

Compliance of End Stage Renal Disease Patients on Haemodialysis

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Abstract

Background: To find out the factors which are responsible for non-compliance, even with free dialysis facilities.

Methods: In this prospective study the patients with renal failure who were on maintenance dialysis were studied. All had end stage renal disease (ESRD) and were on either twice weekly or thrice weekly dialysis with a 3 hour dialysis at each session. Adequacy of dialysis was assessed by the urea reduction ratio (URR).

Results: Out of the 30 patients studied 10% failed to report back after the second or third dialysis. 11.11% proceeded for renal transplant. 22.22% complied strictly with the prescribed dialysis prescription. The remaining 66.66% patients were non-compliant with the dialysis prescription and reported back to the dialysis unit at irregular intervals usually in a medical crisis. The period between each dialysis was directly proportional to the distance they had to travel from their homes to the dialysis unit. Staff attitude, explanation about the procedure, social support from relatives and financial constraints were all directly related to the degree of compliance.

Conclusion: Compliance with haemodialysis is unsatisfactory. The number of dropouts is alarming.

Key Words: End stage renal disease, Haemodialysis

Introduction

Successive improvements in the dialysis membranes and the use of the bicarbonate bath, and dialyser reuse, have made the dialysis procedure increasingly acceptable to patients. The benefits of these advances have failed to filter down. The patients on the lowest rung of the financial ladder are the ones most often seen with life threatening crises requiring not only immediate dialysis but also careful and regular maintenance haemodialysis. The purpose of dialysis is misunderstood by the users or the patients, many of whom labour under the naïve belief that the procedure will restore their kidney function. Haemodialysis must be done with a view to realistic and achievable end points. This requires that the physicians dealing with end stage renal disease

(ESRD) patients must have the psychological and medical training to impart the information and to support the patient through the period of disappointment and disillusionment that follows the explanation of the limitations of the procedure.¹ A comprehensive haemodialysis program can never be a success unless it is provided close to the patient's home, is coupled with a transplant program and is also linked with efficient nephrology services to prevent or delay the onset of renal failure.²

Patients and Methods

This prospective study was conducted at Combined Military Hospital, Abbottabad. Patients, with end stage renal disease (ESRD), registered at the dialysis unit were analyzed for a period of one year. They were prescribed twice to thrice weekly hemodialysis for 3 hours per session. After 1 year the data was analyzed to see the drop out rate. Those who were still following were assessed for dialysis adequacy once a week by calculating the urea reduction ratio using the formula: $URR = 1 - (\text{post} / \text{pre dialysis serum urea})$.³

The patients were interviewed for compliance rate and reasons for noncompliance. Their serial serum urea creatinine was analyzed, interdialytic weight was studied and they were assessed for other complications. Every patient, after a detailed clinical examination was subjected to blood complete picture and hematocrit, Chest X ray, 12 lead electrocardiogram, liver function tests, serum albumin and serum calcium and phosphorus. The reasons for non-compliance were recorded. The patients who were compliant were grouped into one group labeled group-1 and the patients who were noncompliant with their dialysis regime grouped into group-2 for comparison.

Results

Thirty patients were studied. Ages of the patients ranged between 22 to 55 years. Majority (22;

74%) were male. They were referred from various places for evaluation of renal functions and were found to have a creatinine clearance of less than 10 ml/min with bilaterally small kidneys (average size of kidneys on sonography at presentation was 8 cms). Nine (30%) had a history of hypertension and 11 (36%) had diabetes mellitus. In the rest of them no apparent cause could be detected. Five patients were brought in uraemic encephalopathy and 6 had pericardial rub. The average serum urea was 30 mmol/lit, creatinine 900 micro/lit, serum potassium 5.7mmol/lit and haemoglobin 8 mg/dl.(Table-1)

The dialysis was initiated via dual lumen catheter inserted in the subclavian vein. A-V fistula was formed on the average in the second week of initiation of the therapy. In 7 patients the fistula had to be redone due to non-functioning. The average hospital stay after initiation of the therapy was 10 days.

At the end of 1 year the data was analyzed for compliance. Eight patients (26.66%) strictly followed the prescribed regime of haemodialysis .Majority of the patients (63.33%) were noncompliant with the prescribed regime of haemodialysis to varying degrees. (Table 2) They were visiting the hospital for haemodialysis on the average of once in fortnight. The longest interval was 60 days in a patient who was brought in a state of uraemic encephalopathy. Rest of them reported back to the dialysis unit at irregular intervals usually in a medical crisis. They showed various degrees of ill health ranging from anorexia, anaemia, cachexia, pulmonary edema and infections to uremic encephalopathy and failed to derive any benefit from dialysis except the prolongation of life with a very painful existence.

In studying the laboratory data it was observed that the group-1 patients had on the average haemoglobin of 11gdl, hematocrit 35, serum albumin 32gdl, and a urea reduction ratio of 68% on the average. While the patients in group-2 showed a haemoglobin of 8gdl, hematocrit 28, serum albumin 25gdl, and a urea reduction ratio of 52% on the average. (Table 1)

On detailed interview the patients knew the importance of the dialysis for their disease and were convinced about compliance but all of them were noncompliant because of following reasons:

1. Financial constraints
2. Residing faraway from the dialysis centre (fig 1)
3. Problems faced by accompanying persons
4. Behaviour of staff at dialysis centre

Table 1: Clinical characteristics at presentation (n=50)

Characteristics	Number & %age
Age (yr)	35 +/- 5
Male sex	22 (74 %)
History of hypertension	9(30%)
History of diabetes	11(36%)
Average serum urea	30 mmol/l
Average serum creatinine	900micmol/l
Average serum potassium	5.7 mmol/l
Average Haemoglobin	8 mg/dl
Lost to follow	10 %
Strict compliance	5 %
<u>Laboratory data at follow up(Average)</u>	
	Group I Group II
Haemoglobin	11 g/dl 8 g/dl
Serum albumin	32 g/dl 25 g/dl
Urea reduction ratio	68% 52%

Table 2: Patients' Compliance Status

Compliance status	Number (%)
Lost to follow up	3 (10%)
Non-compliant	19 (63.3%)
Strictly followed dialysis regimens	8 (26.66%)

Of Visits To Distance

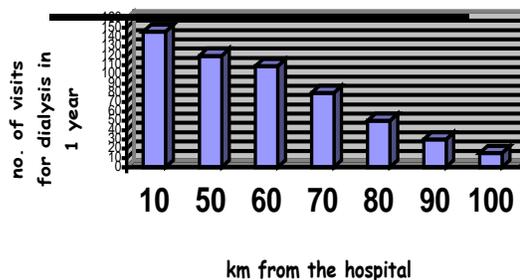


Figure-1 Compliance in accordance with distance travelled

Discussion

For most patients of ESRD, the choice of dialysis technique is determined by subjective issues, such as the patient's and physician's preference and prejudice, access to transportation, support in the home and community, and likelihood of compliance. ⁴

On the initiation of dialysis regimens patients usually have good expectations, but gradually desperation leads to non-compliance. Then patients become unable to compensate for the stresses of dialysis and required intensive psychotherapy.⁵ Most of our patients had to lose their job. Some of them had to sell their land or other valuables to cope with the financial burden thus ending up in vicious cycle of depression and non-compliance.²

It is the combination of good health care plus rehabilitation management that can help dialysis patient's return to active and fulfilling lives. The life options rehabilitation advisory council (LORAC) developed a comprehensive approach to renal rehabilitation based on 5Es i.e. encouragement, education, exercise, employment and evaluation. These 5Es have served as the basis for numerous activities of the life options rehabilitation program. More research has been reported on the demographics of noncompliant patients than on the effective methods that help the patient to improve adherence to the treatment regimen. Demographic characteristics do not consistently predict compliance for individual patients.⁶

Conclusion

The community and the decision makers should make concrete efforts to support this important, but neglected group of patients who are on the haemodialysis regimens.

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