Rehabilitation Practice and Science

Volume 20
Issue 1 *Taiwan Journal of Physical Medicine and Rehabilitation (TJPMR)*

Article 17

12-1-1992

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DOI: https://doi.org/10.6315/3005-3846.1849
Available at: https://rps.researchcommons.org/journal/vol20/iss1/17

An Investigation of Post-Discharge Status of Surviving Stroke Patients in Keelung

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From April 1985, to December 1987, 1445 patients were admitted to Chang Gung Memorial Hospital, Keelung under the diagnosis of cerebral vascular accident (hemorrhagic or infarction type). By random selection, 343 patients were analyzed by the SPSS. Of these 343 patients, 185 had died by the time this study was carried out. Thus the data available for analysis was incomplete for this deceased group. Only the data of those who survivied was analyzed in the results. The average duration of follow-up was 50.2 ± 8.9 months (36-67 months). Among the survivors (n=158), 57% (n=90) received regular medication treatment, yet only 63% of these 90 patients fully understood the action of drug they received. The resons why 68 patients (43%) stopped taking the medication after discharge were analyzed. There were 66% of patients who had regular home rehabilitation program. For neuro-behaviour changes, 43% and 44.3% of patients had deterioration in their temper and memory respectively. There were 33.5% of patients reporting improvement in their ability to perform activities of daily living on follow-up.

Key words: cerebro-vascular disorder, follow-up.

INTRODUCTION

Successful and complete stroke rehabilitation care extends to the period after the stroke patients are discharged from the hospital. Regardless of the site of placement in these patients, either back to the home or to the nursing home, continuous care is of great importance. Medication to control the modified risk factors [1] and a regular, appropriate physical activity [2], in cases with motor deficit sequela, are two of the basic medical treatments that need to be followed by the stroke patients after the acute phase.

Geographically, Keelung City is located in a mountainous area. For a non-ambulatory, physically-disabled patient, it is man-power or time consuming as far as a trip to the out-patient department is concerned. Thus, it is likely that the patients here will not have further medical follow-up after discharge from the hospital.

In Taiwan, there have been relatively few community-wide studies that shed light on the post-discharge status of the storke patients. The purpose of this study is to investigate the post-discharge status of the stroke patients in Keelung.

MATERIALS AND METHODS

From April 1985, to December 1987, 1445

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patients were admitted to Chang Gung Memorial Hospital, Keelung, under the diagnosis of cerebral vascular accident (hemorrhagic or infarction type). By random selection, 343 patients were surveyed via personal or telephone. Of these 343 patients, 185 had died by the time this study was carried out. Thus, there the data available for analysis was incomplete for this deceased group. Only the data of those who survived was analyzed in the results, unlesss otherwise stated.

Information obtained during the study included basic personal information, regularity of follow-up at out-patient department (OPD) for medication, patients' understanding about the prescription, performance of home rehabilitation program, neuro-behavior changes after stroke, functional ability to perform activities of daily living (ADL). Patients' extent of understanding about the prescription was divided into three categories, namely: understand, not understand and not very sure of the action of the drugs prescribed.

To assess and compare the pattern or recovery in ADL of the patient, Barthel Index was used [3]. Initial Barthel scoring was given on the day of discharge. Final Barthel scoring was given while the survey was carried out.

The data were analyzed by the Statistical Package for the Social Sciences (SPSS). Chi-square test was used in the statistical analysis. P value less than 0.05 was considered as significant.

RESULTS

Among the 343 patients who were surveyed, 158 survivors were grouped in group A, while the 185 patients who died by the time the survey was carried out were in group B. For group A, the average duration of follow-up was 50.2 ± 8.9months (36-67 months). The average ages of the patients in group A and B were 65.8 ± 0.8 years and 64.8 ± 0.8 years, respectively. The range of age was 41-93 years in group A and 34-90 years in group B. The ratio of number of male to female patients in group A and B were 1:0.7 and 1:1.4 respectively (Table 1). Among the 343 patients, there were 63 and 162 patients who suffered from diabetes mellitus and hypertension respectively.

In group A, 90 patients (57%) received regular treatemnt at out-patient department after discharge from hospital. Sixty-three percent of these 90 patients fully understood the action of drugs they received. The remaining 37% of

Table 1. Sex distribution of the patient

Group \ Sex	Male	Female	Total
A (Alive)	92 (58.2%)	66 (41.8%)	158 (100%)
B (Deceased	78 (42.2%)	107 (57.4%)	185 (100%)
TOTAL	170 (49.6%)	173 (50.4%)	343 (100%)
	X2=8.80	P=0.003	

them reported that they were either not very sure or did not understand about the action of drug they received (Fig. 1). Among the 68 patients in group A who stopped taking the medication on follow-up, 32.4% of them shifted to herb drug, 23.5% of these patients refused medication treatment and 10.3% stopped taking the medication due to financial problem (Fig. 2)

Analyzing the reasons for quitting home rehabilitation programs after discharge, 10.1% of the patients in group A refused to have further physical activity, and 6.9% of patients quit due to the factors related to care-givers, either they were refused by the care-giver or they had never learned about the home program before (Table 2.).

For the neuro-behavior changes noted after discharge, majority of them reported to have either a stationary of deteriorated condition as shown in Table 3. There were 43% and 44.3% of patients who had deterioration in

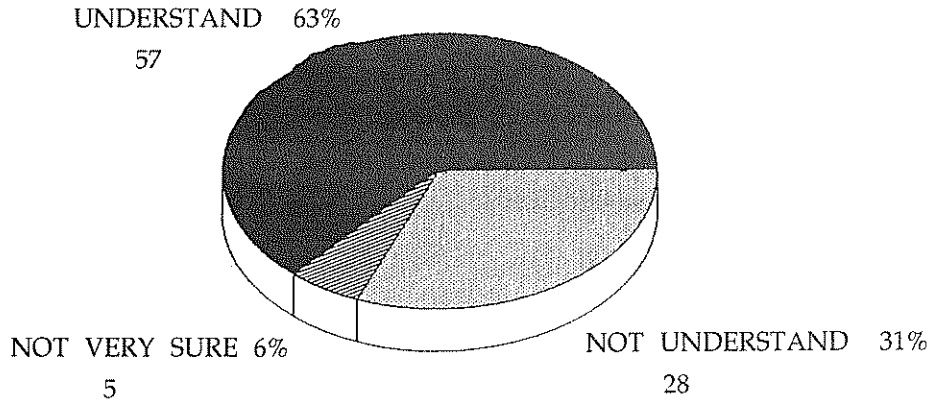

Fig. 1. The extent of understanding the prescription medications among the patients (n=90)

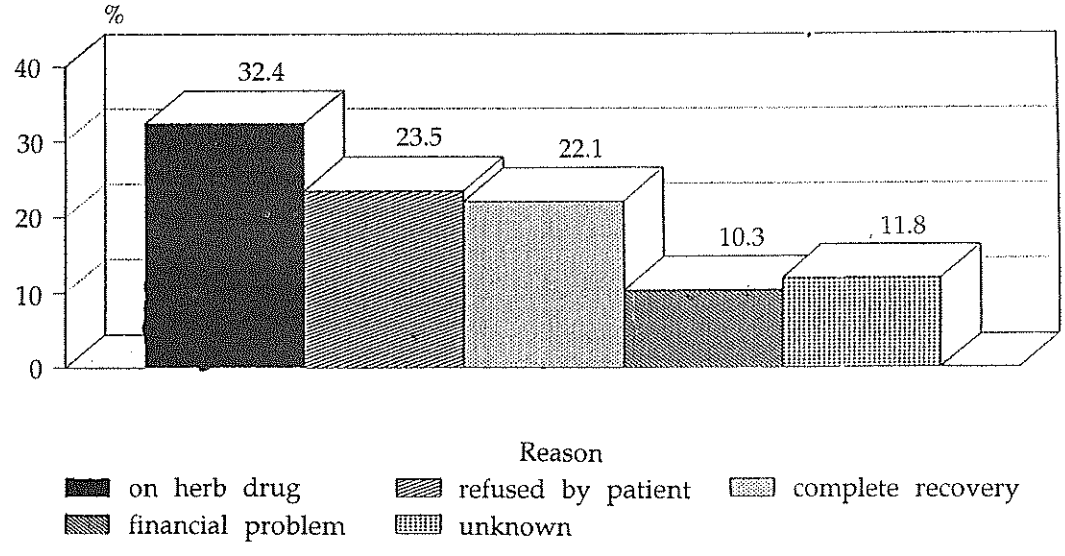

Fig. 2. Reasons for quitting medication (n=68)

Table 2. Reasons for quitting home program

Reason	Number	% (n=96)	% (n=158)
Complete recovery	64	(66.6%)	(40.5%)
Refused by patient	16	(16.7%)	(10.1%)
Factors related to care-giver	7	(7.3%)	(4.4%)
Not learned before	5	(5.2%)	(2.5%)
Unknown	4	(4.2%)	(2.5%)

Group A : n=158
(Among them, 96 patients quit home program after discharge)

Table 3. Changes in neuro-behavior after stroke in group A patients (n=158)

Neuro-Behavior \ Changes in Neuro-Behavior	Deteriorated	Improved	Stationary
Memory	70 (44.3%)	0 (0%)	88 (55.7%)
Temper	68 (43.0%)	10 (6.3%)	80 (50.6%)

Table 4. Distribution of group A patients according to the self-feeding ability@ (n=158)

Timing of Evaluation \ Self-Feeding Ability	Able	Unable
* At discharge	116 (73.4%)	42 (26.6%)
* At study	145 (91.8%)	13 (8.2%)
X2 = 18.5	P=0.00003	

@ Evaluated at two different occasions
* The average duration of follow-up after discharge was 50.2±8.9 months

Table 5. Distribution of group A patients according to ability to walk independently@ (n=158)

Timing of Evaluation \ Ability to Walk Indenpendently	Able	Unable
* At discharge	100 (63.3%)	58 (36.7%)
* At study	136 (86.1%)	22 (13.9%)

@ Evaluated at two different occasions
* The average duration of follow-up after discharge was 50.2±8.9 months

their temper and memory respectively.

By comparing the final and initial Barthel scoring of the individual patient, it was found that 53 patients (33.5%) had improvement in their ability to perform activity of daily living on follow-up. There were 29 (from 116 increased to 145 patients) and 36 (from 100 increased to 136 patients) patients whose ability to self-feed and walk independently improved, respectively (Table 4,5).

DISCUSSION

From the data shown in Table 1, there was higher ratio of female patients in the deceased group. This finding, i.e. lower survial rate among the female population as compared to the male population, was similar to the study conducted by Tseng in Taipei City in 1980 [4] and Hutchinson in 1975 [5]. The explanation for this phenomenon is still unclear.

From the results, it was found that the average age of the patients at the time of stroke was around 65 years in Keelung. As the survival rate of stroke patients has increased in recent years due to progress in the treatment of strokes [1], it is predicted that, in Keelung, the geriatric population, whether healthy or not , will increase in number in the near future. Thus, it is the responsibility of the authorities concerned to take part in and plan aggressively for the social welfare of the geriatric population.

Among the 158 patients in group A, 90 patients received regular medication. Even though they have such a good compliance, not all of them are fully understood of the action of drugs received (Fig. 1). Under such circumtances, these patients were most likely to be at risk for quitting medication in the future, especially when they encountered problems, such as transportation, time or finances, in the matter of regular medical follow-up. Thus, the importance of pharmacological treatment [1] should be emphasized while educating the patients.

Further investigation of the factors behind noncompliance to the medication regime in the remaining 68 patients in group A that did not have regular teatment, showed that 32.4% of them believed in the effectiveness of traditional herb drugs (Fig. 2). This is a phenomenon commonly found in the Chinese society.

In Table 2 shows that 20.2% patients in group A quit home rehabilitation program after discharge. Excluding those patients who had complete recovery, there were 66.0% of patients that had a regular home program after discharge. Such a high percentage may be duc to the successfulness of the home-visit sys-

tem which provides medical services to those out-patients who are unable to pay regular visit to the hospital. Besides Chang Gung Memorial Hospital, there are other six hospitals in Keelung which can provide home visit service. Besides monitoring the vital signs of the patient, the team member who makes the home-visit group helps and teaches the patient or family the basic physical exercise in an effort to prevent the complications due to the immobilization.

Neuro-behaviour changes after stroke are frequently encountered in cilinical parctice, some improved but some deteriorated [6]. Such impairment had a negative effect on functional outcome [7,8,9,10]. Unawareness of this phenomenon could lead to frustration and misunderstandings between the patient and family members [11]. Table 3 shows that 44.3% and 43% of patients in group A had deterioration in their memory and temper, respectively. Such a change in the quality of relationships between the patients and family members will certainly affect the rapport of the family members. Hence it in the responsiblity of the medical personnel to inform the patient or family member the phenomenon that they may encounter during the chronic phase and educate them about strategics to face the problem, whenever nccessary.

Table 4 and 5, illustrate that in group A, there were 29 (from 116 increased to 145 patients) and 36 (from 100 increased to 136 patients) patients who had improvment in their ability of self-feeding and walk independently respectively. From the Barthel scoring, it was shown that 53 patients had improvement in their ADL performance on follow-up. Thus, this verified that the functional outcome of the stroke patients at discharge was not a permanent status (12). Without complications, the majority of the patients will improve in their functional ability in the long run, if they have the strong motivation to cooperate with the medical personnel.

The rehabilitation process is a journey, not a destination. The weakest link in most rehabilitation programs is follow-up care after discharge from the acute care unit. Failure in this respect will result in regression. Thus, urgent need for follow-up work is suggested.

In order to provide better service to the public, Chang Gung Memorial Hospital, Keelung, as the main district hospital in Keelung should actively implement thee following:

1) Public health education seminars for the out-patients.
2) Training courses for medical personnel of nearby hospitals, clinics, community clinics in order to foster the early completion of referral system that is currently emphasized by the Ministry of Health.
3) Home-visit system which provides better and complete care to those patients who have difficulty visiting the out-patient department due to different factors.

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基隆區腦中風病患出院後居家情況追蹤報告

張春琴　陳文玲　黃美涓

爲了解基隆區腦中風病患在出院後居家情形，吾人以在民國74年4月至76年12月期間因腦中風疾患（只含高血壓性腦出血及顱內血管病變兩種出血及缺血性腦中風疾患病患）而住進基隆長庚紀念醫院的病患爲調查對象，探討他們出院後居家情形。調查方式以問卷爲主，配合採電話訪問或家中訪視。1445位個案中抽樣其中1／3個案做訪問。得有效問卷共343份，以SPSS法作整理及分析。

343位病患中男女各爲170位及173位，把仍存活病患歸爲A組，有158位；已去世者歸爲B組，共有185位。由於B組中病患已去世，所得資料不夠完整，所以只分析A組病患資料。A組中，出院後追蹤時間平均爲50.2±8.9個月。

A組中，有90位(57％)病患出院後仍有繼續服藥的習慣，其中63％對所服用藥物非常了解，6％不太了解藥物的作用，31％根本不了解藥物的作用。雖然如此，仍有部份病患(93.3％)是按醫囑準時服藥的。其餘43％沒繼續服藥的病患，分析其原因以改服中藥爲中的佔多數，有32.4％。

出院後仍有繼續居家復健者佔39.2％，其餘沒有做居家復健患者中，40.5％病患是因運動功能已完全恢復，10.1％是因病患拒絕而放棄運動，及6.9％病患是照料者因素所致（沒有時間或不會做），其餘的2.5％原因不詳。

在神經行爲變化上，有43.0％病患脾氣變得比中風前更暴躁。在記憶力衰退方面，有44.3％病患自認有現象。

在中風後自理能力方面的變化，以Barthel Index來評估，發覺有53位（33.5％）病患在出院後日常生活自理能力比在出院時進步。單獨評估病患獨立進食及步行能力時，亦發現各有29位（18.4％）及36位（22.8％）病患在這兩方面的能力上有比出院時進步。

長庚紀念醫院　復健科