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Research Article

**FREQUENCY OF MALNUTRITION AMONG PATIENTS ON
REPEATED DIALYSIS DUE TO CHRONIC KIDNEY
DISEASE**¹ Maryam Tariq,² Sadaf Nazir, ³Manal Rehmani¹Ex house officer, Sir Ganga Ram Hospital Lahore, Email: maryamtariq.16oct@gmail.com²Ex house officer, Sir Ganga Ram Hospital Lahore, Email: sadafnazir53@yahoo.com³Ex house officer Bahawal Victoria Hospital Bahawalpur,

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Abstract:

Objective: To determine frequency of patients with malnutrition on repeated dialysis due to chronic kidney disease.

Design and duration: This is a cross sectional study, completed in one year of duration.

Setting: This study was conducted in dialysis unit of Sir Ganga Ram Hospital Lahore.

Patients and methods: Patients coming to dialysis unit for repeated dialysis due to chronic kidney disease were selected for study using randomized sampling technique. Patients having any other co-morbidity other than CKD or admitted in hospital due to severe illness were excluded from the study. Those patients were studied who were on dialysis for more than a year. P-value less than 0.05 was considered significant. Confidence interval was 95% with 5% margin of error. SPSS version 20 was used to analyze the data. Results were calculated in the form of percentages and frequency and presented via tables and graphs.

Results: This study was conducted on 170 cases with chronic kidney disease. Mean age of patients was 49±5.8 years. There were 56.4% male and 43.5% female cases in study group. Mean duration of disease was 3.8±2.3 years. Mild malnutrition was present in 28.2% cases, moderate in 54.1% and severe malnutrition in 17.6% patients.

Conclusion: Majority of patients on repeated hemodialysis due to CKD have mild to moderate malnutrition which may become severe with the passage of time.

Key words: Malnutrition, Chronic kidney disease, Hemodialysis

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INTRODUCTION:

Malnutrition associated with repeated hemodialysis due to CKD is a common problem among patients in Asian countries. Burden of chronic disease leads to decreased BMI and malnutrition develop either due to decreased oral intake or decreased absorption from intestine. CKD either compensated or decompensated is associated with loss of body weight and decreased serum level of albumin, prealbumin and transferrin. Many studies have shown that 75% patients on hemodialysis and 45% patients on peritoneal dialysis develop malnutrition of any grade. Other factors associated with malnutrition are age, degree of renal failure, diabetes or diabetic nephropathy, hypercalcemia, hyperuricemia, hypertension and chronic heart failure. Factors associated with malnutrition in CKD include repeated infections, anorexia, osteodystrophy, microcytic anemia, megaloblastic anemia, neurological and cardiovascular problems in patients with CKD. Prevalence of malnutrition in CKD patients has been reported 65% in India. It is an important predictor of morbidity and mortality. Abnormal protein metabolism, protein urea or loss of albumin are main causes of malnutrition in CKD patients.

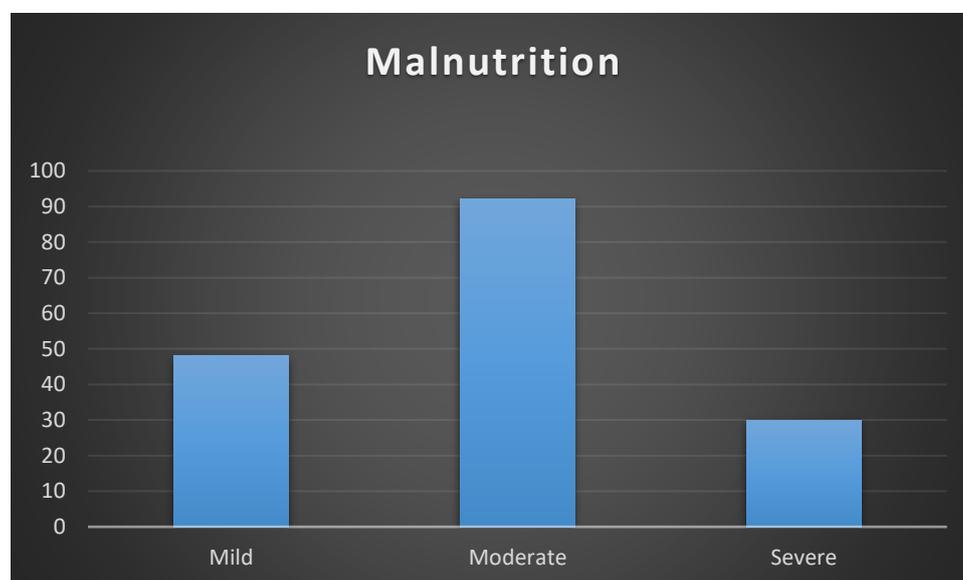
PATIENTS AND METHODS:

This is a cross sectional study conducted in nephrology and dialysis unit of Sir Ganga Ram Hospital Lahore, a tertiary care hospital. Study was started in June 2019 and completed in May 2020 after 12 months duration. Patients coming to dialysis unit for repeated dialysis due to chronic kidney disease were selected for study using randomized sampling technique. Patients having any other comorbidity other than CKD or admitted in hospital

due to severe illness were excluded from the study. Those patients were studied who were on dialysis for more than a year. P-value less than 0.05 was considered significant. Confidence interval was 95% with 5% margin of error. SPSS version 20 was used to analyze the data. Results were calculated in the form of percentages and frequency and presented via tables and graphs. Informed consent was taken from all cases in study group. Permission was taken from ethical review board of study hospital for conducting study. Privacy of all data was made sure. Sample size was calculated using WHO sample size calculator. Chi square test was applied. BMI less than 20 Kg/m² was labeled as malnourished. Skin fold thickness less than 6 mm in male and less than 8mm in female was considered malnourishment. Using SGA grades patients with score 1-10 are well nourished, score 11-25 as moderate malnourished and 26-35 were classified as having severe malnourishment.

RESULTS:

This study was conducted on 170 cases with chronic kidney disease. Mean age of patients was 49±5.8 years. There were 96(56.4%) male and 74(43.5%) female cases in study group. Mean duration of disease was 3.8±2.3 years. Mild malnutrition was present in 48(28.2%) cases, moderate in 92(54.1%) and severe malnutrition in 30(17.6%) patients. Patients with mild malnutrition were having BMI 17-18.4 kg/m², those with moderate type were having BMI 16-16.9 kg/m² and those with severe malnutrition were having BMI <16kg/m². There were 21(12.3%) cases between 20-30 years of age, 36(21.2%) between 31-40 years, 88(51.7%) between 41-50 years, 10(5.9%) between 51-60 years and 15(8.8%) were above 60 years of age. Mean duration of disease was 4.6±1.4 years.



(Figure-1) Severity of malnutrition among patients in study group (n=170)

(Table-1) Age distribution of patients in study group.

Age (years)	N	%
20-30	21	12.3
31-40	36	21.2
41-50	88	51.7
51-60	10	5.9
>60	15	8.8

DISCUSSION:

This study has been conducted to determine frequency and severity of malnutrition among patients with chronic kidney disease and on repeated dialysis. In our study mean age of patients was 49 ± 5.8 years. This is similar to the study conducted in Morocco by Moncef et al in which mean age of patients was 52 ± 14 years. Sirinavasan et al from USA reported mean age 71 ± 10.7 years in similar study. Malnutrition associated with repeated hemodialysis due to CKD is a common problem among patients in Asian countries. Burden of chronic disease leads to decreased BMI and malnutrition develop either due to decreased oral intake or decreased absorption from intestine. CKD either compensated or decompensated is associated with loss of body weight and decreased serum level of albumin, prealbumin and transferrin. Many studies have shown that 75% patients on hemodialysis and 45% patients on peritoneal dialysis develop malnutrition of any grade. Other factors associated with malnutrition are age, degree of renal failure, diabetes or diabetic nephropathy, hypercalcemia, hyperuricemia, hypertension and chronic heart failure. This is a cross sectional study conducted in nephrology and dialysis unit of Sir Ganga Ram Hospital Lahore, a tertiary care hospital. Study was started in June 2019 and completed in May 2020 after 12 months duration. Patients coming to dialysis unit for repeated dialysis due to chronic kidney disease were selected for study using randomized sampling technique. Patients having any other co-morbidity other than CKD or admitted in hospital due to severe illness were excluded from the study. Those patients were studied who were on dialysis for more than a year. P-value less than 0.05 was considered significant. Confidence interval was 95% with 5% margin of error. SPSS version 20 was used to analyze the data. Factors associated with malnutrition in CKD include repeated infections, anorexia, osteodystrophy, microcytic anemia, megaloblastic anemia, neurological and cardiovascular problems in patients with CKD. Prevalence of malnutrition in CKD patients has been reported 65% in India. It is an important predictor of morbidity and mortality. Abnormal protein metabolism, protein urea or loss of albumin are main causes of malnutrition in CKD patients. In our study

we made BMI our tool to determine malnutrition. Its mean value was 34.15 ± 1.7 kg/m².

CONCLUSION:

Frequency of malnutrition among patients under dialysis is high. Majority of patients on repeated hemodialysis due to CKD have mild to moderate malnutrition which may become severe with the passage of time. Keeping BMI high in such patients can lead to better prognosis.

REFERENCES:

1. Danielsson A, Qureshi AR, Divino-Filho JC, Lindholm B, Gutierrez A, Alvestrand A et al. "A cross-sectional study on elements affecting malnutrition in hemodialysis patients." {Kidney}Int 1998; 53: 773-82.
2. Wouters EF, Buurman WA, Simons JP, Scols AM. "Relationship of Weight loss and low body cell mass in males with lung cancer" with "acute-stage feedback, intrinsic inflammation, resting energy Expenditure, catabolic and anabolic hormones. ClinSci since 1999; 97:215-23.
3. Munro R, Capell H. Prevalence of low body mass in rheumatoid Arthritis: associations with the acute stage feedback. Ann RheumDis1997; 56:326-9.
4. Stenvinkel P, Heimbu" rger O, Paultre F et al. Strong associations between malnutrition, inflammation and atherosclerosis in chronic renal failure. KidneyInt 1999; 55: 1899- 1911.
5. Prakash J, Raja R, Mishra RN, Vohra R, Sharma N, Wani IA, et al. High prevalence of malnutrition and inflammation in undialyzed patients with chronic renal failure in developing countries: a single center experience from eastern India. Ren Fail. 2007; 29:811-6.
6. Khan MS, Chandanpreet S, Kewal K, Sanjay D, Ram KJ, Atul S. Malnutrition, anthropometric and biochemical abnormalities in patients with diabetic nephropathy. J RenNutr, 2009; 19:275-80.
7. Agaba EI, Agaba PA. Prevalence of malnutrition in Nigerians with chronic renal failure. IntUrolNephrol.2004; 36:89-93.
8. Tayyem RF, Mrayyan MT, Assessing the prevalence of malnutrition in chronic kidney

- disease patients in Jordan. *J RenNutr*, 2008; 18:202-9.
9. 1Shan NR, Dumler F. Hypoalbuminemia a marker of cardiovascular disease in patients with chronic kidney disease stages II-IV. *Int J Med Sci*. 2008;5:366-70.
 10. Siddiqui UA, Halim A, Hussain T. Nutritional profile and inflammatory status of stable chronic hemodialysis patients at nephrology department, Military Hospital Rawalpindi. *J Ayub Med Coll Abbottabad*. 2007; 19:29-31.
 11. Moon KH, Song IS, Yang WS, Shin YT, Kim SB, Song JK, et al. Hypoalbuminemia as a risk factor for progressive left-ventricular hypertrophy in hemodialysis patients. *Am J Nephrol*. 2000; 20:396-401.
 12. Leavey SF, McCullough K, Hecking E, Goodkin D, Port FK, Young EW. Body mass index and mortality in 'healthier' as compared with sicker haemodialysis patients: results from the dialysis outcomes and practice patterns study (DOPPS). *Nephrol Dial Transplant*. 2001; 16:2386-94.
 13. FalakGurrebun, George H. Hartely. Nutritional screening in pts on hemodialysis: is SGA an appropriate tool? *Journal of renal nutrition* vol: 17 no.2 (March). 2007.114-117.
 14. Zehra, Kaneez. Frequency of malnutrition inflammation complex syndrome in patients with end stage renal failure on maintenance hemodialysis at Jinnah Postgraduate Medical Centre, Karachi. (Dissertation Nephrology), Karachi: College of Physician & Surgeon Pakistan, 2009.
 15. Stenvinkel P, Heimbürger O, Lindholm B, Kaysen GA, Berg-strom J: Are there two types of malnutrition in chronic renal failure? Evidence for relationships between malnutrition, inflammation and atherosclerosis (MIA syndrome). *Nephrol Dial Transplant*. 2000;15:953-60.
 16. Moncef E M'Barki K, Rhita B, Zouhir O. Factors Predicting Malnutrition in Hemodialysis Patients. *Saudi J Kidney Dis Transpl* 2011;22(4):695-704.
 17. Srinivasan B, Pappas L, Ramkumar N, Matthew H. Malnutrition and atherosclerosis in dialysis patients. *J Am SocNephrol*. 2004;15:733-42.18.
 18. Detsky AS, McLaughlin JR, Baker JP, Johnston N, Whittaker S, Mendelson RA, et al. What is subjective global assessment of nutritional status? 1987. *Classical article. Nutr Hosp*. 2008 Jul-Aug;23(4):400-7.
 19. Valderrabaono F, Horl W, Macdougall I, Rossert J, Rutkowski B, Wauters J. PRE-dialysis survey on anaemia management. *Nephrol Dial Transplant*. 2003;18:89-100.
 20. Weaver D, Kimball T, Knilans T, Mays W Knetch S, Gerdis Y, Glascock B et al. Decreased Maximal Aerobic Capacity in Pediatric Chronic Kidney Disease. *J Am SocNephrol*.2008;19:624-30