0.02*  |
|                          | <b>ECG-LVHAD</b>            | 04(4.0%)  | 0.62   |
|                          | <b>ECG-LVH</b>              | 12(12.0%) | 0.01*  |
| 13                       | <b>CT-Scan</b>              |           |        |
|                          | <b>Hemorrhage</b>           | 17(17.0%) | 0.00*  |
|                          | <b>INFARCT</b>              | 63(63.0%) | 0.00*  |
| 14                       | <b>Out comes</b>            |           |        |
|                          | <b>Improvement</b>          | 36(36.0%) | 0.01*  |
|                          | <b>Against advice</b>       | 39(39.0%) | 0.00** |
|                          | <b>Death</b>                | 02(2.0%)  | 0.66   |
|                          | <b>Unresolved</b>           | 23(23.0%) | 0.01*  |

\*\* ,Significant @15 level

The mean age of the patients was 58.25 years with mean duration 1.75 days. Male comprises 64% out of cent percent. The risk factors was correlated by using univariate analysis as per the results the hypertension was 63%, smoking - 15% and alcoholic was 12.0%. the incidence of stroke with respect to age and sex were found to be statistically significant ( $p < 0.01$ ). Clinical features was evaluated - Cranial nerve accounted 36.0%, motor 66.0% sensory 5.0% cerebella 3.0%, meningialirrigation 2.0%. All the parameters of presenting symptoms was associated and statistically significant with the incidence rate of cerebral stroke's. The CT - scan images was observed and correlate with the presenting symptoms and clinical features and it was found to be hemorrhage 17.0%, INFARCT 63%. Finally we have infract with the final outcomes as per the spectrum the total 36.0% improvement was observed ; against advice was 39.0%. Only ignorable mortality was acquainted 2.0% and 23.0 % were unresolved cases presenting the final outcome of the present study Table 1

## DISCUSSIONS

By gaining a better understanding of host and environmental factors contributing to stroke still more effective preventive measures can be promulgated. There is reason to be optimistic that continued attention to and modification of stroke and cardiovascular disease risk factors will continue to yield major dividends in diseaseprevention<sup>6</sup>. Better appreciation of cardiac risk factors in embolic stroke such as nonvalvular or lone Atrial Fibrillation, of other sources of emboli such as mitral valve prolapseor mural thrombi following myocardial infarction should yield benefits in prevention of stroke or stroke recurrence. Use of aspirin in persons with minor or threatened stroke has also been shown to be effective. A host of new agents are available to decrease infarction in an ischemic area. More importantly these drugs are being studied in a systematic fashion that should permit identification of efficacious agents and determine the dosage that is safe and effective<sup>1</sup>. It has been suggested, on the basis of Rochester, Minnesota data that spontaneous Subarachnoid Hemorrhage, which is almost entirely secondary to bleeding from ruptured berry aneurysm, is the only stroke type that has not declined. However, recent data have shown a decline in death rates for SAH in New Zealand."It is unlikely that this

decline is related to improved survival following subarachnoid hemorrhage, which has remained quite constant over the past 30 years, and is probably due to declining incidence of this disease.<sup>12</sup> Studies of women on Oral Contraceptives have shown an increase in fatal subarachnoid hemorrhage from aneurysm in women above age 35.<sup>7</sup> The striking decline in stroke mortality confirms the presence of modifiable environmental factors in stroke occurrence. The decline was initially noted in intracerebral hemorrhage by clinicians who identified a decreased frequency of hemorrhage and a 10 year "delay" in onset of this disease, both of which they attributed to more effective treatment of severe hypertension.<sup>2</sup> The decline in incidence of hemorrhage was confirmed in Rochester, Minnesota where a decline in ischemic stroke was also found.<sup>3</sup> Key to the decline in stroke mortality has been the identification of hypertension as the major risk factor for stroke, whether the stroke mechanism is hemorrhage or infarction, and the demonstration that treatment will reduce stroke and stroke death.<sup>1</sup><sup>6</sup> In controlled clinical trials treatment of severe and moderately severe diastolic hypertension conducted in the late 1960s, demonstrated the efficacy of blood pressure lowering in stroke prevention.<sup>7</sup> More recently, treatment of mild hypertension (diastolic pressure 90-109 mm Hg.) in a placebo-treatment trial, <sup>8</sup>

## CONCLUSIONS

The Intensive Blood Pressure Reduction in Acute Cerebral Haemorrhage showed that aggressive blood pressure lowering reduced hematoma growth in patients with intracerebral hemorrhage when started within 6 hours of symptom onset. Whether early and aggressive therapy is also beneficial in terms of eventual clinical outcome in this patient

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