Research Article

Nutritional status and management of diary persons below 70 years at Ha Dong general hospital in 2022

Abstract

Aims: To evaluate the nutritional status of patients with artificial dialysis, cyclic hemodialysis.

Methods: A cross-sectional study of 110 patients under 70 years of age. Results : As the result of the body mass index (BMI) assessment, it was found that 31.8% of the patients experienced a lack of field energy and 4.5% of the patients had an overweight BMI according to who classification. The proportion of patients with low serum albumin levels (<35 g/ L) was 24.5%. By the overall assessment method (SGA), 38.2% of patients had a slight nutritional risk and 1.8% were severely malnourished.

Conclusion: Artificial kidney dialysis patients are at risk for malnutrition during hemodialysis. Therefore, it is necessary to observe, monitor, screen and evaluate the nutritional status of patients on artificial dialysis – periodic hemodialysis.

Keywords: nutritional status, artificial dialysis, chronic kidney disease

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Ask the problem

Patients on hemodialysis often have poor nutritional status, weight loss due to anorexia, diet , plus increased catabolism, so it is easy to lead to protein-energy depletion syndrome, increased risk of complications, reduce the patient's survival time. According to a study by Owen et al.[1] also showed that there is a significant association between nutritional indicators and the risk of death.[1] In 2007, a study by the Department of Artificial Kidneys of Royal Women's Hospital showed that the rate of malnutrition in dialysis patients accounted for 48%.[2] Nutrition not only enhances the functioning of the kidneys, but also helps prolong the time on dialysis. In particular, a reasonable diet will help minimize the complications that appear when the patient has chronic kidney failure.[3–5] Faced with these situations, the health sector and people need to pay more attention to the quality of medical examination and treatment services as well as nutritional issues for hemodialysis patients. Department of Internal Medicine - Urology, Ha Dong General Hospital with the average flow of hemodialysis patients 150 people/month and the number of dialysis patients managed is 300 people. Therefore, this study was conducted with the goal of assessing the nutritional status of hemodialysis patients, thereby making recommendations to improve the nutritional care status of hemodialysis patients.

Research Methods

Design and research object

Cross-sectional study design , performed on hemodialysis patients managed at the Department of Internal Medicine -Urology, Ha Dong General Hospital from December 2021 to June 2022 .

Standard select: Patients with chronic renal failure were on dialysis treatment by cyclic hemodialysis and agreed to participate in the study.

Exclusion criteria when the patient has one of the following criteria:

- Having serious acute diseases at the time of study (coma, emergency surgery, emergency procedure),

- None ability to answer interviews and not be able to answer questions on their own such as (disability, dumb, deaf, mental, ...)

Sample size and sample selection

The sample size was calculated according to the formula:

$$n = \frac{Z^2 p(1-p)}{e^2}$$

In there: n : Sample size (number of hemodialysis patients in the Department of Nephrology-Urology)

The sample size calculated was 96 patients on hemodialysis. Add 10% to ensure that the risk of error is eliminated during sampling, collection, sample size is 106 patients. Actually collected 110 patients.

Systematic random sampling method

Step 1: Determine the distance k: estimate the number of patients coming to dialysis at the Department of Nephrology - Urology at Ha Dong General Hospital in 1 month about 300 patients, as expected the group selected 106 patients should k=300/106, the approximate value of k=3.

Data collection and data analysis

After selecting the research subjects, the data collection process was conducted with a self-completed (anonymous) questionnaire. The process of data collection by self-filling form. Patient laboratory data were collected from medical records.

The research variables include:

- General information about the research subjects (age, gender , occupation, number of years of treatment, ...);

- Nutritional status of the patient (anthropometric index, SGA, height, weight, ...).

Z=1.96: Z-distribution panel value with 95% confidence interval.

P: Percentage of chronic energy deficiency estimated by Nguyen Thi Thu Ha's study at Thanh Nhan Hospital.[6]

e: allowable absolute error. Choose e = 0.08 with an error of ±0.08 (8%).

Step 2: Make a list of patients undergoing hemodialysis at the Department of Internal Medicine - Urology, Ha Dong General Hospital. Number each patient in sequence.

Step 3: Identify the first patient as the interval between patients from 1 to k=3 -> Randomly select patient 2 as the first patient -> i=2.

Step 4: Select the first patient as patient number 2, the next patient will be selected in the order i + 1k; i + 2k; i + 3k; ... continue to select patients until the sample size is 110 people.

Nutritional status assessment Classification of nutritional status according to BMI according to World Health Organization (WHO) (Table 1).[6]

Table 1 Nutritional status assessment Classification of nutritional status according to BMI

Classify	BMI (kg/m²)
Chronic lack of energy (CED)	<18.5
Normal	18.5-24.9
Overweight	25 _
Obesity money	25-29.9
Grade 1 obesity	30-34.9
Grade 2 obesity	35-39.9

Nutritional classification according to serum albumin:[7] described by Baker, University of Toronto, Canada in 1982 (Table 2).

Table 2 Nutritional classification according to serum albumin

Classify	Albumin (g/L)
Normal	35-48
Light SDD	28-35
Medium SDD	21-27
Heavy SDD	<21

Each component has 3 severity levels for scoring A (No risk of malnutrition), B (Risk of mild malnutrition), and C (Risk of severe malnutrition). Patients with an mSGA score of A are considered to be malnourished, B are considered to be mildly malnourished, and C are considered to be severely malnourished.[8,9]

Quantitative research data were cleaned and entered using using Epidata 3.1 software, analyzed using SPSS 22. The qualitative variable values are presented in the form of frequency and ratio.

Ethics in research

The study was carried out according to Decision No. 310/QD-DHYTCC of the Biomedical Research Ethics Committee of the University of Public Health.

Subjects participating in the study are completely voluntary people, without any influence from outside as well as the research team.

The subjects participating in the study were clearly explained about the purpose, meaning, and information to be collected of the survey and had the right to choose whether to participate in the study or not. Subjects have the right to refuse to participate in the study at any stage of the research process. All information provided by the subject is kept strictly confidential, the subject's identity is kept confidential, the information is used for research purposes, not for any other purpose.

The results of Table 3 show that out of 110, 60% of the subjects were male. Mainly income <5 million accounted for 86.4%. The age group from 40-60 accounts for the highest (60%). Patients diagnosed with the disease from 5-10 years accounted for the most (41.8%). The duration of treatment is mainly >3 years, accounting for 69.1%.

Table 3 General information of research subjects (n=110)

Characteristic	n (%)	Characteristic	n (%)
Sex		**Habitat**	
Male	66 (60)	Suburban Hanoi	44 (40)
Female	44 (40)	Hanoi city	66 (60)
Age group		**Average income**	
21-40	35 (31 , 8)	<5 million	95 -86.4
40-60	66 (60)	5-10 million	8 (7.3)
61-69	9 (8, 2)	>10 million	4 (3,6)
Time of diagnosis		**Marital status**	
Less than 5 years	27 (24,5)	Unmarried	24 (21,8)
From 5-10 years	46(41,8)	Have family	79 -71.8
Over 10 years	37(33,6)	Divorced, widowed	7 (6.3)
Treatment time			
Less than 1 year	10 (9.1) 24		
From 1-3 years	(21,8) 76		
>3 years	-69.1		

The results of Table 4 show that 31.8% of patients suffer from chronic lack of energy, of which 27.3% in men and 38.6% in women; 63.6% of patients had BMI within normal limits; 4.5% of patients have BMI in the overweight category according to WHO classification. While the prevalence of overweight-obesity (BMI≥25) in men is also 7.6% higher than that of women without overweight-obese patients.

Table 4 Nutritional status of hemodialysis patients according to body mass index (BMI)

Classification by BMI	Male	Female	Total
Lack of stage energy	18 (27.3)	17 (38.6)	35 (31.8)
Normal	43 (65.2)	27 (61.4)	70 (63.6)
Overweight - Obesity	5 (7.6)	0 (0)	5 (4,5)

The results of Table 5 show that out of 110 patients with serum Albumin index, 24.5% of patients have low serum albumin concentration (<35 g/l), the rest 75.5% Patients with normal serum albumin (≥35g/l).

Table 5 Nutritional status of hemodialysis patients classified by serum Albumin

Albumin Level (g/L)	Male	Female	Total
Album <35	12 (18,2)	15 (34.1)	27 (24,5)
Album 35	54 (81.8)	29(65,9)	83(75.5)

The results of Table 6 show that the nutritional status of hemodialysis patients is assessed according to SGA. In which, 60.0% of patients did not have a slight nutritional risk with 42 male patients (more than 24 female patients). At moderate nutritional risk, male patients also accounted for more than female patients with 23 and 19, respectively. Finally, severe nutritional risk accounted for 1.8% of total and weight. equal numbers for both sexes.

Table 6 Nutritional status of hemodialysis patients according to SGA

Sort by SGA	Male	Female	Total
Mild risk	42 (63.6)	24 (54.5)	66 (60.0)
Moderate risk	23 (34,8)	19 (43.2)	42 (38.2)
Serious risk	1 (1.5)	1 (2,3)	2 (1.8)

Discussion

The study included 110 patients, in which male patients accounted for more than 60% and female patients accounted for less with 40%.

Compared with the study of author Tran Van Nhuong in 2012,[4] the proportion of men accounted for 54% and women accounted for 46%.[3] According to the survey, the number of patients in the age group of 40-60 years old accounted for the highest with 60% and under 40 years old accounted for 31.8%. In a study by author Nguyen Thi Van Anh in 2010 at Bach Mai hospital, 19% were elderly (> 60 years old),[4] while in this study the proportion of elderly people (> 60 years old) the lowest rate is 8.2%. The majority of study subjects are people living in the inner city of Hanoi 66 people (60%) higher than those living in the suburbs of Hanoi (40%) 44 people.

Research shows that 31.8% of patients have a low BMI < 18.5; This rate is lower than that of author Tran Van Nhuong in 2019 at 37.2%, and also lower with research by author Nguyen Trong Hung at Bach Mai hospital (39.3%) (5). In this study, 24.5% of patients had serum albumin levels <35g/l, 75.5% had serum albumin concentration ≥35g/l. This result is 28% lower than that of Tran Van Nhuong (2012) at Viet Duc Friendship Hospital. The process of nutritional assessment for hemodialysis patients by the SGA method, the results showed that out of a total of 110 study subjects, 66 subjects (corresponding to 60%) were assessed as having no nutritional risk. Nutrition, 42 subjects (corresponding to 38.2%) were assessed as having mild nutritional risk and 2 subjects (1.8% respectively) were assessed at risk of severe malnutrition. This result is lower than the study of Tran Van Nhuong in 2021 with the rate of mild malnourished subjects at 70.7% and the rate of severe malnutrition at 10% but higher in the proportion of subjects without The risk of malnutrition in the above study was 19.3%.

Conclusion

Severe malnutrition still accounts for a high proportion of patients on hemodialysis and dialysis. When assessing nutritional status in hemodialysis patients, it is recommended to combine additional evaluation methods such as SGA, Albumin to be able to accurately assess the patient's nutritional status.

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