

REHABILITATION OF PATIENTS ON RECURRENT HAEMODIALYSIS

ABU BAKAR SULEIMAN
ZAKI MORAD MOHD ZAHER
AZGHARI HAMID
CHOO SOKE HAR
MOK YOKE LAN

SUMMARY

A survey to assess the degree of occupational and physical rehabilitation was conducted on patients treated on chronic haemodialysis, using the semiquantitative Karnovsky scale. The survey revealed that over 90% of patients achieved good rehabilitation and returned to employment or to household duties. Chronic haemodialysis is effective in prolonging life and most patients were rehabilitated with useful levels of physical activity.

INTRODUCTION

Haemodialysis has been established as an accepted form of treatment for terminal renal failure for many years now. Haemodialysis which was started in the General Hospital, Kuala Lumpur in the late sixties, is now established, and many patients have benefitted

from this treatment. This treatment modality is expensive, and any consideration of benefit from this treatment must take into account not only the duration of life prolonged by the treatment and associated morbidity, but also the degree of occupational and physical rehabilitation. As a preliminary step in assessing this form of treatment, a survey of all patients treated on haemodialysis for at least two months was recently conducted, and some of the results presented. Only those aspects related to rehabilitation and physical activity are considered in this report.

METHODS

Patients on recurrent haemodialysis for at least two months in this department were included in the survey. The survey was carried out by a social worker and two haemodialysis nurses over a six-week period. All patients were asked questions regarding age, sex, racial group, length of formal education, employment status, physical activity status according to the semiquantitative Karnovsky scale (Table I). Individual judgement was exercised in evaluating the physical activity of individual patients, guided by a detailed description of the Karnovsky scale. These interviews usually took 15 to 20 minutes. All patients were dialysed four hours three times weekly. Forty-nine patients were either performing dialysis at home or were about to start home haemodialysis after a period of training. The other 93 patients were being dialysed in hospital. These patients were also trained for self-dialysis in hospital.

Abu Bakar Suleiman, MBBS, FRACP
Zaki Morad Mohd Zaher, MBBS, MRCP
Consultant Physicians

Azghari Hamid, Medical Social Worker
Choo Soke Har, SRN
Mok Yoke Lan, SRN
Haemodialysis Nurses

Department of Nephrology
General Hospital
Kuala Lumpur, Malaysia

TABLE I
LEVEL OF PHYSICAL ACTIVITY ACCORDING TO KARNOVSKY SCALE

Activity	Scale	Group
Normal; No complaints	100)	
No evidence of disease	100)	
)	almost normal 90 +
Normal activity; minor signs and symptoms of disease	90)	
)	
Normal activity with effort some signs and symptoms of disease	80)	active 80-89
)	
Care for self; unable to carry on normal activity or do active work	70)	selfcare 70-79
)	
Require occasional assistance but able to care for most of needs	60)	
)	debilitated 40-69
Requires considerable assistance and frequent medical care	50)	
)	
Disabled, requires special care	40)	
)	
Moribund to severely disabled	1-39)	moribund

OCCUPATION OF PATIENTS ON RECURRENT DIALYSIS

Description	Scale	Group
Never worked	1	unemployed
Unskilled worker	2)	
)	unskilled
Semi-skilled worker	3)	
)	
Skilled blue collar or trained white collar worker	4)	
)	
Minor managerial	5)	
)	
Mid level managerial	6)	skilled
)	
Executive or professional	7)	
)	
Part-time homecare	8	
Full-time homecare	9	
Retired	10	

RESULTS

Table II summarises certain selected characteristics of the population surveyed. There were twice as many male as there were female patients, and 54.9% of patients were Chinese, with 36.6% Malays. Their ages varied between 13 and 70 years, with the majority in their third, fourth and fifth decades of life. The two groups of patients surveyed consisted of patients established on home haemodialysis or who were about to be established at home, and those who were treated on haemodialysis in hospital.

Evaluation of physical activity revealed that 96% of patients were either 'active' or 'almost normal' (Table III) and 86% were 'almost normal'. The proportion of patients achieving this level of activity was the same for the home haemodialysis group and the hospital dialysis group. In patients over the age of 50, 92.4% were in the 'active' or 'almost normal' group. There was one patient on home dialysis and one on hospital dialysis who were

considered debilitated, requiring occasional assistance, but were able to take care most of their own needs.

More than 81% of patients were employed under the 'skilled' or 'unskilled' category, and 56% were in the 'skilled' group. Although there were more Chinese than Malay patients, the number of patients working in the 'skilled' category was the same for both groups. Nearly 15% of patients were occupied looking after the home, mostly full-time. Three patients out of 21 in this group could only perform part-time home care, where previously they would do it full-time before the illness. (Table IV).

Over 75% of patients completed secondary education and another 16.2% had further education, but did not attend tertiary education. Only 8.4% completed tertiary education.

DISCUSSION

Patients treated on long-term haemodialysis are a highly selected group. Patients accepted for this

TABLE II
CHARACTERISTICS OF 142 PATIENTS ON RECURRENT HAEMODIALYSIS

Characteristics	Number of Patients	(%)					
Sex:							
Male	96	67.6					
Female	46	32.4					
Race:							
Chinese	78	54.9					
Malay	52	36.6					
Indian	11	7.8					
Others (Kadazan)	1	0.7					
Level of Education:							
0 - 11 years	107	75.4					
12 - 13	23	16.2					
13	12	8.4					
Age of patients on chronic haemodialysis (yrs)							
	19	20 - 29	30 - 39	40 - 49	50 - 59	60 - 69	70
Number of patients	5	28	42	45	18	4	1

treatment are those being prepared for living related donor renal transplantation, failed renal transplants and patients for self-haemodialysis, the financial burden for self-dialysis being borne by the employer or the patient's family. This report analyses part of the data from a survey of patients on haemodialysis, to attempt to assess the degree of physical and occupational rehabilitation, patient acceptance of their illness, and tolerance of any disabilities resulting from their illness.

This survey was conducted by three staff members of the haemodialysis unit, and by the nature of the survey, the presence of a certain element of observer bias cannot be completely excluded. Some of the problems in the use of the Karnovsky scale, in particular, observer variability has been pointed out by Hutchinson². Attempts were made to minimise observer variability by limiting the number of questions asked, avoiding medical questions and by applying the different elements in the Karnovsky scale in as uniform a manner as possible. We have followed Gutman's modification³ of the Karnovsky scale in analysing the data, into groupings of 'almost

normal', 'active', 'self-care only', 'debilitated' and 'moribund', as this describes succinctly in a practical manner the various elements of the Karnovsky scale, which we feel helps to reduce observer error in the use of this scale.

The patients' employment status has probably been sufficiently well described, to minimise observer errors. Again we have followed Gutman's classification into groups of 'unemployed', 'unskilled', 'skilled' and 'part-time and full-time housework'.

The data on physical activity showed that more than 96% of patients were 'almost normal' or 'active' and can be considered rehabilitated, and compares favourably with other reports by Blagg,⁴ Gross and Keane.⁵ The employment status of patients revealed that over 80% were employed and another 15% were actively looking after the home. There were a few patients who were able to work normally, but could not, as their place of employment were in other states. They were considered as being employed.

TABLE III
PHYSICAL ACTIVITY OF 142 HAEMODIALYSIS PATIENTS ACCORDING TO KARNOVSKY SCALE

Karnovsky Scale	Home Haemodialysis	Training for Haemodialysis	Centre Haemodialysis	Total (%)
90 - 100 (almost normal)	33	16	73	122 (85.9)
80 - 89 (active)	3	1	11	15 (10.6)
70 - 79 (self care only)	1	-	2	3 (2.1)
40 - 69 (debilitated)	1	-	1	2 (1.4)
1 - 39 (moribund)	-	-	-	-
Total	38	17	87	142

TABLE IV
OCCUPATION OF PATIENTS ON RECURRENT DIALYSIS

	Malay	Chinese	Indian	Others	Total (%)
Unemployed	-	-	-	-	-
Unskilled	12	24	2	-	38 (26.8)
Skilled	36	37	6	1	80 (56.3)
Home care	2	17	2	-	21 (14.8)
Retired	2	-	1	-	3 (2.1)

This experience revealed a high rate of rehabilitation and return to productive life and compares favourably with the other reports. However comparisons with experiences from other centres may not be valid, in view of the mode of selecting patients for treatment. The majority of patients here were in the third, fourth and fifth decades of life, were generally employed or whose family could bear the financial burden of haemodialysis. In the group above the age of 50, the rate of rehabilitation at 92.8% was excellent, but it was noted that only 65.8% were in the 'almost normal' group, compared with 86% of the total population in this group. This suggests that rehabilitation in the older age group is less good than in the younger age group, which is not surprising.

It is the policy of the department for self-dependency dialysis to be practised, either at home or in the hospital haemodialysis unit. This has been well accepted by patients, but in this study no attempt was made to differentiate between these two categories of patients. It has been observed that there are many advantages of home dialysis such as having a more pleasant, familiar surroundings, flexible, convenient dialysis schedule, no time lost due to travelling and for the hospital, it allows for three to four times as many patients to be treated.⁴ It has also been observed that patients dialysing at home made a better adjustment to dialysis⁶ and appeared happier and healthier⁷ than patients on dialysis in hospital. Johnson felt that this was because the home patients were motivated by home dialysis to effectively participate in their own care, and maintain a healthy and independent attitude. We believe this to be important and have practised a policy of self dependency dialysis, either at home or at the hospital. The rate of rehabilitation between the home dialysis group and the hospital dialysed group was similar in this report.

It is not practical to expect all patients to be able to perform self dialysis. However in our experience, bearing in mind the selection process, almost all patients were able to perform dialysis

independently, irrespective of the educational background. A few patients required assistance from a family member because of poor eyesight. However different patients required varying periods of training, and while the majority could be trained in less than three months, some, especially the more elderly, required longer periods of time.

The male population on haemodialysis is double that of females. There is no obvious reason for this, except that the selection criteria probably favoured males or that fewer female patients presented to hospital with chronic renal failure.

Chronic haemodialysis, like the other forms of treatment for chronic renal failure is not ideal as it does not restore to normal, renal physiology, and it requires repeated, lifelong treatment. However it is obviously successful in prolonging life, with good rehabilitation and useful level of physical activity for most patients. It is important that an assessment of the 'quality of life' be made so that doctors and patients may be aware of the problems, and also of the success that can be attained with treatment so that expectations can be maintained at realistic levels.

ACKNOWLEDGEMENT

We thank the Director General of Health, Malaysia for permission to publish this paper.

REFERENCES

- ¹Karnovsky DA, Burcienel JH. The clinical evaluation of chemotherapeutic agents in cancer. In: Macleod CM Ed. *Evaluation of chemotherapeutic agents*. New York: Colombia University Press 1949; 191-205.
- ²Hutchinson TA, Boyd N F, Feinstein AR, Gonda A, *et al*. Scientific problems in clinical scales, as demonstrated in the Karnovsky index of performance status. *J Chron Dis* 1979; 33: 661-666.
- ³Gutman RA, Stead WW, Robinson RR. Physical activity and employment status of patients on maintenance dialysis. *New Engl J Med* 1981; 304, 309-313.

⁴Blagg CR, Hickman RO, Eshbach JW, Scribner BH. Home haemodialysis: Six years experience. *New Engl J Med* 1970; 283 (21): 1128-1130.

⁵Gross JB, Keane WF. Survival and rehabilitation of patients on home haemodialysis: five years experience. *Annals Int Med* 1973; 78: 341-346.

⁶Johnson WJ, Hathaway DS, Anderson CF, *et al.* Haemodialysis-comparison of treatment in the medical centre, community hospital and home. *Arch Int Med* 1970; 125: 462-467.

⁷Friedman EA, Kountz SL. Impact of HR-I on the therapy of end-stage uraemia. *New Engl J Med* 1973; 288: 1286-1288.