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Research Article

**ANALYSIS OF INTERVENTIONS FOR IMPROVED DIET AND
FLUID MANAGEMENT IN HAEMODIALYSIS PATIENTS**¹Dr Haleema Amjad, ¹Dr Fatima Arif Butt, ²Dr Muhammad Umer¹Women Medical Officer at DHQ Hospital, Sheikhpura, ²Medical Officer at DHQ Hospital, Mandi Bahauddin.

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Abstract:

Introduction: Haemodialysis (HD) is one of the replacement therapies for patients with end-stage renal disease (ESRD). Regular dialysis therapy ensures the removal of water from the metabolism of fluid or foods ingested by the patients between two dialysis sessions through ultrafiltration (UF).

Aims and objectives: The main objective of the study is to analyze the interventions for improved diet and fluid management in hemodialysis patients.

Material and methods: This descriptive study was conducted in DHQ Hospital, Sheikhpura during March 2018 to December 2018. The data was collected from 100 dialysis patients who visited the hospital regularly. Patients undergoing haemodialysis therapy for at least six months or more, aged between 18-65 years, who were literate and agreed to participate in the study were included. The data was collected through a questionnaire. This questionnaire include all the socio-demographic data of the patients.

Results: The data was collected from 100 dialysis patients. Their mean age was 50.2 years and 82% were male. In the intervention group, there was no significant difference in serum levels of albumin, total protein, potassium, phosphorus, and urea between the pre-test and post-test results ($p > 0.05$), whereas a significant difference was found in sodium levels ($p < 0.01$). In the control group, there was no significant difference in serum levels of albumin, sodium, potassium, phosphorus and urea between the pre-test and post-test results ($p > 0.05$), whereas a significant difference was found in total protein levels ($p < 0.05$).

Conclusion: It is concluded that knowledge level of haemodialysis patients regarding dietary and fluid restrictions was lower and their behaviors were non-compliant prior to education.

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INTRODUCTION:

Haemodialysis (HD) is one of the replacement therapies for patients with end-stage renal disease (ESRD). Regular dialysis therapy ensures the removal of water from the metabolism of fluid (interdialytic weight) or foods ingested by the patients between two dialysis sessions through ultrafiltration (UF) [1]. The dietary prescription also reduces symptoms and prevents premature morbidity/mortality. Another study reported that the patients with a good level of dietary knowledge had fewer problems and that such patients had better compliance and better well-being [2]. Previous studies have reported that methods such as patient education and self-monitoring effectively ensure the compliance of haemodialysis patients with dietary and fluid restrictions [3].

Earlier studies have indicated improved survival for patients on home hemodialysis (HHD) compared with institutional hemodialysis (IHD) and peritoneal dialysis (PD). For patients starting HHD at Lund University Hospital, we have previously reported an annual mortality rate of less than 5%, after more than 30 years of follow-up [4]. Earlier studies have reported short-term survival, five years or less, have not followed patients into the twenty-first century nor taken comorbidity into account. As the overall survival for dialysis patients has improved during the twenty-first century, and as patients starting HHD are usually younger and healthier than patients on IHD or PD, the survival advantage for HHD beyond patient selection is still unclear [5]. Patients eligible for HHD are most often also eligible for renal transplantation. There are, to our knowledge, no previous reports studying the effects of dialysis modality on subsequent renal graft survival [6].

Aims and objectives

The main objective of the study is to analyze the interventions for improved diet and fluid management in hemodialysis patients.

MATERIAL AND METHODS:

This descriptive study was conducted in DHQ Hospital, Sheikhpura during March 2018 to December 2018. The data was collected from 100 dialysis patients who visited the hospital regularly. Patients undergoing haemodialysis therapy for at least six months or more, aged between 18-65 years, who were literate and agreed to participate in the study were included. The data was collected through a questionnaire. This questionnaire include all the socio-demographic data of the patients. Patient's vital signs, weight before and after dialysis session and body mass index (BMI) were evaluated and written down on the form. Education content was designated by nutrition in haemodialysis, the importance of protein-phosphor and salt-restricted diet and fluid restriction and significant points to be taken into consideration in nutrition by the dialysis patients in renal diseases.

Statistical analysis

All the data were collected and analyzed using SPSS version 20.0. All the values were expressed in mean and standard deviation.

RESULTS:

The data was collected from 100 dialysis patients. Their mean age was 50.2 years and 82% were male. A Charlson Comorbidity Index was assigned retrospectively to each patient using hospital discharge diagnoses. Most patients had an index of 0 (63%). In the intervention group, there was no significant difference in serum levels of albumin, total protein, potassium, phosphorus, and urea between the pre-test and post-test results ($p>0.05$), whereas a significant difference was found in sodium levels ($p<0.01$). In the control group, there was no significant difference in serum levels of albumin, sodium, potassium, phosphorus and urea between the pre-test and post-test results ($p>0.05$), whereas a significant difference was found in total protein levels ($p<0.05$).

Table 01: Blood biochemistry of control and selected patients

| | | Pre-test Median | Post-test Median | Inter-Groups Differences Significance Wilcoxon test z and p | |
|---------------------|--------------------|--------------------|---------------------|-------------------------------------------------------------------|--------|
| Albumin | Intervention Group | 4.2 (0.46) | 4.1 (0.38) | -1.19 | 0.235 |
| | Control Group | 4.10 (0.34) | 4.1 (0.29) | -0.71 | 0.480 |
| Serum Total Protein | Intervention Group | 7 (0.6) | 6.6 (0.56) | -0.80 | 0.426 |
| | Control Group | 6.8 (1.1) | 6.6 (1.09) | -0.223 | <0.05 |
| Serum Na | Intervention Group | 140 (3.41) | 137 (2.54) | -3.45 | <0.001 |
| | Control Group | 140 (2.95) | 139 (2.63) | -0.91 | 0.11 |
| Serum K | Intervention Group | 5.28 (0.65) | 5.19 (0.56) | -0.42 | 0.673 |
| | Control Group | 5.22 (0.49) | 5.19 (0.44) | -1.6 | 0.110 |
| Serum P | Intervention Group | 5.4 (1.04) | 5.28 (1.27) | -1.12 | 0.262 |
| | Control Group | 5.3 (1.26) | 5.42 (1.19) | -1.64 | 0.101 |
| Pre-dialysis Weight | Intervention Group | 73.7 (13.7) | 72.7 (13.4) | -1.32 | <0.001 |
| | Control Group | 72.4 (12.5) | 73.2 (12.5) | -2.97 | <0.001 |

Na: Sodium

K: Potassium

P: Phosphorus.

DISCUSSION:

There was a high statistically significant improvement in the mean and standard deviation of percent knowledge score and in all adherence dimensions percent score post interventions as compared with baseline (pre interventions assessment) [6]. The patients' total knowledge and adherence scores were increased after interventions. These results were in agreement with Ryu et al (2014) who emphasized that incorporation of patient education strategies is beneficial for adherence outcomes. Concerning the effect of applying the educational interventions on percent reduction in IDWG, the results showed that more than one quarter of the studied patients reached the cutoff point ≥ 2.5 kg between two consecutive dialysis sessions [7].

Psychosocial interventions to improve motivation have shown promise in other chronic diseases such as diabetes and need to be further studied in the chronic kidney disease (CKD) population. A randomized controlled multicenter trial to assess improvement in CKD Stage 3 and 4 patients' self-management using a nurse-driven intervention incorporating motivational interviewing is in progress [8]. If successful, these techniques to improve patient motivation may also be useful in for dialysis patients.

Knowledge was the most commonly discussed facilitator of fluid restriction adherence. Specifically, patients discussed the importance of understanding basic physiology including the normal function of the kidneys and the role of dialysis, general nutrition, techniques to aid in fluid restriction, volume measurement, food label interpretation, and overall fluid intake goals. In dialysis patients, knowledge has been associated with improved adherence to dietary recommendations and permanent arteriovenous access use [9]. Despite this, few studies examine educational interventions to improve fluid restriction adherence. Even fewer studies assess patient fluid management knowledge, and often do not employ a validated instrument to measure this important factor. Development of a validated assessment tool of patient knowledge of fluid management in dialysis is needed to identify gaps in patient knowledge, tailor individual educational interventions, and to evaluate the impact of these interventions [10].

CONCLUSION:

It is concluded that knowledge level of haemodialysis patients regarding dietary and fluid restrictions was lower and their behaviors were non-compliant prior to education.

REFERENCES:

1. Lehane E, McCarthy G, Collender V, Deasy A. Medication-taking for coronary artery disease - patients' perspectives. *Eur J Cardiovasc Nurs.* 2008 Jun;7(2):133–139.
2. Condon C, McCarthy G. Lifestyle changes following acute myocardial infarction: patients perspectives. *Eur J Cardiovasc Nurs.* 2006 Mar;5(1):37–44
3. Kitzinger J. Qualitative research. Introducing focus groups. *BMJ.* 1995 Jul 29;311(7000):299–302.
4. Groome PA, Hutchinson TA, Tousignant P. Content of a decision analysis for treatment choice in end-stage renal disease: who should be consulted? *Med Decis Making.* 1994 Jan–Mar;14(1):91–97.
5. Stewart DSP, Rook D. *Focus Groups: Theory and Practice.* 2nd ed. Vol 20. Thousand Oaks, CA: Sage Publications; 2007.
6. Welch JL, Perkins SM, Evans JD, Bajpai S. Differences in perceptions by stage of fluid adherence. *J Ren Nutr.* 2003 Oct;13(4):275–281.
7. Greaves CJ, Middlebrooke A, O'Loughlin L, et al. Motivational interviewing for modifying diabetes risk: a randomised controlled trial. *Br J Gen Pract.* 2008 Aug;58(553):535–540.
8. Van Zuilen AD, Wetzels JF, Bots ML, Van Blankestijn PJ. MASTERPLAN: study of the role of nurse practitioners in a multifactorial intervention to reduce cardiovascular risk in chronic kidney disease patients. *J Nephrol.* 2008 May–Jun;21(3):261–267.
9. Thomas LK, Sargent RG, Michels PC, Richter DL, Valois RF, Moore CG. Identification of the factors associated with compliance to therapeutic diets in older adults with end stage renal disease. *J Ren Nutr.* 2001 Apr;11(2):80–89.
10. Mason J, Khunti K, Stone M, Farooqi A, Carr S. Educational interventions in kidney disease care: a systematic review of randomized trials. *Am J Kidney Dis.* 2008 Jun;51(6):933–951.