Non-Compliance to Diet and Fluid Restrictions in Haemodialysis Patients

Pages with reference to book, From 293 To 295

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Abstract

Compliance with fluid and dietary instructions is a critically significant factorin the health and well-being of haemodialysis patients. Serial measurement of serum potassium (K) and interdialytic weight gain (IWG) were carried out in 50 haemodialysis patients at the Kidney Centre over a period of one month. Sixty-two percent were males. Ages ranged from 19-69 years (mean 49 years). Duration on dialysis varied from 6 months to 9 years. Patients with an IWG >1.5 Kg and/or serum K >5.5 m Eq/L were defined as non-compliant. Thirty-two patients (64%) were non-compliant in either diet or fluid. In 13 of these cases, both serum K and IWG were elevated. In the remaining 19, only one value was high. Predictors of non-compliance to diet and fluid regimens were older age (81%), males (68%), less education (75%), single (90%) depression (59%) and not feeling responsible for one's own well- being (85%). Attempts to improve compliance should be aimed by exposing the non-compliant group to nutritional and psychosocial therapy. (JPMA 45:293, 1995).

Introduction

Successful treatment of End-stage renal disease (ESRD) patients by haemodialysis requires the cooperation of the patient in maintaining a strict diet, restricting fluid and taking medications regularly[1]. It has been reported that between 20 to 78% of the haemodialysed patients are non-compliant to their diet and fluid therapy because of the alteration in their long-standing personal habits and life style[2,3]. The most frequent measure of compliance are interdialytic weight gain (IWG), serum potassium (K), blood urea nitrogen 'SUN) and serum phosphate[1,3,4]. Non-adherence to diet and d restrictions in these cases can result in serious complicanons like hyper kalemia and fluid overload[3-5]. Present study was conducted to identify the non- compliant group and the factors associated with non-compliance.

Patients and Methods

After informed consent, fifty patients of ESRD on maintenance haemodialysis for more than 6 months at the Kidney Centre were included in the study. All patients were on twice a week schedule, each of 4 hours duration on Baxter SPS 450+550 haemodialysis machine using hollow - fiber dialyzer. An acetate dialysate in the ratio of 1:34 was prepared using water from reverse osmosis water treatment plant. The demographic and psychosocial data and dietary pattern of these patients were reviewed individually through a questionnaire-cum-interview technique. The impact offinancial status and education on the degree of compliance was evaluated by socio-economic history and educational level. Information regarding dialysis variables were recorded from medical record of individual patients. For each patient a weekly predialysis serum K+ was measured by Flame photometer over one month and the mean was used as the actual value. IWG was calculated as the increase in weight during the period between two consecutive dialysis sessions. The mean of 4 IWG values, recorded for one month was calculated Patients with an IWO >i.5 Kg (norm: 0.5 Kg/day) and/or serum K+ >5.5 mEq/L (Norm: 3.5-5.2 mEq/L)weredefined as non-compliant[5].

Results

Of fifty patients studied, 31 were males and 19 females with ages between 19-69 years (mean 49 years). The duration of dialysis ranged fmm 6 months to 9 years with a mean of 23 months. The socio-demographic detail of the subjects is summarized in Table I.

Table I. Sociodemographic Details.

Characteristics	Distribution	Percent
Age		
50 years and below	29	58
>50 Years	21	42
Sex		
Male	31	62
Female	19	38
Educational level		
No schooling	10	20
Matric and below	20	40
Above Matric	20	40
Income level		
Rs.5000 and below	27	54
Rs.5001-9000	10	20
Above Rs.9000	13	26
Marital status		
Single	10	20
Married	40	80

Main causes of ESRD were chronic glomemlonephritis (40%), diabetes (26%) and hypertension (18%). Thirty-two patients (64%) were non-compliant in either diet or fluid or both. In 13 (41%) of these patients both, IWG and serum K+ were high. In the remaining 19(59%) only one value was elevated (IWG-84%, K+ - 16%) The demographic variables associated with any measure of compliance were age, sex, education and mantal status. Non- compliance was more in males (68%), elderly (8 1%), unmarried patients (90%) whose educational level was matric or below (75%). Income was not significantly related with non-compliance (figure 1).

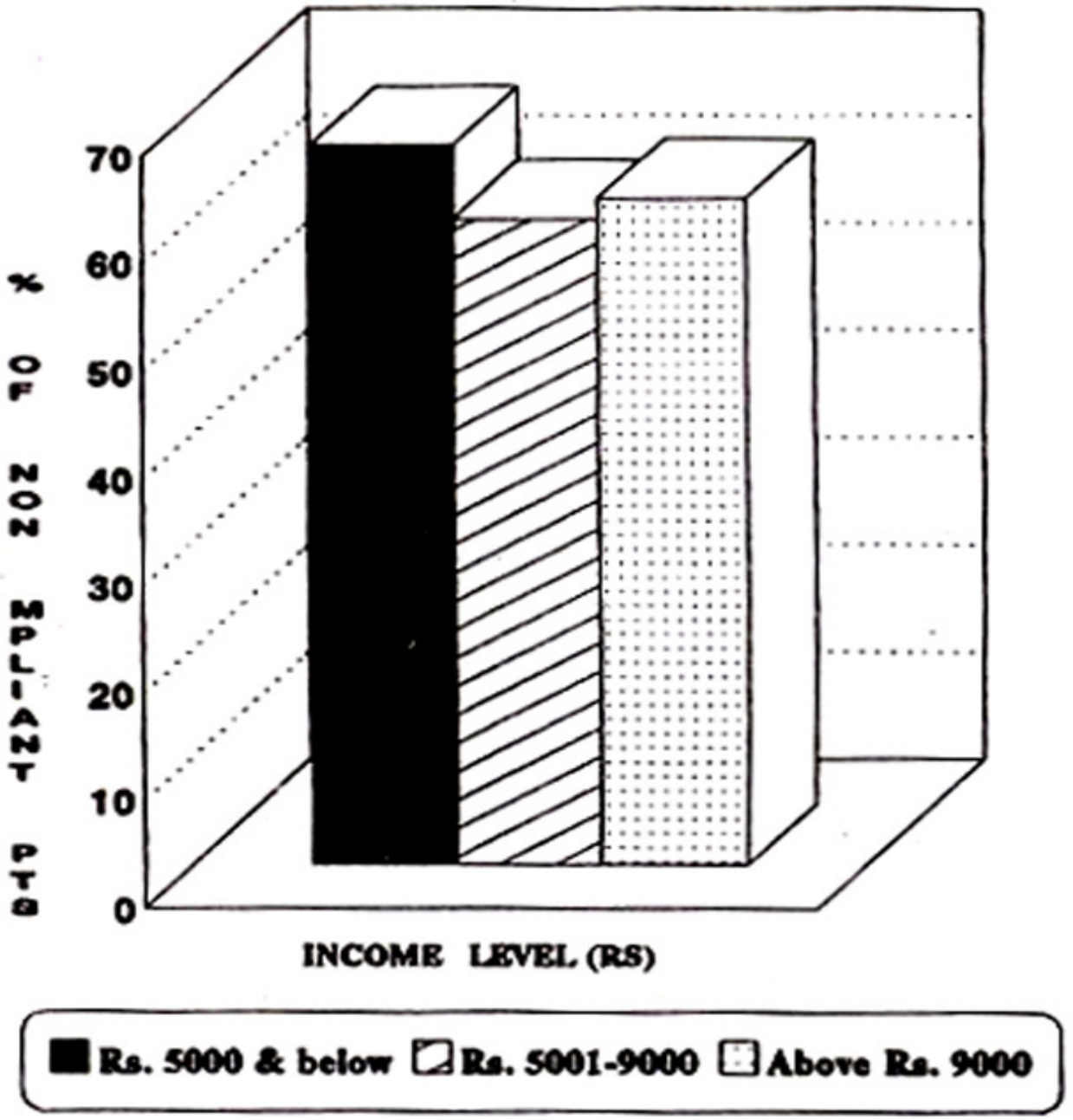

Figure 1. Effect of income on compliance.

Compliance was good in females (58%), younger age patients (52%), married individuals (57%) and well-educated patients (55%). Of those, who were on dialysis for less than a year, 60% were non-compliant, as compared to 66% on dialysis for more than a year, indicating that compliance was not related to duration on dialysis. Patients with an external locus of control, that is, those who do not hold responsibility for their well-being, are most difficult mad hering to dietary and fluid restrictions (Figure 2).

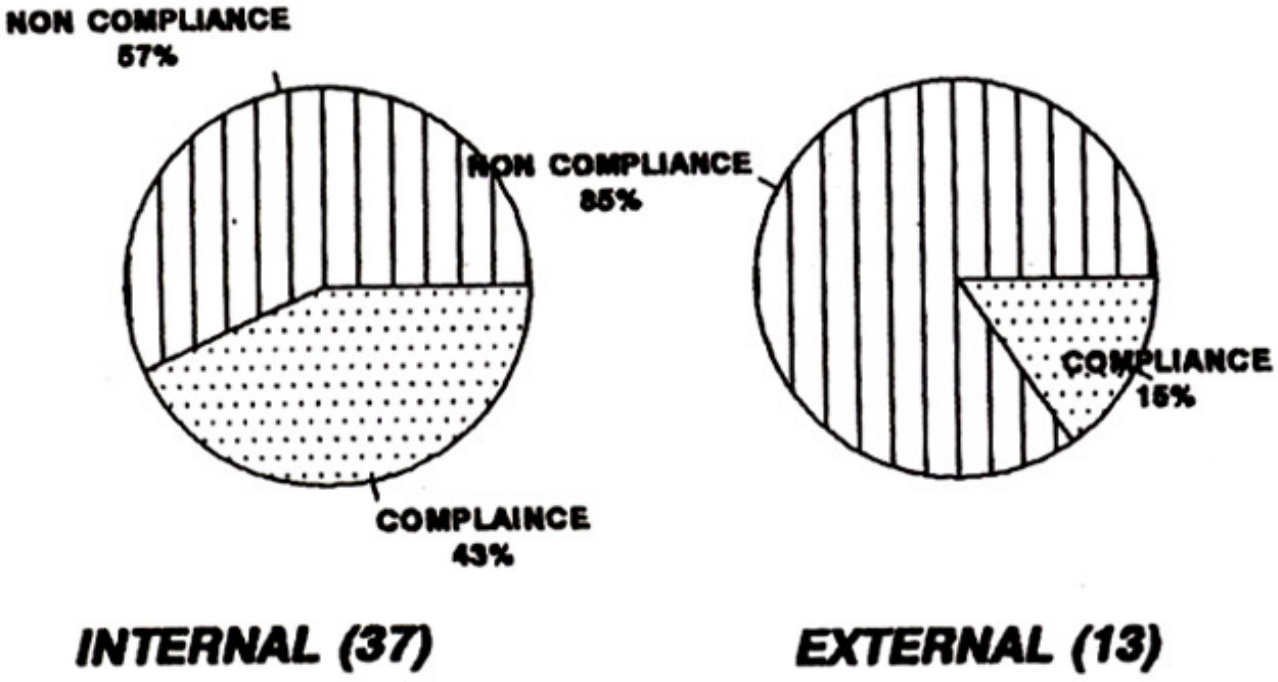

Figure 2. Locus of control/degree of compliance.

Depression was a strong predictor of non-compliance. 0129 patients who were depressed, 17(59%) were non-compliant in either diet or fluid prescription.

Table II. Relationship between knowledge of prescribed dietary regimens and compliance.

Variables	Total patients	Non compliant	
		Number	Percent
Know Why K^+ is restricted	35	13	37
Do not know	15	3	20
Know food high in K^+	47	16	34
Do not know	3	None	
Know why fluid is restricted	46	27	59
Do not know	4	2	50

Table II shows the association between the patients knowledge of their diet and fluid regimen and the level of compliance. Patients (48%) perceived a high level of difficulty in following fluid restrictions. It was seen that 34(68%) of 50 patients did not measure their fluid intake. This could also be a reason for fluid non-compliance.

Discussion

Chronic haemodialysis setup is ideal for studying the problems of non-compliance and abuse of the

medical regimen. The treatment is long-term and contact with the patient is prolonged and intensive. The medical regimen of dialysis is usually very clear cut, therefore, some aspects of compliance can be checked by objective measures. The findings of the current study indicate that diet and fluid non-compliance is common among our haemodialysis patients (64%). Similar results have been reported by others[2,4,6,7]. Compliance in haemodialysis is multidimensional including age, sex, duration on dialysis, economic and psycho-social factors[1,2]. In this study, the most non-compliant patients were the ones who were older (81%), males (68%) and less educated (75%). This is slightly different from the West where predictors of non- compliance are younger age[1,3,8,9], lower income[2] and higher educational levels[3]. Everett et al[3] reported male sex as a strong predictor of non-compliance, thereby supporting our results. According to Hoover[2], patients receiving dialysis over a longer period tend to become more compliant, whereas in our study, there was no significant difference between the two groups (<1 year [60%] and> 1 year [66%]). The reason could be that the dialysis unit at the Kidney Centre has not been in operation for a long time. Spouse support is a positive predictor of compliance[2,10]. Similar results were seen in the present study. Patients with an internal locus of control are more compliant as they recognize their own responsibility for their well being[2,3,11,12]. . Same was true in this study. Depression among ESRD patients is a common response to the haemodialysis regimen[7] and may reduce treatment adhering, coping behaviours[2,3]. Non-compliance in 59% patients in the present study confirms this finding. Our results showed no significant relationship between knowledge of prescribed diet and fluid regimen and non-compliance. Various studies[2,3] support this finding while others[2,5] show a strong positive relationship. Patients find it difficult to follow' fluid restrictions[5]. Reducing the perceived difficulty by using cognitive and behavioural strategies may help to increase compliance. Patient non-compliance remains a very significant threat to the efficacy of the dialysis regimenas well as to the well-being and survival of the patients. The findings of this study indicate the need for increasing the patient's awareness to their dietary regimens, reducing their perceived compliance difficulties and improving treatment coping behaviour. This can be achieved through specialized nutritional, educational interventions along with continuous psychosocial support. This is more important in our setting as we are already under dialysing patients, twice weekly. because of economic constraints.

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