

## ORIGINAL RESEARCH

# Assessment of cases of acute ischemic stroke

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### ABSTRACT

**Background:** Ischemic stroke is one of the common neurological diseases associated with high mortality and more than half of the stroke patients remain disabled. The present study was conducted to assess cases of acute ischemic stroke. **Materials & Methods:** 56 cases of acute ischemic stroke admitted to neurology department of both genders. All gave their written consent to participate in the study. Data such as name, age, gender etc. was recorded. Parameters such as history, clinical examination, risk factors and CT/MRI scan of brain was done. Complete hemogram, urine routine, renal function test, ECG, chest X-ray, RBS, HbA1C and 2D Echo, CT/MRI scan done at the time of Admission. NIHSS score was noted on the day of admission and then after 30 days of stroke. **Results:** Out of 56 patients, males were 36 and female were 20. Clinical features were sensory deficit seen in 24, motor deficit in 30, altered sensorium in 13, cranial nerve involvement in 10, seizures in 25 and headache in 36, risk factors were HTN in 42, DM in 33, smoking in 21, alcoholism in 19 and IHD in 7, NHSS after 1 month was point 1-4 in 11, 5-15 in 27, 16- 20 in 10 and 21-42 in 8. The difference was significant ( $P < 0.05$ ). **Conclusion:** Clinical features were sensory deficit, motor deficit, altered sensorium, cranial nerve involvement, seizures and headache. Common risk factors were HTN, DM and smoking.

**Key words:** Ischemic stroke, National Institutes of Health stroke Scale, Seizure

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### INTRODUCTION

Ischemic stroke is one of the common neurological diseases associated with high mortality and more than half of the stroke patients remain disabled.<sup>1</sup> Every year in us more than 7,00,000 people have stroke, one third in that are recurrent events.<sup>2</sup> There was about 6.2million stroke death in the year 2015, making it the second leading cause of death worldwide. Strokes are even more important because of prolonged disability they cause.<sup>3</sup> The history of world has undoubtedly been altered by stroke. Among the stroke survivors around 15% and 30% become permanently disabled, while 20% of them remain in institutional care three months after the stroke.<sup>4</sup> The economical and psychological costs of stroke are enormous. The brain is an organ that cannot regenerate; therefore, an injury to this organ remains untreatable to conditions with no return. Thereby, active prevention and early effective treatment are necessary.<sup>5</sup>

Many conditions can present like TIA or stroke. Seizures, infection, neoplasms, intracranial haemorrhage, hypoglycemia and other metabolic abnormalities are some of the conditions mimicking a stroke and TIA.<sup>6</sup> National Institutes of Health stroke

Scale (NIHSS) was found to be helpful both in diagnosis of stroke and in stratifying patients, so that outcome could be predicted and also to decide for acute intervention. Among various stroke scales, NIHSS has been studied extensively and its reliability and validity are well documented in scientific literature.<sup>7</sup> The present study was conducted to assess cases of acute ischemic stroke.

### MATERIALS & METHODS

The present study consisted of 56 cases of acute ischemic stroke admitted to neurology department of both genders. All gave their written consent to participate in the study.

Data such as name, age, gender etc. was recorded. Parameters such as history, clinical examination, risk factors and CT/MRI scan of brain was done. Complete hemogram, urine routine, renal function test, ECG, chest X-ray, RBS, HbA1C and 2D Echo, CT/MRI scan done at the time of Admission. NIHSS score was noted on the day of admission and then after 30 days of stroke. Data thus obtained were subjected to statistical analysis. P value  $< 0.05$  was considered significant.

**RESULTS**

**Table I Distribution of patients**

Total- 56		
Gender	Male	Female
Number	36	20

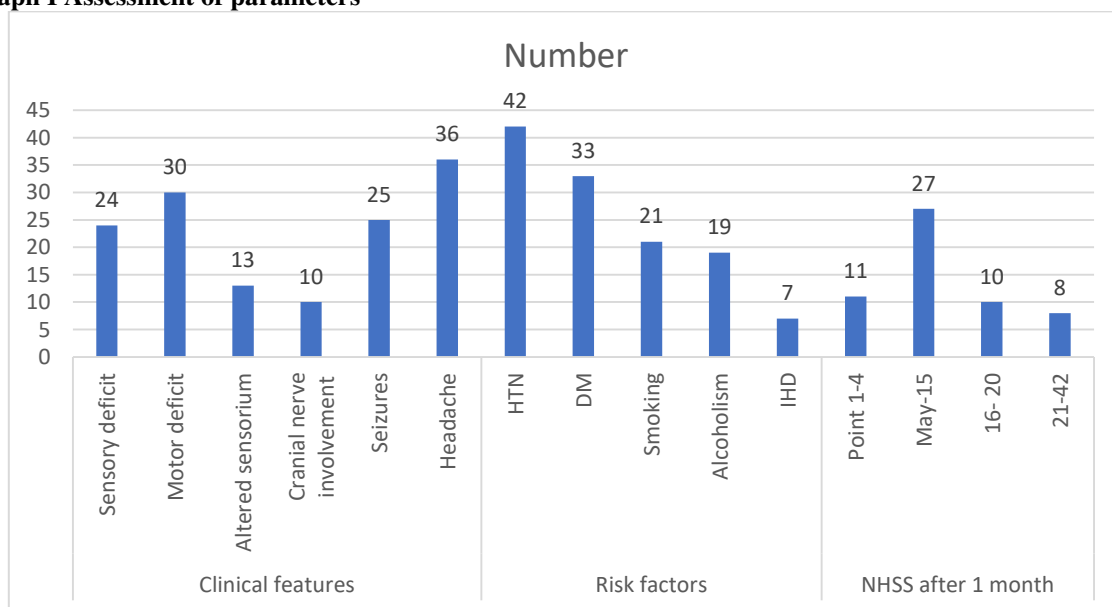
Table I shows that out of 56 patients, males were 36 and female were 20.

**Table II Assessment of parameters**

Parameters	Variables	Number	P value
Clinical features	Sensory deficit	24	0.05
	Motor deficit	30	
	Altered sensorium	13	
	Cranial nerve involvement	10	
	Seizures	25	
	Headache	36	
Risk factors	HTN	42	0.04
	DM	33	
	Smoking	21	
	Alcoholism	19	
	IHD	7	
NHSS after 1 month	Point 1-4	11	0.02
	5-15	27	
	16- 20	10	
	21-42	8	

Table II, graph I shows that clinical features were sensory deficit seen in 24, motor deficit in 30, altered sensorium in 13, cranial nerve involvement in 10, seizures in 25 and headache in 36, risk factors were HTN in 42, DM in 33, smoking in 21, alcoholism in 19 and IHD in 7, NHSS after 1 month was point 1-4 in 11, 5-15 in 27, 16- 20 in 10 and 21-42 in 8. The difference was significant (P< 0.05).

**Graph I Assessment of parameters**



**DISCUSSION**

Acute ischemic stroke is a medical emergency caused by a blockage in a blood vessel that supplies blood to the brain.<sup>8</sup> This blockage results in the reduced blood flow and oxygen supply to the affected area of the brain, which can cause brain cells to die.<sup>9</sup> Symptoms of acute ischemic stroke can include sudden weakness or numbness in the face, arm, or leg (usually on one side of the body), difficulty speaking or understanding

speech, sudden vision changes, dizziness, loss of balance or coordination, and severe headache. Immediate treatment is crucial for a person experiencing an acute ischemic stroke.<sup>10</sup> The primary goal of treatment is to restore blood flow to the affected area of the brain as quickly as possible. This may involve the use of medications, such as clot-busting drugs or blood thinners, or medical procedures such as mechanical thrombectomy.<sup>11</sup> Following

cerebral ischemia/reperfusion, inflammation, increase in free radicals, blood-brain barrier damage, and neuronal disruption happened. Selenium (Se) has significant functions such as regeneration of antioxidant systems, cell viability, and proliferation.<sup>12</sup> The present study was conducted to assess cases of acute ischemic stroke.

We found that out of 56 patients, males were 36 and female were 20. Sanjeeth et al<sup>13</sup> assessed significance of the national institute of health stroke scale (NIHSS) score on the day of admission in predicting the severity and outcome on 30th day on 93 patients of stroke. After 1 month of stroke among 3 patients who had baseline NIHSS score 1-4, all 3 (100%) are independent at home, among 73 patients who had baseline NIHSS score 5-15, 47 (64.4%) are independent and 26 (35.6%) required assistance, among 7 patients who had score 16-20, 1 (14.3%) patient was independent at home, 6 (85.7%) required assistance, and among 10 patients who had score more than 20, 7 (70%) died, 3 (30%) required assistance and none of them are home independent.

We found that clinical features were sensory deficit seen in 24, motor deficit in 30, altered sensorium in 13, cranial nerve involvement in 10, seizures in 25 and headache in 36, risk factors were HTN in 42, DM in 33, smoking in 21, alcoholism in 19 and IHD in 7, NIHSS after 1 month was point 1-4 in 11, 5-15 in 27, 16- 20 in 10 and 21-42 in 8. Sharifi et al<sup>14</sup> evaluated the effect of selenium supplementation on short-term and long-term acute ischemic stroke outcomes. A total of 40 ischemic stroke patients (18 females, 22 males) with mean age of  $68.2 \pm 10$  years were investigated. Selenium supplementation improved short-term outcome, 15.7% by using NIHSS (66% vs 42%, RR = 0.85 with CI = 0.54-1.35; NNT = 10; 95% CI = 5.15- 2.53, P = 0.51) and 46.3% by using mRS (57% vs 12%, RR = 0.52 with CI = 0.31-0.88; NNT = 3; 95% CI = 1.49 -7.59, P = 0.01). The long-term outcome did not change significantly by considering Barthel index >75 after 3 months in comparison to comparator group (33.3% vs 29.4%, RR = 1.13 with CI = 0.40-3.16; NNT = 26; 95% CI = 2.77 -3.54, P = 0.81].

The limitation the study is small sample size.

## CONCLUSION

Authors found that clinical features were sensory deficit, motor deficit, altered sensorium, cranial nerve involvement, seizures and headache. Common risk factors were HTN, DM and smoking

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