



ASSESSMENT OF NUTRITIONAL STATUS IN CHRONIC KIDNEY DISEASE PATIENTS: A CROSS SECTIONAL STUDY

Nephrology

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ABSTRACT

Background: Chronic kidney disease is associated with many complications. Malnutrition is one of the important complications. It is associated with increased morbidity and mortality. Malnutrition is widely prevalent in kidney disease patients. We designed this study to assess nutritional status of patients on hemodialysis. **Materials and Methods:** This is observational, cross sectional study done at tertiary care centre. It included patients on hemodialysis at single centre. The aim of the study is to assess nutritional status with anthropometric and biochemical parameters. **Results:** Thirty two patients completed the study. Mean age of the patients was 41.6 ± 19.26 years. Out of total thirty two patients males were 19 and females were 13. Mean serum albumin level was 2.9 ± 0.7 g/dl. **Conclusion:** Malnutrition is widely prevalent in hemodialysis patients. There are many factors responsible for malnutrition.

KEYWORDS

Chronic kidney disease, Malnutrition, Hemodialysis, Complications, Mortality

Introduction:

Hemodialysis (HD) is one of the treatment form of renal replacement therapy. Patients on HD are at risk of development of many complications¹. Malnutrition is one of the most complication. There are many factors responsible for development of malnutrition². Decreased appetite, nausea, vomiting, anemia, recurrent illnesses and inflammation are responsible for undernutrition in these patients. Available literature suggests that there is worsening of nutrition with reduction in renal function³. Available methods for assessment of nutrition include anthropometric measurements, biochemical assessment and dietary recall. As malnutrition is responsible for increased morbidity and mortality⁴, it is necessary to assess nutrition in CKD patients specially on dialysis. We designed this study to assess one time nutritional status in patients on hemodialysis.

Material and Methods: This is observational, cross sectional study done at tertiary care centre. Permission was taken from institutional review board and ethics committee prior to patient enrollment. It included patients on hemodialysis.

Inclusion criteria:

1. Patient with CKD on HD
2. Age more than 18 years

Exclusion criteria:

1. Hospitalization in previous three months.
2. Intercurrent illness, sepsis

Objectives of the study: To assess nutritional status of the patients on HD.

After enrollment, detailed history was taken. Each patient underwent relevant clinical examination. Nutrition was assessed by anthropometric parameters and biochemical parameters. Anthropometric parameters include height, triceps skin fold thickness, mid arm circumference and mid arm muscle circumference.

Statistical analysis:

- Data was entered on EXCEL worksheets. Quantitative variables were expressed as mean, and standard deviation. Qualitative variables were expressed as percentage and frequencies.
- SPSS Statistical software was used for all statistical work.

Results:

Thirty two patients on HD completed the study. Mean age of patients was 41.6 ± 19.26 years. Of the total patients 19 were males and 13 were females. Important causes of CKD include diabetes mellitus and hypertension. Non tunneled catheter was the commonest access for hemodialysis (22 patients). 6 patients had tunneled HD catheter and only 4 patients had AV fistula. Table 1 summarizes anthropometric and biochemical parameters in study population.

Table 1: Anthropometric and biochemical parameters

Parameter	Mean $\pm$ SD
Sr. Albumin	2.9 ± 0.7 g/dl
Triceps skinfold thickness	10.45 ± 2.85 mm
Mid-arm circumference	267.14 ± 35.44 mm
Mid-arm muscle circumference	241 ± 29.51 mm

Discussion:

Patients with chronic kidney disease are prone for malnutrition. Various factors are responsible for malnutrition in these patients. There is increased morbidity and mortality in malnourished patients on hemodialysis. Various assessment tools are available for nutritional status determination⁵. Anthropometric measurements, biochemical parameters and subjective global assessment are some of the commonly used tools⁶.

In our study we found that serum albumin was low in these patients. Similar observations have been made in previous studies^{7,8}. Also, all anthropometric parameters were subnormal in study population. This is in consistent with the available literature^{9,10}.

We conclude that malnutrition is widely prevalent in hemodialysis patients. These patients require frequent assessment for the early diagnosis and treatment.

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