

## PIT FALLS IN STROKE REHABILITATION: A PAKISTANI PERSPECTIVE

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### ABSTRACT

**Objectives:** To identify short comings in the stroke rehabilitation referral and consultation in Pakistan.

**Study Design:** Observational study.

**Place and duration of study:** Stroke Clinic at Armed Forces Institute of Rehabilitation Medicine (AFIRM) Rawalpindi from March 2005 to September 2005.

**Patients and Methods:** 171 patients of stroke fulfilling the inclusion criteria were enrolled in the study. Detailed history was obtained and a thorough examination with emphasis on neurological and musculoskeletal system was performed. Medical records and radiological investigations were reviewed.

**Results:** There were 132 (77.2 %) males and 39 (22.8%) female patients. Radiological investigations were not available in some patients. In the remaining patients the frequency of Ischemic vs Hemorrhagic was 82% and 18% respectively. Involvement of right and left cerebral hemisphere was almost equal with 53% and 47% respectively. Majority, i.e 153 (89.5%) of the patients were referred as OPD cases while indoor rehabilitation consultation was made only for 18 (10.5%) patients. Only 04 (2.3%) patients were seen within 48 hours of stroke onset. In 39 (22.8%) cases consultation was made between one week to one month and for 116 (67.8%) between one to six months, while it was delayed beyond six months in 12 (7%) patients. Important shortcomings identified were non availability of physicians in rehabilitation medicine, late/ no referrals, inadequate referrals, long term placement of indwelling catheters and lack of patient and family education.

**Conclusion:** Stroke is an important cause of long-term disability. Timely and comprehensive stroke rehabilitation minimizes the impairments and leads to successful reintegration of individual into the society. It is a poorly understood concept in Pakistan. Physicians are either not aware of the concept and significance of stroke rehabilitation or often confuse it with physiotherapy alone. There is a need to improve the stroke rehabilitation services in the country.

**Keywords:** Stroke, rehabilitation, shortcomings, Pakistan

### INTRODUCTION

A large proportion of individuals who survive stroke are chronically disabled, making stroke a leading cause of serious, long-term disability [1]. Comprehensive rehabilitation may improve the functional abilities of the stroke survivor, despite age and neurological deficit, and decrease long-term patient care costs. Rehabilitation aims not only at restoring independence in mobility and activities of daily living, but also maximizing compensatory strategies in

linguistic and cognitive function [2]. Stroke rehabilitation is defined as "a multidisciplinary progressive, dynamic, goal-oriented process aimed at enabling a person with impairment to reach his or her optimal, physical, cognitive, emotional, communicative and/or social functional levels" [3].

Stroke rehabilitation is a poorly understood concept in Pakistan. Physicians are either not aware of the concept and or often confuse it with physiotherapy alone.

Stroke rehabilitation is neglected in Pakistan and local data is scarcely available on the subject.

With this background in mind a 18 months observational study was carried out

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to identify the shortcomings and pitfalls in the stroke rehabilitation referral and consultation in our local population

## **PATIENTS AND METHODS**

### **Medical Settings**

The study was conducted at the Stroke clinic, Armed Forces Institute of rehabilitation Medicine (AFIRM). It is a 100 bed tertiary care rehabilitation institute; the largest rehabilitation facility in the country.

Stroke clinic at AFIRM was established in March 2005 and provides comprehensive inpatient and out door stroke rehabilitation services in the fields of physical therapy, psychotherapy, occupational therapy, speech therapy, counseling and patient education, bladder and bowel management and gait training. The orthopedic workshop manufactures orthosis and provides the patients with gait aids like walking canes, wheel chairs and rollators.

### **Inclusion criteria**

- Patients of both genders
- Patients more than 18 years of age
- Patients presenting to Stroke clinic for rehabilitation with first stroke, irrespective of the duration.

### **Exclusion criteria**

- Patients of sub-arachnoid hemorrhage
- Patients unwilling to give consent and having no previous medical record

### **Patient's enrollment and data collection**

One hundred and seventy one patients of stroke fulfilling the inclusion criteria presenting to stroke rehabilitation clinic AFIRM from March 2005 - September 2006 were enrolled in this study. Verbal consent was obtained from the patients at the start after explaining the purpose of the study. Each patient was assessed in detail by obtaining a complete history to ascertain the side of involvement, duration of stroke, identification of risk factors and family history of such event. Complete examination was performed with emphasis on neurological and musculoskeletal system to determine the residual weakness and

presence of musculoskeletal disorders like adhesive capsulitis, spasticity and contractures. Radiological investigations in form of CT scan and MRI brain were reviewed (if available) to determine the type of stroke (Ischemic VS Hemorrhagic). Medical documents and records were examined to see the type and time of referral for stroke rehabilitation.

### **Data analysis**

Data was entered on proformas specifically designed for the study purpose and record was maintained on two separate computers. Data was compiled in Nov 2006 and data analysis was done by using SPSS V 14.

## **RESULTS**

There were 132 (77.2%) males and 39 (22.8%) female patients. Radiological investigations were not available in some patients. In the remaining patients the frequency of Ischemic VS Hemorrhagic was 82% and 18% respectively. Involvement of right and left cerebral hemisphere was almost equal with 53% and 47% respectively. The risk factors for stroke were present in 154 (90.01%) cases and are as per (fig. 1). In 17 (9.9%) patients no risk factor could be identified. Many patients had developed complications by the time they reported to our department See (fig 2).

Majority 153 (89.5%) of the patients were referred as OPD cases while indoor rehabilitation consultation was made only for 18 (10.5%) patients. Only 04 (2.3%) patients were seen within 48 hours of stroke onset. In 39 (22.8%) cases consultation was made between one week to one month and for 116 (67.8%) between one to six months, while it was delayed beyond six months in 12 (7%) patients.

On interviewing the patients and examining the medical records available it was seen that following were the main pitfalls and shortcomings in Stroke Rehabilitation

- Non availability of Rehabilitation Medicine physicians
- Late / No referrals (54%)
- Inadequate referrals (48%)

- Poor positioning in initial phase (83%)
- Long-term placement of indwelling catheters (17%)
- Lack of patient and family education (92%)

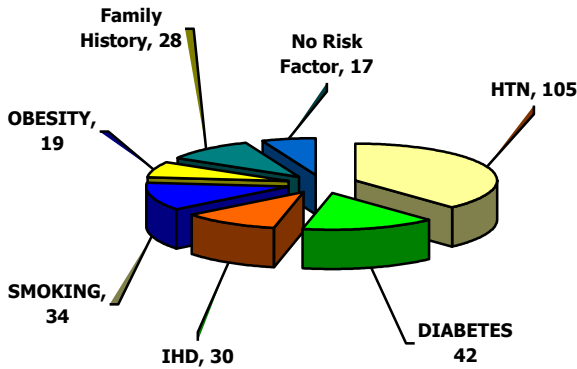
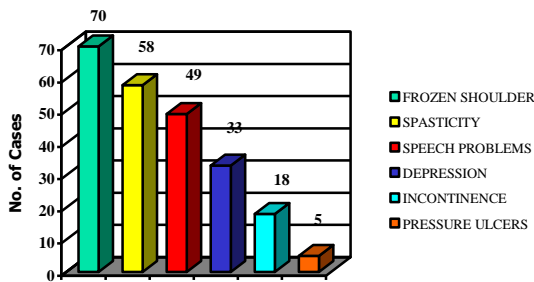


Fig. 1: Risk factors of stroke present in this study



\* Total = 233, because many patients had more than one complication

Fig.2: Complications in stroke survivors presenting to Stroke clinic AFIRM\*

**DISCUSSION**

Stroke is the third common cause of death worldwide [4] and leading cause of long term disability and morbidity. Once a permanent neurological deficit sets in, there is not much that can be done to reverse the damage. But timely enrollment in a comprehensive stroke rehabilitation program can minimize the impairments, reduce complications and lead to successful reintegration of individual into the society.

Stroke rehabilitation is an active process beginning during acute hospitalization, progressing for those with residual impairments to a systematic program of rehabilitation services, and continuing after the individual returns to the community [5]. It is an organized effort to help stroke patients maximize all opportunities for returning to an

active and productive lifestyle. Because the clinical manifestations of stroke are multifaceted and complex, stroke rehabilitation is best implemented through the coordinated efforts of a team of rehabilitation professionals [6].

The access to stroke rehabilitation services in Pakistan is either not available or not well organized as evident from this study. In cases where the facilities are available they are grossly under-utilized. The gender distribution, etiology, risk factors and involvement of hemispheres is similar to the studies reported from local population and abroad [7-11].

The important shortcomings in the stroke rehabilitation are discussed as under.

**Non-availability of Rehabilitation Medicine physicians**

Nearly all major hospitals of the country have a rehabilitation or physiotherapy department, but qualified rehabilitation physicians are at present available only in Agha Khan Hospital, JPMC (Karachi) Children hospital and Mayo hospital (Lahore). Things are much better in Armed Forces; with a tertiary care Rehabilitation institute located in Rawalpindi and availability of fellows in Physical medicine and rehabilitation (PM&R) in all class A Combined Military Hospitals. In a country of 150 millions, there are less than 20 fellowships in Physical medicine and rehabilitation so far. There is a dire need to improve the rehabilitation set up in the country so that access to early rehabilitation can be made.

**Late/No referrals**

Early admission to Stroke rehabilitation program results in better outcomes at discharge and reduces length of stay in the hospital [12]. But in our setup after discharge from acute medical ward patients are either not referred for stroke rehabilitation or referred very late in the course of the disease when avoidable complications like Shoulder subluxation, depression, urinary tract infections, depression, falls, contractures and abnormal gait pattern etc have already set in. Most of the patients (128) in this study made a

stroke rehabilitation consultation between one month and one year. Commonest reason cited by them for this late consultation was no referral or late referral by the primary treating physician.

### **Inadequate referrals**

Referrals are inadequate most of the time i.e. instead of a rehabilitation physician consultation to chalk out a comprehensive stroke rehabilitation program; referral is made for physiotherapy alone. As a result patients end up with physiotherapists who can help in regaining motor control and gait patterns but other aspects like patient education, management of bladder and bowel dysfunction, psychological evaluation and management of depression, prevention of falls, mobility aids prescription, vocational rehabilitation, speech therapy, occupational therapy and community reintegration are neglected. This was the case in most of the referrals (48%) in this study, with only a few of them mentioning the word "stroke rehabilitation" in their referral notes.

### **Long-term placement of indwelling catheters**

Bladder dysfunction in stroke is transient and short lived. A common practice is to pass an indwelling catheter in the acute medical wards and patients are discharged with catheters in place and remain so for a long period of time. This results in frequent UTI's and difficulty in achieving a catheter free state later during rehabilitation phase.

### **Lack of patient and family education**

Education of the patient and family on issues like prevention of recurrent stroke, life style modifications, home based exercise program and community re-integration are very important part of Stroke Rehabilitation interventions. It gives the patient an insight into the disease, leads to better understanding of the disability and coping with the lost function. Unfortunately patient education is not a hall mark of our health care system. This aspect is more than often neglected in case of stroke patients at the time of discharge from the medical ward. The only advice patient and family gets is of "Malish (massage) and

Warzish (exercises) at home. Nearly all (92%) of the patients enrolled in our study did not receive any information about the nature of the disease and its long term implications during their stay in the medical wards. Very little information was offered by the doctors. In case inquiries regarding the prognosis and long term care and outcomes of the disease were made the health care professionals involved in the early care were unable to satisfy the patients and his/ her attendants [13].

### **CONCLUSION**

To the best of our knowledge this is the first attempt to identify the shortcomings of stroke rehabilitation in Pakistan. It is evident from the discussion above that there is a dire need to change the attitude towards Stroke rehabilitation, if optimal outcomes of a stroke survivor and his or her reintegration into society is desired. There should be a close coordination between the medical physicians and rehabilitation medicine specialists and an early consultation with rehabilitation physician should be made within 24-48 hours of stroke onset. It would be very beneficial if residents in medicine and neurology spend some time in rehabilitation departments in order to have an idea of stroke rehabilitation.

### **REFERENCES**

1. Nudo RJ, Duncan PW: Recovery and Rehabilitation in Stroke Stroke 2004; 35: 2690.
2. Zorowitz RD, Gross E, Polinski D. M The stroke survivor Disabil Rehabil 2001; 24: 666-9.
3. Roth EJ, Heinemann AW, Lovell LL, Harvey RL, McGuire JR, Diaz S. Impairment and disability: their relation during stroke rehabilitation. Arch Phys Med Rehabil 1998; 79:329-35.
4. Roth EJ, Harvey RL. Rehabilitation of stroke syndromes. In: Braddom RL. Physical Medicine and Rehabilitation. Philadelphia: Saunders; 1996: 1053-99.
5. (Editors). Physical Medicine and Rehabilitation. Philadelphia: WB Saunders; 1053-1087.
6. Dobkin BH. Strategies for stroke rehabilitation. Lancet Neurol 2004; 3:528-36.
7. Gresham GE, Alexander D, Bishop DS, Giuliani C, Goldberg G, Holland A, et al. Rehabilitation. Stroke. 1997; 28:1522-26.
8. Alam I, Haider I, Wahab F, Khan W, Taqweem MA, Nowsherwan. Risk factors stratification in 100 patients of acute Stroke J Postgrad Med Inst 2004; 18: 583-91.

9. Basharat RA, Yousuf M, Iqbal J, Khan MM. Frequency of known risk factors for Stroke in poor patients admitted to Lahore General Hospital in 2000 Pak J Med Sci 2002; 18: 280-3.
10. Naseem A, Mahmood, Hussain T, IKhan IA. Clinical spectrum of Stroke in our adult population Pak Armed Forces Med J 2003; 53: 59-67.
11. Bonita R. Epidemiology of stroke. Lancet 1992; 339: 342-44.
12. Sacco RL. Risk factors and out comes for ischemic stroke. Neurology 1995; 45: (Supl 1): S10-14.
13. Maulden SA, Gassaway J, Horn SD, Smout RJ, DeJong G. Timing of initiation of rehabilitation after stroke. Arch Phys Med Rehabil 2005; 86(12 Suppl 2): S34-40.

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