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ORIGINAL ARTICLE

Outcomes of Multidisciplinary Team Approach in Rehabilitation of Patients with Stroke

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ABSTRACT

Aim: To find the benefits of the multidisciplinary team approach for the rehabilitation of patients with stroke.
Methodology: This cohort case series was conducted at physiotherapy department, Syed Medical Complex Sialkot in 2017-18 after ethical approval. Open epi calculator was used for sample size estimation and found 70 patients. Non-probability, consecutive sampling technique was used to enroll the patients after screening for eligibility criteria and taking their consent. FIMFAM scale was used to measure the outcomes at 1st visit, after 4 weeks, and on follow up.
Results: Mean ± standard deviation of the age of participants was 62.57±8.02 years. Out of them, 74.28% (52) had left sided while 25.71% (18) had right sided stroke. Mean of total FIMFAM score at 1st visit, after 4 weeks, and on follow up was 42.50±20.58, 77.70±25.56 and 126.83±21.30 respectively (P=0.000). Mean difference of 1st visit and after 4 weeks was 35.20 (p value=0.000), Mean difference after 4 weeks and follow up was 49.13 (p value=0.000).
Conclusion: We concluded that multidisciplinary team approach in patients with stroke can produce significant improvement in their functional outcomes, therefore can limit the risk of death and delayed recovery.
Keywords: Multidisciplinary Team Approach, Stroke, Rehabilitation and FIMFAM Scale.

INTRODUCTION

Stroke is a neurological deficit due to vascular lesions in the brain. It is usually of rapid onset and need spontaneous care to treat it. Symptoms of stroke lesion depend on the area and extent of the brain injured or compromised[1]. Stroke is third most common cause of death and d7isability in USA. Almost 40% of the stroke patients suffer emotional and psychological changes after the first attack[2]. Among developing countries including South Asian country like Pakistan an expected increase has been seen in the number of stroke cases and a parallel increase in the burden of stroke[3]. Disabling effects of stroke depend on affected areas of brain as it is heterogonous and multilayered lesion. Pain, spasticity, pressure ulcers, fecal and urinary incontinence, DVT & pulmonary embolism and aspiration pneumonia are the secondary complications, which may adversely delay the stroke rehabilitation[4].

There are many approaches for the management and rehabilitation of stroke patients. Some of these are used to improve the early stage disability. Behavior performance is improved such as sensory motor and cognitive ability enhancement. These approaches are very useful and task specific[5]. In stroke care units the female and male patients belonging to different age range has been treated with successful outcomes and when we the results of comparison between multidisciplinary team approach (MDT) and results of conventional care in (1-4 weeks after incidence of stroke) was done the outcome was positive[6]. The stroke rehabilitation and assessment of particular patients in a day care unit system is a challenging task. Various clinical protocols give us evidence about altered domains of patient care in stroke management[7]. According to provided evidence information the properly designed multidisciplinary team units has been proven beneficent regarding positive results on motor control and movements which is compromised due to cerebrovascular accident[8].

In Pakistan and for other developing countries, Dr. Farooq Azam Rathore proposed the Stroke rehabilitation guidelines putting emphasis on the importance of MDT approach[9]. But still there is window of need for the promotion and decisiveness among healthcare professionals and policy makers towards in establishing of stroke care units[10]. MN Babur et al reported the perceptions and awareness of physiotherapist on attitudes headed for health care team scale (ATHCT), and found that physiotherapists in Pakistan are in favor of MDT approach for stroke rehabilitation[11]. There is a dire need to study similar aspects of the disease treatment. There is little evidence available from our country in this domain hence present study was planned.

The objective of the study was to find the benefits of the multidisciplinary team approach for the rehabilitation of patients with stroke.

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METHODOLOGY

It was a prospective cohort case series. After ethical approval, Data was collected from Syed medical complex Sialkot during 2017-18. Open epi calculator was used with 95% confidence level and 5% margin of error, to estimate sample size which was found 70 patients[12]. Non probability consecutive sampling technique was used. Sample selection was done on the basis of predefined inclusion and exclusion criteria. All stroke patients who themselves or their care takers were willing to be treated with multidisciplinary team approach with stable vitals and bowel and bladder control were included. Patients with cognitive impairments and agitation were excluded. Data was collected from OPD patients who were visiting hospital after three weeks onset of symptoms. Informed consent was taken from all patients and data was collected by a competent physiotherapist using FIMFAM scale[12]. This scale has two components; one is functional independent assessment (FIM) and other is functional assessment measure (FAM). FIM consists of 18 items to measure the disability while, FAM cannot be applied independently so it combined its 12 items to FIM items. Total 30 items are further divided into 7 categories. Each item has maximum score 7 (completely independent) and minimum score 1 (totally dependent). So least score of FIMFAM scale is 30 and maximum score is 210. The assessment of patients was carried out thrice; at first visit, after four weeks of treatment, and at follow up (2 weeks after last visit). A detailed home exercise plan was also provided to the patients. Physical therapist, speech therapist, occupational therapist, psychologist and Neuro-physician were included in the multidisciplinary team.
Statistical Analysis: Repeated measure ANOVA was applied to compare the variables at three different intervals and p value ≤ 0.005 was considered as significant.

RESULTS

Mean age and standard deviation of the participants was 62.57±8.016 years. Out of them, 42(60%) were male and 28(40%) were females. Among all enrolled patients with stroke, 52(74.28%)

had left sided while 18(25.71%) had right sided stroke. Results of repeated measure ANOVA for total score FIMFAM were given in Table-1.

Mean ± standard deviation of individual items and of total score at 1st visit, after 4 weeks of treatment and on follow up were expressed in table-2.

Table-1: Total FIMFAM Score

Total score FIMFAM	Total score FIMFAM	Mean Difference	P value
1 (1st visit)	2 (After 4 weeks)	-35.200*	0.000*
	3 (Follow Up)	-84.333*	0.000*
2 (After 4 weeks)	1 (1st visit)	35.200*	0.000*
	3 (Follow Up)	-49.133*	0.000*
3 (Follow Up)	1 (1st visit)	84.333*	0.000*
	2 (After 4 weeks)	49.133*	0.000*

*Statistically significant

Table-2: Clinical Characteristics of Population

Parameters	1st visit	After 4 weeks	Follow up	p-value
Control Items	3.30±1.602	5.63±1.90	9.83±2.98	0.000*
Self-Care	10.10±4.61	18.37±5.92	30.23±4.87	0.000*
Mobility	5.90±2.88	10.63 ±3.91	17.50±3.03	0.000*
Locomotion	4.07±2.13	7.67±2.69	12.70±2.31	0.000*
Communication	7.00±3.33	13.03±4.32	21.43±4.12	0.000*
Adjustment	5.50±2.89	10.07±3.49	16.43±2.81	0.000*
Function	6.97±3.49	13.03±4.99	19.62±2.72	0.000*
Total score	42.50±20.57	77.70±25.55	126.83±21.30	0.000*

*Statistically significant

DISCUSSION

Our study aimed to find the outcomes of multidisciplinary team approach during the rehabilitation of patients with the stroke. The results of MDT approach exhibit significant results when measured on FIMFAM scale. The Self-care, control, mobility, locomotion, communication, adjustments and function were improved significantly in patients with stroke.

According to a Cochrane review covering all RCT's and Quasi studies for indoor patients of the stroke units in 2011. The indoor stroke patients who got treatment in a stroke unit improved more and lived independently at their homes post one stroke year[13], the difference in our study is that we applied the MDT approach to walk in patients.

A programmed systemic review was planned to assess the conclusions of a specialized team in stroke unit within the 24 months of the Yale Stroke Program. They concluded that if MDT approach will be used then it can reduce the stay time and morbidity due to stroke[14]. Stroke units can help reducing the hospital stay of stroke patients and reduce their stay cost.

In a randomized controlled trial, 71 patients were included and were randomly divided into two groups. One group was treated in stroke rehabilitation unit and the other was treated in general ward then the comparison of both group results was done. According to Results the patients who were treated in specialized stroke rehabilitation unit had significant improvement in their outcomes as compared to alternate group[15,16]. Our study results are in line with the results of RCT in terms of same size and improvement scores of FIMFAM from base line to follow up (P=0.000).

Physiotherapists of Pakistan are well aware of the importance of the MDT approach and they are ready to play their part in this regard[11]. Magsi S et al suggested to establish stroke focus groups, public help lines and use of mass media to educate the survivors of the stroke to get information and help regarding post stroke disability management[17]. Although the guidelines and the roadmap has been proposed, but still there is a wide gap between knowledge and practices in the rehabilitation of stroke rehabilitation[10].

Limitations: Short available time for study completion and single study setting utilizing MDT approach for the rehabilitation of stroke

CONCLUSION

This study concluded that the multidisciplinary team approach used in the rehabilitation of patients with stroke, results in significant improvement in their functional outcomes, improves overall health status, limits the risk of death and prevents delayed recovery.

Authors' Contribution: SK& RH: Conception & design of study, **MAA & AM:** Data collection & Analysis, **MA &WP:** Drafting of manuscript.
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