



CORRELATION BETWEEN MODIFIED RANKIN SCORE AND TERRITORY OF STROKE IN PATIENTS THROMBOLYSED AT A TERTIARY CARE CENTER

Dr. Praveen Badlani	Junior Resident, Department of General Medicine, MGM Medical college and hospital, Navi Mumbai.
Dr. Prashant Kaushik	Senior Resident, Department of General Medicine, MGM Medical college and hospital, Navi Mumbai.
Dr. Vandana Dandekar	Associate Professor, Department of General Medicine, MGM Medical college and hospital, Navi Mumbai.
Dr. Jaishree Ghanekar	Professor and Head, Department of General Medicine, MGM Medical college and hospital, Navi Mumbai.

ABSTRACT

Prognosis of functional outcome after ischemic stroke is influenced by a variety of factors already assessable in the acute phase and within the first days after symptom onset. In clinical trials, stroke outcome is most commonly rated by the modified Rankin Scale (mRS) because of the validity and rapid application of this rating scale and its ability to discriminate clinically relevant levels of disability and recovery. A prospective observational study was done, in which 47 cases of acute ischemic stroke, thrombolysed after ruling out any bleed were included from March 2020 to October 2021. The demographics, risk factors, biochemical parameters and outcomes (mortality and complications) were assessed, until discharge or in-hospital death. Most common complication was Intra-cranial bleed that occurred in 7 (14.9%) patients following which was deterioration of power in 3 (6.4%) patients. Seizure and sepsis were reported in 2 (4.3%) patients each. Systemic hemorrhage was reported in 1 (2.1%) case. No patient reported thromboembolism. Favorable outcome according to Modified rankin scoring is 0-2 and out of 47 patients 29 patient showed favorable outcome in which 21 patients were anterior territory ischemic CVA while 8 were posterior territory. Total 3 patients out of 47 showed worst score of 6 i.e., death and 2 of them belonging to posterior territory.

KEYWORDS :

INTRODUCTION

Treatment with recombinant tissue plasminogen activator (rt PA) within the first 4.5 h from symptoms onset is the first-line approved therapy for stroke patients. The treatment availability has significantly improved over time.

The modified Rankin Scale (mRS) is a commonly used scale to measure the degree of disability or dependence in daily activities of people with neurological and non-neurological disability owing to stroke or other causes. It has become the most widely used clinical outcome measurement for stroke clinical trials. mRS ranges from 0 to 6, from perfect health without symptoms to death.

Brain imaging in the early phase after stroke onset provides valuable information related to individual functional recovery. In particular, structural MRI identifies injured brain regions and allows for assessment of extent and location, both known to influence and predict functional outcome measured by the mRS. However, infarct volume from early MRI correlates only moderately with the mRS at later time points, indicating that additional factors, such as lesion location, influence functional outcome. It is therefore of major interest to elucidate the relationship between early lesion patterns and functional impairment in the later course of stroke.

In this study, we examined stroke lesion pattern from early MRI (days 2-3) to identify lesion locations that influence clinical outcome measured by the mRS after 1 month. We hypothesized that (1) brain areas linked to physical disability will show a strong association with higher mRS values (ie, worse clinical outcome) and (2) different lesion locations would characterize individual contribution to functional outcome depending on hemisphere side.

METHODS

This is a prospective, longitudinal observational study was conducted in the Department of Medicine, MGM Medical

College and Hospital, Navi Mumbai after the approval of the Institutional Ethics Committee was taken before the start of the study. A written signed informed consent was taken from the patients or relatives prior to enrolling the subjects in the study. 47 patients presenting to Emergency room of MGM Institute of Health Sciences, Navi Mumbai, with signs and symptoms of ischemic CVA in window period, diagnosed ischemic stroke on neuroimaging, during the period of March 2020 to October 2021 were chosen for the study.

Detailed history of present illness along with personal and past history were taken from all the patients of ≥ 18 years of age and recorded in previously structured case proforma. General and systemic examinations and routine laboratory investigations were carried out. Weight was measured by the standard weighing machine if patient was able to stand. Blood HGT was measured. The left arm supine blood pressure was recorded using sphygmomanometer. It was repeated after 5 minutes. The average of the two readings was recorded as the patient's blood pressure. Patient NCCT brain was performed as soon as possible. If shows no evidence of bleed (except frank hypo density in more than 1/3rd of middle cerebral artery territory) patient was thrombolysed. NIHSS17 scoring was done at arrival, repeated at 1 hour and 24 hours. After 24 hours of thrombolysis MRI brain was performed for all patients except 6 patients (4 had metallic implants while 2 had pacemaker) for whom CT brain and angiography was performed. Patient were then followed up and mRS scoring 35 was done at 7th day and 14th day and their degree of disability was measured accordingly. The data was analyzed using statistical software (IBM SPSS, IBM Corporation, Armonk, NY, USA). Complications studied were IC bleed, seizure, anaphylaxis, deterioration of power, sepsis, thromboembolism and death.

RESULTS AND DISCUSSION:

In our study male preponderance (85.1%) was noted. The mean age of study population was 56.15 ± 13.26 years with

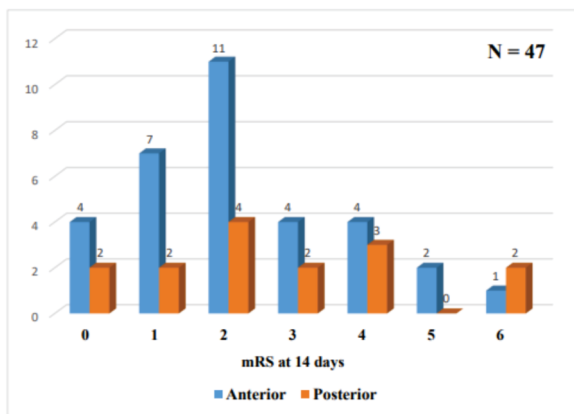
higher incidence noted in elderly. It was correlating with studies done earlier. Therefore, it can be effectively concluded that stroke shows male preponderance. it was found that 26 patients had left sided lesion while other 21 had right sided lesion. 36 patients (76.6%) had anterior circulation (anterior and middle cerebral territory) and other 11 (23.4%) had posterior circulation territory stroke. also it was found that posterior territory stroke was more common in relatively younger population and the anterior circulation stroke was relatively common in older population.

Favorable outcome according to Modified rankin scoring is 0-2 and out of 47 patients, 29 patient showed positive outcome. Out of 29 patient showing favorable outcome 21 patients were anterior territory ischemic CVA while 8 were posterior territory. Total 3 patients out of 47 showed worst score of 6 i.e., death and 2 of them belonging to posterior territory.

CONCLUSIONS

mRS at 14 days	Territory of stroke		Total
	Anterior	Posterior	
0	4	2	6
1	7	2	9
2	10	4	14
3	4	2	6
4	5	3	8
5	2	0	2
6	1	2	3

χ^2 value = 2.057, p-value = 0.841



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