



“ASSESSMENT OF STROKE PATIENT PACK ON EARLY OUTCOME AMONG PATIENTS ADMITTED WITH STROKE IN A TEACHING HOSPITAL”

¹SUNIL BADIGER, ²MARIA PREETHI MATHEW, ³DR.SAGAR SINHA

¹MSC. NURSES PRACTITIONER IN CRITICAL CARE, MGM NEW BOMBAY COLLEGE OF NURSING, NAVI
MUMBAI, INDIA

²ASSOCIATE PROFESSOR, MGM NEW BOMBAY COLLEGE OF NURSING, NAVI MUMBAI, INDIA

³PROFESSOR, DEPARTMENT OF EMERGENCY MEDICINE MGM MEDICAL COLLEGE NAVI MUMBAI.

Abstract:

Introduction:

Stroke is one of the leading causes of morbidity and mortality in India and worldwide. A stroke can cause death and disability in an individual. There is also a wide variation in the case fatality rates in India. The estimated prevalence rate of stroke in rural areas is 84-262/100,000, while in urban areas it is 334-424/100,000. According to recent population-based studies, the incidence rate is about 119-145/100,000. There is also a wide range of case-fatality rates in India with Kolkata having the highest at 42 %. Stroke is one of the major causes of death and disability in adults and elders. Stroke is the second cause of death worldwide and the fifth cause in India. The 60 minutes is often called the “golden hour” of acute stroke.¹

Objectives of the study:

1. To categorize the patients based on stroke severity admitted with stroke.
2. To find the association of NIHS Score and outcome of stroke patient.

Methodology

Quantitative approach with a descriptive research design was adopted. Data were collected from 80 stroke patients using a non-probability convenient sampling method. Patients were selected and evaluated using stroke scales.

Results: The result shows that a maximum of 51.20% of them were more than 60 years and 75% were male and 81.30% had a history of alcohol and smoking, 100% had Hypertension. 64 patients had a moderate and only 16 patients had a minor stroke on admission. The majority of 48 patients had moderate and only 32 minors at 24 hours. Around 40 patients had moderate and only 4 had moderate to severe stroke at 72 hours. 75(93.75%) survived in ICU and 5 (6.25%) died after more than 15 days. There is a significant association between ICU stay and the outcome of stroke patients. 36(45%) patients required some help but can walk without assistance and only 16(20%) were unable to walk without assistance at 24 hours. The majority 40 (50%) of patients were unable to carry out all previous activities and only 8(10%) were able to carry out all usual duties and activities at 72 hours.

Conclusion: The findings of the study showed that maximum stroke patients are male and above 60 years of age. Most of the patients had a history of alcohol and smoking. The majority of patients had a history of co-morbidity like Hypertension, Diabetes mellitus, and ischemic heart diseases. There is a significant decrease in the severity of stroke patients determined by the NIH Scale. There is a positive patient outcome shown by using this patient Stroke Pack.

Index Terms - Stroke, NIH Scale, Modified Rankin Score, Stroke assessment, neurological and physiological Parameters, stroke patient pack.

INTRODUCTION

Stroke is one of the leading causes of morbidity and mortality in India and worldwide. A stroke can cause death and disability in an individual. There is also a wide variation in the case fatality rates in India. There is also a wide range of case-fatality rates in India with Kolkata having the highest at 42 %. Stroke is one of the major causes of death and disability in adults and elders. Stroke is the second cause of death worldwide and the fifth cause in India¹.

1.1 Need of the study: A stroke is a sudden onset of neurological deficit and may cause permanent disability and death of an individual if not treated on time. The first, hour is called a golden hour for the best outcome for the patient and prevention of disability among the stroke patients. The delay for examine the stroke symptomatic patients may worsen the condition and early outcome of the patients⁸.

1.2 Population

Target population

All stroke patients admitted in teaching hospital of Navi Mumbai.

Accessible population

In this study, accessible population refers to patients presenting at an emergency department with stroke admitted to MICU, SICU, and EMS ICU at MGM medical college hospital Navi Mumbai.

Sample: In this study, the samples were all stroke patients presented at the Emergency department, MICU, and EMS ICU, during the period of data collection.

Sample size: The calculated sample size is 80.

DATA COLLECTION

The sample was chosen using a non-probability, convenient sampling technique based on inclusion criteria in this study.

RESEARCH METHODOLOGY

Quantitative approach with a descriptive research design was adopted. Data were collected from 80 stroke patients using a non-probability convenient sampling method. Patients were selected and evaluated using stroke scales.

RESULTS AND DISCUSSION

1. Distribution of Stroke Patients according to their demographic characteristics.

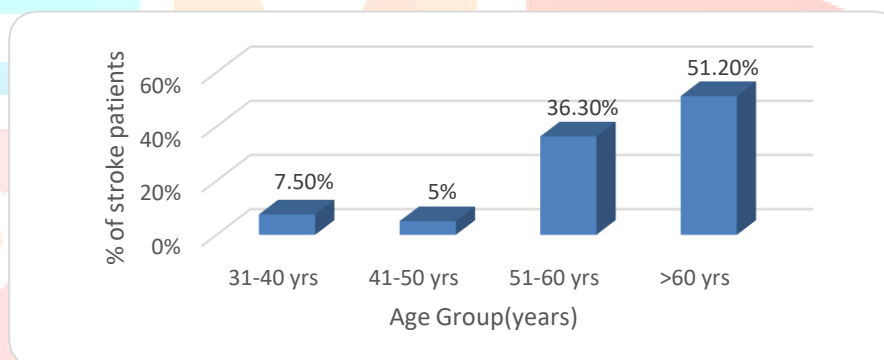


Figure:1 shows that a maximum of 41(51.2%) of patients were in the age group above 60 years and only 4(5%) of patients were in the age group between 41-50 years.

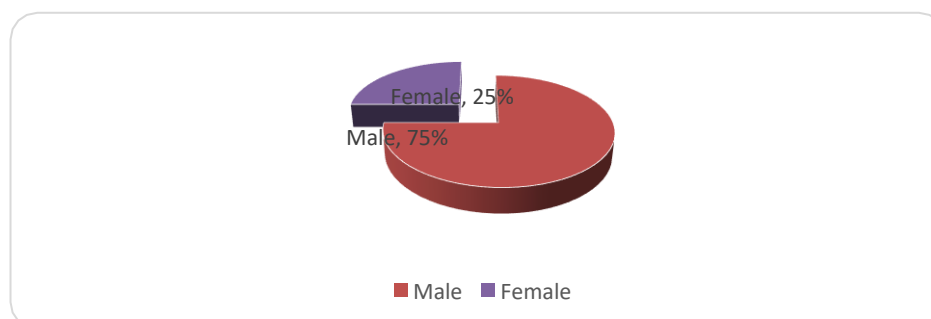


Figure:2 shows that out of 80 stroke patients, 75% of stroke patients were males and 25% of them were females.

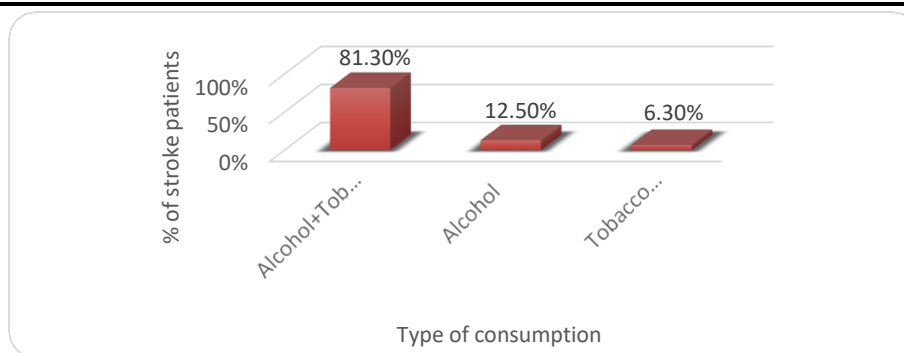


Figure:3 shows that 52(81.30%) of stroke patients had a history of alcohol and tobacco smoking, 8(12.50%) had a history of alcohol, and 4(6.30%) of stroke patients had a history of tobacco chewing.

2. Categorization of stroke patients based on stroke severity on admission, 24 hours and 72 hours.

n=80

Level of stroke severity	Score Range	Admission	24 hours	72 hours
No stroke symptoms	0	0	0	0
Minor Stroke	1 to 4	16	32	36
Moderate Stroke	5 to 15	64	48	40
Moderate to Severe	16 to 20	0	0	4
severe stroke	21 to 42	0	0	0

Table:1 shows that on admission 64 patients had a moderate stroke and 16 patients had a minor stroke. At 24 hours 48 patients had a moderate stroke and 32 patients had a minor stroke. At 72 hours 40 patients had a moderate stroke, 36 patients had a minor stroke and 4 patients had moderate to severe stroke.

Table: 2 Mean NIHSS on admission, 24 hours and 72 hours.

n= 80

NIHSS	Min	Max	Mean	SD	t-value	p-value	Significant
							At 5% level
Admission	3	13	6.50	2.28	-	-	
24 hours	3	9	5.45	1.92	7.06	0.0001,	S
72 hours	2	16	6.60	3.54	0.51	0.60,	NS

Table 2 shows that the Mean NIHSS score at admission was 6.50 ± 2.28 , at 24 hours it was 5.45 ± 1.92 and at 72 hours it was 6.60 ± 3.54 . statistically significant difference was found in mean NIHSS score at 24 hours

($t=7.06$, $p=0.0001$) and no significant difference was found at 72 hours ($t=0.51$, $p=0.60$) when compared with

NIHSS score at admission.

Table:3 Association between NIHSS Score and severity of stroke patient

n= 80						
NIHS score	Admission	24 hours	72 hours	χ^2	p-value	Significant at 5%level
0	0	0	0			
1 to 4	16	32	36			
5 to 15	64	48	40			
16 to 20	0	0	4	21.89	0.0003	<0.05
21 to 42	0	0	0			S

Table:3 shows that 64 patients had a score between 5 to 15(moderate) and only 16 were between scores 1 to 4 (mild) on admission. At 24 hours 48 between the score of 5 to 15(moderate) and 32 were in 1 to 4 (mild)score. At 72 hours 40 were between 5 to 15 scores (moderate), 36 were between 1 to 4 (mild) and 4 were 16 to 20(moderate to severe). This suggests that there is a strong association between NIHSS and the severity of stroke patients.

DISCUSSION

Findings related to Distribution of stroke patients with regard to demographic variables.

It was found that out of 80 stroke patients a maximum of 41(51.2%) patients are above 60 years only 6 (7.5%) patients are between the age group of 31- 40 years. The majority 60(75%) were males and 20 (25%) were females. 28(35%) of patients' occupation is Service and only 12 (15%) are Farmer. Most 52(81.3%) of patients had a history of tobacco smoking and only 4 (6.3%) tobacco chewer. The majority 80(100%) of patients had diabetes mellitus and only 4(5%) had Atrial Fibrillation. Around 35(43.75%) patients had 4 – 7 days ICU stay and only 5(6.25%) had 12 -15 days.

Findings related to Categorization of stroke patients based on severity admitted with stroke.

It was found that out of 80 patients 64 patients had a moderate and only 16 patients had a minor stroke on admission. The majority of 48 patients had moderate and only 32 minors at 24 hours. Around 40 patients had moderate and only 4 had moderate to severe stroke at 72 hours.

Findings related to the Association of NIHSS scale and severity of the stroke patients.

It was found that a maximum of 64(80%) of the patient had a moderate stroke and only 16 (20%) of patients had a minor stroke on admission. Around 48(60%) had moderate and 32(40%) had had a minor stroke at 24 hours. The majority 40 (50%) had moderate and only 4 (5%) of patients had moderate to severe stroke. There is a significant association between severity and outcome of stroke patients. It is observed that there is a significant association between NIHS Score and severity.

REFERENCE

1. Jones SP, Baqai K, Clegg A, Georgiou R, Harris C, Holland EJ, etc. Stroke in India: A systematic review of the incidence, prevalence, and case fatality. *Int J Stroke*. 2022 Feb;17(2):132-140. doi: 10.1177/17474930211027834. Epub 2021 Jul 2. PMID: 34114912; PMCID: PMC8821978.
2. Mori M, Naganuma M, Okada Y, Hasegawa Y, Shiokawa Y, Nakagawara J, etc. Early neurological deterioration within 24 hours after intravenous rt-PA therapy for stroke patients: the Stroke Acute Management with Urgent Risk Factor Assessment and Improvement rt-PA Registry. *Cerebrovasc Dis*. 2012;34(2):140-6. doi: 10.1159/000339759. Epub 2012 Aug 1. PMID:22854333.
3. Tanaka K, Matsumoto S, Furuta K, Yamada T, Nagano S, Takase KI, Hatano T, Yamasaki R, Kira JI. Differences between predictive factors for early neurological deterioration due to hemorrhagic and ischemic insults following intravenous recombinant tissue plasminogen activator. *J Thromb Thrombolysis*. 2020 May;49(4):545-550. doi: 10.1007/s11239-019-02015-4. PMID: 31848874; PMCID: PMC7182629.
4. [https://www.thelancet.com/journals/laneur/article/PIIS1474-4422\(19\)30034-1/fulltext](https://www.thelancet.com/journals/laneur/article/PIIS1474-4422(19)30034-1/fulltext)
5. Mori M, Naganuma M, Okada Y, Hasegawa Y, Shiokawa Y, Nakagawara J, etc. Early neurological deterioration within 24 hours after intravenous rt-PA therapy for stroke patients: the Stroke Acute Management with Urgent Risk Factor Assessment and Improvement rt-PA Registry. *Cerebrovasc Dis*. 2012;34(2):140-6. doi: 10.1159/000339759. Epub 2012 Aug 1. PMID:22854333.
6. Tanaka K, Matsumoto S, Furuta K, etc. Differences between predictive factors for early neurological deterioration due to hemorrhagic and ischemic insults following intravenous recombinant tissue plasminogen activator. *J Thromb Thrombolysis*. 2020 May;49(4):545-550. doi: 10.1007/s11239-019-02015-4. PMID: 31848874; PMCID: PMC7182629.
7. Toni D, Fiorelli M, Bastianello S, etc. Acute ischemic strokes improving during the first 48 hours of onset: predictability, outcome, and possible mechanisms. A comparison with early deteriorating strokes. *Stroke*. 1997 Jan;28(1):10-4. doi: 10.1161/01.str.28.1.10. PMID: 8996480.
8. Kang SH, Kim DK, Seo KM, Choi KN. Modifying and evaluating efficacy of interactive computerized program using motion tracking technology to improve unilateral neglect in patients with chronic stroke. *Medicine (Baltimore)*. 2018 Sep;97(38):e11932. doi: 10.1097/MD.00000000000011932. PMID: 30235656; PMCID: PMC6160019
9. Jang YJ, Park D, Kim HS, Lee CH, Byun HY, Yoon CH, etc. Assessment of the Implementation of Critical Pathway in Stroke Patients: A 10-Year Follow-Up Study. *Biomed Res Int*. 2020 Feb 26;2020:3265950. doi:10.1155/2020/3265950. PMID: 32190659; PMCID: PMC7063219.