

## STUDY OF THE CLINICAL PRESENTATION OF PATIENT IN ACUTE STROKE

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**ABSTRACT: INTRODUCTION:** Cerebrovascular disease is the third most common cause of death in the developed world after cancer and ischaemic heart disease. Stroke is a common medical emergency with an annual incidence of between 180 and 300 per 100000. **AIMS AND OBJECTIVES:** To know the incidence of clinical presentation of patients in acute stroke. **MATERIALS AND METHODS: INCLUSION CRITERIA:** Patients of acute cerebrovascular disease admitted in S.V.R.R.G.G.H., Tirupati were taken in this study. **EXCLUSION CRITERIA:** Head injury cases and neoplasm cases producing stroke were excluded. **RESULTS:** The commonest presentation of patient in acute stroke was hemiplegia. In this study out of 50 patients, 44 patients presented with hemiplegia. In this study 88% of patients presented with hemiplegia, followed by 10% presented with aphasia, 10% presented with altered sensorium, 8% cerebellar ataxia, 2% convulsions and 2% monoplegia.

**KEYWORDS:** Cerebrovascular disease, Stroke, Aphasia, Cerebellar ataxia, Monoplegia, Convulsions.

**INTRODUCTION:** Cerebrovascular diseases include some of the most common and devastating disorders: ischaemic stroke, haemorrhagic stroke and cerebrovascular anomalies such as intracranial aneurysms and arteriovenous malformations. A stroke or cerebrovascular disease is defined by abrupt onset of neurological deficit that is attributable to a focal vascular cause. Thus the definition of stroke is clinical and laboratory studies including brain image are used to support the diagnosis.<sup>1</sup> The clinical manifestations of stroke are highly variable because of the complex anatomy of the brain and its vasculature. It accounts for nearly 1.5% of all urban admissions, 4.5% of all medical and about 20% neurological cases.<sup>2</sup> The incidence of stroke worldwide is 179 per 100000 population in various parts. In western countries overall prevalence rate is 794 per 100000 population. The annual incidence of stroke in U.K. is about 350 per 100000 population and in U.S.A. they cause 200000 deaths per year.<sup>3,4</sup> Stroke is the second leading cause of mortality worldwide and third most common cause of death in the industrialized countries (after heart disease and all types of cancers combined). Hypertension is the most important risk factor for ischaemic and haemorrhagic stroke.

Occluded blood vessel	Clinical manifestations
ICA (Internal Carotid Artery)	<ul style="list-style-type: none"><li>• Ipsilateral blindness</li></ul>
MCA (Middle Cerebral Artery)	<ul style="list-style-type: none"><li>• Contralateral hemiparesis, sensory loss (arm, face-worst)</li><li>• Expressive aphasia (dominant lobe involvement)</li></ul>

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	<ul style="list-style-type: none"> <li>Anosognosia and spatial disorientation (non-dominant lobe involvement)</li> <li>Contralateral inferior quadrantanopsia</li> </ul>
ACA (Anterior Cerebral artery)	<ul style="list-style-type: none"> <li>Contralateral hemiparesis, sensory loss (worst in leg)</li> </ul>
PCA (Posterior Cerebral Artery)	<ul style="list-style-type: none"> <li>Contralateral homonymous hemianopia or superior quadrantanopia.</li> <li>Memory impairment</li> </ul>
BASILAR APEX	<ul style="list-style-type: none"> <li>Bilateral blindness</li> <li>Amnesia</li> </ul>
BASILAR ARTERY	<ul style="list-style-type: none"> <li>Contralateral hemiparesis, sensory loss</li> <li>Ipsilateral bulbar or cerebellar signs.</li> </ul>
SCA (Superior Cerebellar artery)	<ul style="list-style-type: none"> <li>Ataxia, dizziness, dysarthria, contralateral hemiparesis</li> </ul>
Vertebral artery OR PICA (Posterior Inferior Cerebellar artery)	<ul style="list-style-type: none"> <li>Ipsilateral loss of facial sensations, ataxia, contralateral hemiparesis, sensory loss.</li> </ul>

Table 1: Clinical manifestations of ischaemic stroke<sup>5</sup>

If the entire MCA is occluded at its origin (blocking both its perforating and cortical branches) and the distal collaterals are limited, the clinical findings are contralateral hemiplegia, hemi anaesthesia, and homonymous hemianopia<sup>6</sup>. Dysarthria is common because of facial weakness. When the dominant hemisphere is involved, global aphasia is present. When the non-dominant hemisphere is involved, anosognosia, constructional apraxia and neglect are found.

**AIMS AND OBJECTIVES:** To study incidence of clinical presentation of acute stroke in various patients. This study included 50 patients of acute stroke who were admitted in S.V.R.R.G.G.H., Tirupati.

## MATERIALS AND METHODS:

**INCLUSION CRITERIA:** Patients of acute stroke admitted in S.V.R.R.G.G.H. were included.

**EXCLUSION CRITERIA:** Head injury cases and neoplasm cases causing cerebrovascular disease were excluded from the study.

The diagnosis of acute stroke was made on the basis of history, clinical examination and CT Scan of brain. After admission a detailed history of stroke, including history of risk factors were taken. Complete neurological examination and other systemic examination carried out.

## RESULTS:

Clinical Manifestation	Male	Female	Total	Percentage
Hemiplegia	24	20	44	88 %

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Aphasia	3	2	5	10 %
Altered sensorium	5	5	10	20 %
Cerebellar ataxia	3	1	4	8 %
Convulsions	1	0	1	2 %
Monoplegia	1	0	1	2 %
Headache	12	10	22	44 %
Vomitings	8	10	18	36 %

Table 2: Incidence of clinical presentation of acute stroke

Sex	Hemiplegia		Total	Percentage
	Right	Left		
Male	16	8	24	48 %
Female	9	11	20	40 %
<b>Total</b>	<b>25</b>	<b>19</b>	<b>44</b>	<b>88 %</b>

Table 3: Incidence of right and left hemiplegia in relation to sex

**DISCUSSION:** TIAs of ICA may be manifested as total mono-ocular blindness (amaurosis fugax). Ipsilateral occlusion of ACA which is relatively rare in comparison to strokes in other major branches of the Circle of Willis, account for about 2 % of cerebral infarcts. The principle symptoms associated with occlusion of ACA distal to the anterior communicating artery are UMN weakness and cortical sensory deficit in the contralateral leg. Other manifestations of ACA occlusion are urinary incontinence, abulia and transcortical motor aphasia. Strokes of perforating branches of PCA frequently cause complete contralateral hemi anaesthesia with loss of all sensations and complete hemianopia on that side. PCA infarct will produce difficulty in reading (dyslexia) and dyscalculia. MCA infarct, if complete, typically present with contralateral hemiplegia, sensory deficit, hemianopia and cognitive defects such as aphasia (dominant lobe) or contralateral neglect (non dominant hemisphere).<sup>7</sup>

Clinical feature	Mohr et.al <sup>8</sup> (1978)	Foulkes et. al <sup>9</sup> (1988)	Present study (2015)
Headache	36 %	41 %	44 %
Vomitings	44 %	49 %	36 %
Convulsions	7%	9 %	2 %

Table 4: Comparison of clinical features in different studies

In the present study, headache was found in 44 % of cases, which is comparable to the studies of Mohr et. al., Foulkes et.al. - 36 % & 41 % respectively. Vomiting was present in 36 % cases, which is comparable with the study of Mohr et. al., Foulkes et.al. - 44 % & 49 % respectively. Convulsions were present in 2 % of cases, which is comparable with the study of Mohr et. al., Foulkes et.al. - 7 % & 9 % respectively.

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Ataxia, diplopia, vertigo and/or bilateral weakness usually indicate a lesion in the brain stem or cerebellum.<sup>10</sup> The present study was carried out in 50 patients who were admitted with acute stroke which was confirmed by CT Brain. In the present study, commonest presentation of acute stroke was hemiplegia which was present in 88 % of cases. In men, hemiplegia is seen in 48 % and in women, it is 40 %. The most common symptom in stroke is hemiparesis and the second most common disability symptom is aphasia.<sup>11</sup> The next commonest manifestation was altered sensorium which was present in 20 % cases, followed by aphasia which was present in 10 % of cases, followed by cerebellar ataxia (8%), convulsions (2%) and monoplegia (2%).

**SUMMARY:** This study was done 50 patients who were admitted in S.V.R.R.G.G.H. with the diagnosis of acute stroke, to know the commonest presentation of stroke. In this study the commonest clinical presentation was hemiplegia which was seen in 88 % of cases. The next commonest presentation was altered sensorium (20%) followed by aphasia (10%), cerebellar ataxia (8%), convulsions (2%) and monoplegia (2%).

**CONCLUSION:** The commonest clinical presentation of acute stroke was hemiplegia, which is due to MCA involvement. MCA is commonly involved in atherothrombo embolic events. Because MCA is the continuation of internal carotid artery, so embolism from heart and carotid artery go directly to the MCA and produce hemiplegia.

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