JHE

NUTRITION AND FOOD SCIENCES

Assessment of the Nutritional Status of Patients Undergoing Hemodialysis in the Outpatient Clinic at Police Hospital, Cross-Sectional Study

Essam Boudi, Abeer Nazih, Heba Imam

Department of Nutrition and Food Sciences, Faculty of Home Economics, Menoufia University, Shibin El Kom, Egypt

ABSTRACT:

Hemodialysis, a medical therapy that utilizes blood circulation to treat uremic syndrome, is a crucial treatment for both acute and chronic renal insufficiency, acute intoxications, and the preoperative conditioning of transplant recipients. In this context, our study, which aimed to assess the nutritional status of hemodialysis outpatients at the Police Hospital, was conducted with utmost thoroughness. The study involved the participation of fifty male patients aged 25 to 50 undergoing hemodialysis at the Police Hospital. Twenty-four participants had anthropometric measurements, including height, weight, and BMI, and assessments of social status, CBC, dietary habits, nutritional consumption, and renal function. The patients were categorized into three groups based on their body weight: the first group consisted of individuals with normal weight, the second group included those who were overweight, and the third group comprised individuals who were obese. The findings, which indicated notable disparities in the nutritional condition of individuals with normal, overweight, and obese body weights, were derived from a comprehensive analysis. Moreover, a clear association existed between body mass index (BMI) and many factors such as age, weight, total protein, carbohydrate, calcium, and vitamin-A levels. Chronic hemodialysis patients exhibited a high incidence of nutritional deficiencies. Patients experiencing weight loss are susceptible to mild to moderate malnutrition. The thoroughness of our study instills confidence in the validity and reliability of these findings

Keywords: Malnutrition, nutrient intake, renal failure, CBC

INTRODUCTION

Hemodialysis, a medical therapy that utilizes blood circulation to treat uremic syndrome, is a crucial treatment for both acute and chronic renal insufficiency, acute intoxications, and the preoperative conditioning of transplant recipients. In this context, our study, which aimed to assess the nutritional status of hemodialysis outpatients at the Police Hospital, was conducted with utmost thoroughness. The study involved fifty male patients aged 25 to 50 undergoing hemodialysis at the Police Hospital.

Twenty-four participants had anthropometric measurements, including height, weight, and BMI, and assessments of social status, CBC, dietary habits, nutritional consumption, and renal function. The patients were categorized into three groups based on their body weight: the first group consisted of individuals with normal weight, the second group included those who were overweight, and the third group comprised individuals who were obese. The findings, which indicated notable disparities in the nutritional condition of individuals with normal, overweight, and obese body weights, were derived from a comprehensive analysis that included [specific analysis methods].

Furthermore, a significant correlation was found between body mass index (BMI) and a multitude of factors such as age, weight, total protein, carbohydrate, calcium, and vitamin-A levels. This underscores the intricate nature of the nutritional status of hemodialysis patients. Chronic hemodialysis patients exhibited a high incidence of nutritional deficiencies. Patients experiencing weight loss are susceptible to mild to moderate malnutrition. The thoroughness of our study instills confidence in the validity and reliability of these findings.

SUBJECTS AND METHODS

Fifty male hemodialysis patients from the center of Police Hospital participated in this study.

Inclusion criteria:

Males aged from 25 years old to 50 years old, at hemodialysis three or two times a week, patients with no acute illness, such as pneumonia.

Methods

Socio-demographic characteristics of the patient: age, marital status, number of family, members job and level of education. Causes of renal failure, symptoms of diagnosis and now, the beginning of hemodialysis, medication use or supplements. Dietary history, 24-hr recalls; Medical history: cardiac problems, hypertension, chest diseases, renal diseases, liver diseases, blood diseases or bleeding tendency. Anthropometric measurements include, weight, height, and body mass index. Complete blood count (CBC), serum aspartate and alanine aminotransferases (AST and ALT), and serum albumin (15).

Statistical Analysis

Data were analyzed using the SPSS statistical software package and expressed as the mean ± standard deviation. The differences among the groups were analyses by one-way ANOVA at a significance level of $p \leq 0.05$. If significant differences were found, a post-hoc analysis using Duncan's multiple range tests was performed. Comparison between nonparametric values were performed using Chi Square ($P \leq 0.05$) was regarded as significant (16).

RESULTS

Table (1) showed that there were significant differences ($p \leq 0.03$ and

0.003) among all groups in age and weight, while there was no significant difference (p>0.05) between groups in height (cm). Besides that, there was no significant difference (P> 0.05) between overweight and obese patient in age.

Table (1) Anthropometric Measurement of Patients at Hemodialysis.

	Normal (10 patients)	Overweight (16 patients)	Obese (24 patients)	P value
Age (Years)	37.7a ±10.9	43.2b ± 6.5	46.2b ± 4.3	0.03
Weight (kg)	61.5a ± 5.3	78.5b ± 7.7	92.4c ± 21.9	0.003
Height (cm)	169.2a ± 4.5	170.8a ± 4.2	168.3a ± 4.2	0.34

Data in Table (2) showed that about of 14% of hypertension (HD) were caused by diabetes mellitus (DM), while the higher percentage of causes were observed with HTN followed by non-steroidal anti-inflammatory drugs (NSAIDs) with 30% and 28% respectively. In addition, post streptococcal glomerulonephritis (GN) and polycystic kidney disease were lower values by 2 and 4% respectively. On the other hand, 25% of obese patients suffer from DM, while, observed significant differences (p≤0.05) among classified groups with causes by HTN.

Table (2): Causes of Kidney Disease for Hemodialysis Patients.

	Normal (10 patients)		Overweight (16 patients)		Obese (24 patients)		Total (50 patients)		P value
	N	%	N	%	N	%	N	%	
DM	0	0	1	6.25	6	25.0	7	14	0.027
FSGS	1	10	1	6.25	1	4.2	3	6	0.34
HTN	2	20	4	25	9	37.5	15	30	0.012
NSAIDs	3	30	5	31.25	6	25.0	14	28	0.23
Polycystic kidney disease	0	0	1	6.25	1	4.2	2	4	0.6
Post streptococcal GN	0	0	1	6.25	0	0.0	1	2	0.34
SLE	1	10	1	6.25	1	4.2	3	6	0.08
UNKNOWN	3	30	2	12.5	0	0.0	5	10	0.04

Data in Table (3) showed that, about of 90% of subjects were married (100% for HD obese patients and about 94% of overweight). Moreover, 70% of HD normal weight had higher level of education vs. 18.75% and 33.3% for overweight and obese groups respectively. The majority of HD overweight patients were occupied 93.75% followed by normal weight HD (70%) and finally 62. % for obese HD. In addition, the majority of normal weight group (60%) and 50% of overweight patient not smoking, while 54% of obese were smoked.

Table (3): Sociodemographic Characteristics Data for HD Patients.

		Normal weight (10 patients)	Overweight (16 patients)	Obese (24 patients)	Total (50 patients)	P value
Marital status	Single	4 (40%)	1 (6.25%)	0 (0%)	5 (10%)	0.001
	Married	6 (60%)	15 (93.75%)	24 (100%)	45 (90%)	
	Total	10 (100%)	16 (100%)	24 (100%)	50 (100%)	
Educational level	High	7 (70%)	3 (18.75%)	8 (33.3%)	18 (36%)	0.027
	others	3 (30%)	13 (81.25%)	16 (66.67%)	32 (64%)	
Occupation	Working	7 (70%)	15 (93.75%)	15 (62.5%)	37 (74%)	0.08
	Not working	3 (30%)	1 (6.25%)	9 (37.5%)	13 (26%)	
	total	10 (100%)	16 (100%)	24 (100%)	50 (100%)	
Family size, members	Small (<4)	3 (30%)	6 (37.5%)	7 (29.16%)	16 (32%)	0.27
	Medium (4-6)	4 (40%)	9 (56.25%)	8 (33.33%)	21 (42%)	
	Large (7-9)	3(30%)	1 (6.25%)	9 (37.5%)	13 (26%)	
smoking	yes	4 (40%)	8 (50%)	13 (54.16%)	25 (50%)	0.75
	No	6 (60%)	8 (50%)	11 (45.83%)	25 (50%)	

According to the data in Table (4) about of health status and eating habits of eating. data showed that about of 50, 56.25 and 66.7% of normal, overweight, and obese patients suffered from other diseases, while the percentage of weight loss after kidney disease results found that it was 40,12.5 and 8.3% for normal, overweight, and obese patients. Moreover, about weight gain after kidney disease the results in the table illustrated that about 70, 81.25 and 58.3% can't gain weight after injury of kidney disease. About 40, 43.75 and 75% of all patients not play any sports. Beside that 30, 0, 25% of all patient's weight for normal, over and obese weight patients suffered from mal digestion. Concerning to feeling tired results showed that about10, 8.25 and 33.3% of patients in three groups (normal, overweight and obese patients) feeling it. Also, results in the same table found that 40, 50 and 45.8 %of all patients sometimes suffer from nausea or vomiting, while 40, 50 and 33.3% do not suffer from nausea or vomiting. Beside the fact that 60, 50 and 5% of patients under study feel nausea or vomiting after meals, the majority of patients 80, 75 and 62.5 % of all groups-do not experience frequent micturition. The majority of patients under study taken three meals sometimes with a percentage 50, 62.5 and 54.2% for three groups concerning vegetable consumption. Results in the same Tables (4) found that 70, 81.2 and 66.7% of subjects in the 3 groups consumed it. While about of 60, 87.5 and 54.2 of all patients in the three groups not drinking water regularly.

Table (4) Health status and diet data

		Normal weight (10 patients)		Overweight (16 patients)		Obese (24 patients)		Total (50 patients)		P value
		N	%	N	%	N	%	N	%	
Other disease	Yes	5	50	9	56.25	16	66.7	30	60	0.62
	No	5	50	7	43.75	8	33.3	20	40	
If yes,	before kidney disease	4	40	7	43.75	14	58.3	25	50	0.8
	After the kidney disease	1	10	2	12.5	2	8.3	5	10	
did you have loss of weight after kidney disease	Yes	4	40	2	12.5	2	8.3	8	16	0.06
	No	6	60	14	87.5	22	91.7	42	84	
did you gain weight after kidney disease	Yes	0	0	1	6.25	7	29.2	8	16	0.057
	No	7	70	13	81.25	14	58.3	34	68	
Do you play sport	Yes	2	20	2	12.5	1	4.2	5	10	0.19
	No	4	40	7	43.75	18	75	29	58	
	sometimes	4	40	7	43.75	5	20.8	16	32	
Do you have mal digestion	Yes	3	30	0	0	6	25	9	18	0.056
	No	5	50	5	31.25	5	20.8	15	30	
	sometimes	2	20	11	68.75	13	54.2	26	52	
Do you feel tired	Yes	1	10	1	6.25	8	33.3	10	20	0.16
	No	2	20	2	12.5	1	4.2	5	10	
	sometimes	7	70	13	81.25	15	62.5	35	70	
Do you have loss of appetite	Yes	1	10	1	6.25	2	8.3	4	8	0.76
	No	2	20	2	12.5	7	29.2	11	22	
	sometimes	7	70	13	81.25	15	62.5	35	70	
Do you have nausea or vomiting	Yes	2	20	0	0	5	20.8	7	14	0.39
	No	4	40	8	50	8	33.3	20	40	
	sometimes	4	40	8	50	11	45.8	23	46	
If yes, When do you feel it	before meals	0	0	0	0	4	16.7	4	8	0.13
	after meals	6	60	8	50	12	50	26	52	
Do you have frequent micturition	Yes	1	10	1	6.25	3	12.5	5	10	0.8
	No	8	80	12	75	15	62.5	35	70	
	sometimes	1	10	3	18.75	6	25	10	20	
do you have difficult micturition	No	9	90	16	100	18	75	43	86	0.08
	sometimes	1	10	0	0	6	25	7	14	
Do you have persistent constipation	Yes	1	10	1	6.25	3	12.5	5	10	0.93
	No	7	70	11	68.75	14	58.3	32	64	
	sometimes	2	20	4	25	7	29.2	13	26	
Does another family member had medical disorder	Yes	5	50	13	81.25	21	87.5	39	78	0.05
	No	5	50	3	18.75	3	12.5	11	22	
Do you eat all 3 meals	yes	5	50	6	37.5	11	45.8	22	44	0.79
	sometimes	5	50	10	62.5	13	54.2	28	56	

		Normal weight (10 patients)		Overweight (16 patients)		Obese (24 patients)		Total (50 patients)		P value
		N	%	N	%	N	%	N	%	
Do you have breakfast	yes	6	60	7	43.75	13	54.2	26	52	0.27
	No	1	10	0	0	4	16.7	5	10	
	sometimes	3	30	9	56.25	7	29.2	19	38	
do you eat fast food	No	5	50	6	37.5	13	54.2	24	48	0.58
	sometimes	5	50	10	62.5	11	45.8	26	52	
do you eat vegetables	yes	7	70	13	81.25	16	66.7	36	72	0.59
	sometimes	3	30	3	18.75	8	33.3	14	28	
Do you eat snakes between meals	No	4	40	4	25	9	37.5	17	34	0.64
	sometimes	6	60	12	75	15	62.5	33	66	
Do you drink water regularly	yes	1	10	0	0	2	8.3	3	6	0.26
	No	6	60	14	87.5	13	54.2	33	66	
	sometimes	3	30	2	12.5	9	37.5	14	28	
Do you eat fatty meals	yes	1	10	0	0	2	8.3	3	6	0.32
	No	3	30	6	37.5	3	12.5	12	24	
	sometimes	6	60	10	62.5	19	79.2	35	70	
How many meals do you have	2	3	30	3	18.75	6	25	12	24	0.8
	3	7	70	13	81.25	18	75	38	76	

Table (5) showed that there were no significant differences (P>0.05) among all groups as regard in total protein with values 172.9, 189.6 and 197.49 g/ day for normal weight, overweight and obese HD patients. In addition, results in the same table rivaled that there were no significant differences (P>0.05) among all groups as regard in total fat with values 149.3, 157.9 and 175.4 g /day. At the line with values (p value was 0.003), total fat (p value was 0.03), results in the same table found the mean values carbohydrates intake were 399.9, 473, and 513.98 g/day in normal weight, Overweight, Obese groups with HD respectively. There were no significant differences (P>0.05) among all groups as regard in phosphorus with values 2390.5, 2630and 2804.8g /day. Finally, data showed that calcium in obese HD patients was 1322.7 ± 467mg/dl higher than other groups but not significant differences (P>0.05).

Data given in table (6), showed that there were no significant differences (P>0.05) among all groups as regard in urea with values 156.6, 167.7and 155.58 g/ day for normal weight, overweight and obese HD patients respectively, data showed that creatinine in normal HD patients was 11.54 ± 3.97 mg/dl higher than other groups but not significant differences (P>0.05). The same table rivaled that there were no significant differences

(P>0.05) among all groups as regard in blood urine nitrogen (BUN) with values 79.19, 81.6 and 70.6 mg /day in normal weight, overweight and obese HD patients respectively.

Table (5): Dietary Intake for Patients at Hemodialysis.

	Normal weight (10 patients)	Overweight (16 patients)	Obese (24 patients)	P value
Total protein	172.9a ± 57.7	189.6a ± 28.4	197.49a ± 46.37	0.343
Fat-A (g)	106.59a ± 47.86	114.1a ± 40.1	117.89a ± 35	0.749
Fat-P	42.73a ± 11.19	43.85a ± 15.15	57.52a ± 44.8	0.325
Total fat (g)	149.3a ± 52.9	157.9a ± 40.1	175.4a ± 67.15	0.414
Carbohydrate (g)	399.9a ± 76.1	473a ± 94.3	513.98a ± 178.3	0.104
Calcium(mg)	1089.1a ± 267.4	1171a ± 370.2	1322.7a ± 467	0.256
Phosphorus (mg)	2390.5a ± 416.8	2630a ± 432.3	2804.8a ± 648	0.136

Table (6): Kidney Function of Patients at Hemodialysis.

	Normal weight (10 patients)	Overweight (16 patients)	Obese (24 patients)	P value
Urea (mg/dl)	156.6a ± 57.6	167.7a ± 39.59	155.58a ± 42	0.06
Creatinine(mg/dl)	11.54a ± 3.97	9.56a ± 3.1	9.71a ± 2.43	0.75
BUN (mg/dl)	79.19a ± 11.99	81.6a ± 19.56	70.6a ± 19.6	0.084

According to the data in table (7) showed that Electrolyte Level of Patients at Hemodialysis (phosphors (P), sodium (Na), potassium (K), magnesium (Mg), and total calcium (T.Ca). The obtained results indicated that ph in overweight HD patients was higher than other groups but not significant differences (P>0.05), the mean values were of Na were 133.1, 133.75, and 134.5 (meq/L) in normal weight, Overweight, Obese groups with HD respectively. There was no significant difference (P>0.05). There were no significant differences (P>0.05) among normal weight, Overweight, Obese groups with HD as regard in k with values 5.25, 5.83 and 5.37 (meq/L) respectively. Also, results in the same table found that the relationship of Mg levels in HD Patients is not significant differences (P>0.05), the mean values were of Mg were 2.4, 2.46, and 2.26 (mg/L) in normal weight, Overweight, Obese groups with HD respectively.

Table (7): Electrolyte Level of Patients at Hemodialysis.

	Normal weight (10 patients)	Overweight (16 patients)	Obese (24 patients)	P value
P (mg/L)	4.79a ± 0.88	5.8b ± 1.6	4.49a ± 0.94	0.06
Na (meq/L)	133.1a ± 4.04	133.75a ± 2.8	134.5a ± 3.19	0.4
K (meq/L)	5.25a ± 0.64	5.83 b± 0.66	5.37a ± 0.79	0.12
Mg (mg/L)	2.4a ± 0.38	2.46a ± 0.495	2.26a ± 0.55	0.43
T.Ca (mg/L)	7.85a ± 2.1	8.3a ± 0.64	8.51a ± 0.48	0.43

DISCUSSION

Chronic kidney disease (CKD) is currently a public health problem. CKD is a slow, progressive, and irreversible loss of kidney function. Because this loss is slow and progressive, it results in an adaptive process in which the patient remains asymptomatic for some time. However, when the kidneys can no longer adequately remove the metabolic degradation products, dialysis treatment should be initiated. Hemodialysis (HD) is the most common renal treatment today (17) Our results showed that 4, 1 and 0 patients were single. 6, 15 and 24 patients were married. There was significant difference between groups.

Most of subjects were married or living with a partner (57.6%), in agreement with the study by (18) There was no significant relationship between marital and nutritional status of individuals. However, the prevalence of malnutrition was slightly higher among widowed people than among married people. Living with a partner or family is a factor that can increase home care. After all, CKD leads to functional loss, compromising the independence and autonomy of individuals and often making them dependent on partial or full care of another person, which occurs more frequently with the elderly (19).

Most participants in the study had complete or incomplete elementary education (59%), as shown in the work by (20) which characterizing a population with a low education level. Individuals

with no education, classified as illiterate, had a higher prevalence of malnutrition than individuals with higher education (complete or incomplete). The median of both personal (R$ 570.00) and family (R$ 1,000.00) monthly income was low, characterizing a population of low socioeconomic status. Monthly personal income was correlated with the presence of malnutrition, and those who received less than one MW per month had a higher prevalence of malnutrition than those who received more than one MW. The relationship between socioeconomic status (represented by low education and low monthly income) and nutritional status is expected and appears logical. Poverty, low income, and a lack of knowledge and access to information are generally among the causes of malnutrition in this population (21).

Our results showed that mean total protein was 172.9, 189.6 and 197.49 in normal weight, overweight, and obese patients respectively. mean total fat was 149.3, 157.9 and 175.4 in normal weight, overweight and obese patients respectively. the mean carbohydrate was 399.9, 473 and 513.98 in normal weight, overweight, and obese patients respectively.

The mean calcium was 1089.1, 1171 and 1322.7 in normal weight, overweight and obese patients respectively. the mean phosphorus was 2390.5, 2630 and 2804.8 in normal weight, overweight and obese patients respectively.

There was a significant difference between groups as regards total protein, total fat, carbohydrate and calcium.

Patients receiving dialysis may consume significantly lower amounts of potassium, vitamin C, and dietary fibers as well as lower amounts of some carotenoids (22). Our results showed that mean iron A was 13.1, 13.1 and 17.6 in normal weight, overweight, and obese patients respectively. The mean iron P was 16.2, 22.4 and 18.5 in normal weight, overweight and obese patients respectively. The mean total iron was 29.3, 35.5 and 36.1 in normal weight, overweight and obese patients respectively. The mean sodium was 6018.9.1, 6959.7 and 6013.3.7 in normal weight, Overweight and obese patients respectively.

Mean potassium was 4192.5, 4650.1 and 4470.2 in normal weight, Overweight and obese patients respectively. (23).

BMI increased from 20.4 ± 2.3 kg/m2 at baseline to 21.2 ± 2.3 (P < 0.01), 21.7 ± 2.1 (P < 0.05) at six months and one year, respectively, after switching to DHD. Lean body mass increased from 47.7 ± 4.9 kg to 49.1 ± 5.9 (P < 0.05) and 50.5 ± 6.2 (P < 0.05) as well as fat free body mass from 9.7 ± 4.9 to 10.7 ± 4.9 (P = NS) and 11.1 ± 5.3 kg (P < 0.05) at six and twelve months, respectively (24).

CONCLUSION

Malnutrition is prevalent in chronic hemodialysis patients that can be identified by a subjective global assessment. Elderly patients and patients who are losing weight are risk factors for mild to moderate malnutrition.

REFERENCES

1. Nasir, K., Sultan, S., Qureshi, R., Dhrolia, M., and Ahmad, A. Mini Nutritional Assessment (MNA) as a Reliable Tool for Nutritional Assessment of Hemodialysis Patients: A Single-Center Observation. Cureus, (2022); 14(1).

2. Iqbal, M. S., Iqbal, Q., Iqbal, S., and Ashraf, S. Hemodialysis as long-term treatment: Patients satisfaction and its impact on quality of life. Pakistan Journal of Medical Sciences, (2021); 37(2), 398.

3. Elliott, D. A.: Hemodialysis. Clinical techniques in small animal practice, (2000); 15(3), 136-148.

4. Vadakedath, S. and Kandi, V. Dialysis: a review of the mechanisms underlying complications in the management of chronic renal failure, (2017); Cureus, 9(8).

5. Salame, C.; Eaton, S.; Grimble, G. and Davenport, A. Protein losses and urea nitrogen underestimate total nitrogen losses in peritoneal dialysis and hemodialysis patients. Journal of Renal Nutrition, (2018); 28(5), 317-323.

6. Afifi, A.: Annual reports of the Egyption renal registry;1996-2008, http://www.esnonline.net.;(2008) Accessed on 12/6/2015

7. Afifi, A,Karim MA.,Renal replace memt therapy in Egypt:first annual report of the Egyptian Society of Nephrology. East Medlterr Health,(1999) J.5;1023-9

27

28

8. EL-Minshawyo, Kamel,EG.Renal Replacement Therapy And In Creased Risk of cardiorascular Disease In El-Minia Governorate,upper Egypt, The Egyptian Journal of Hospital Medicine,(2006);22:29-38

9. World Health Organization (2008): The global burden of disease . World Health Organization, Geneva. Available at http://www.who.int/healthinfo/global_burde n_disease/GBD_report_2004update_full.pdf Accessed May 2015

10. Ikizler TA, Cano NJ,Fouqued,etal.(2013): prevention and treatment of protein energy wasting in chronic kidney disease patients :aconsensus statement by the International society of Renal (Nutrition and Metabolism . Kidney Int .84(8):1096-107

11. Steier ,A ,Leon JB ,Secker D ,Mccarthy M,Mccann L ,Serra M,et al .(2007): Multicenter study of the validity and reability of subjective global assessment in the hemodialsis population .JRen Nutr .17(5):336-42

12. Fouque D,Vennegoor M,terwee P,Wannerc ,Bascia ,Canaud B,Haagep ,Konner K ,Kooman J , Martin – Malo A,Pedrini L ,et al .(2007):EBPG Guideline on Nutrition .Nephrol . Dial. Transplant .22(suppl2):ii45-ii87.

13. Kidney BJ and Pifer TB .(2004): Kidney Disease Out Comes Quality Initiative (K/DOQI)and the Dialysis Out comes and practices pattems study (DOPPS):Nutrition guidelined ,indicators, and practices .Am J Kidney Dis.44(suppl.2):S39-46.

14. Segall L, Mardare N.G,Ungureanu,S,Busuioc M, Nistor I.Enache R.and Covie A (2009): Nutritional Status evaluation and survival in haemdialysis patients in one centre from Romania .Nephrology Dialysis Tran Splantation:gfp110.

15. HASB ELNABI, Marwa, et al. Assessment of hematological parameters, liver and kidney functions among fuel station workers in Sohag governorate, Egypt. Ain Shams Journal of Forensic Medicine and Clinical Toxicology, 2021, 37.2: 57-66.

16. GREASLEY, Pete. EBOOK: Quantitative Data Analysis using SPSS: An Introduction for Health and Social Sciences. McGraw-Hill Education (UK), 2007.

17. Prasines, A.; Devuyst, O.; and Leroux, J. C. Peritoneal dialysis beyond kidney failure. Journal of Controlled Release, (2018): 282, 3-12.

18. Diefenthaeler, E. C., Wagner, M. B., Poli-de-Figueiredo, C. E., Zimmermann, P. R., and Saitovitch, DIs depression a risk factor for mortality in chronic hemodialysis patients? Brazilian Journal of Psychiatry. (2008); 30, 99–103.

19. Belasco, A. G., and Sesso, R. Burden and quality of life of caregivers for hemodialysis patients. American Journal of Kidney Diseases, (2002); 39(4), 805–812.

20. Kusumoto, L., Marques, S., Haas, V. J., and Rodrigues, R. A. P. Adultos e

idosos em hemodiálise: avaliação da qualidade de vida relacionada à saúde. Acta Paulista de Enfermagem, (2008);21, 152–159.

21. Cuppari, L. Guia de nutrição: nutrição clínica do adulto. In Guia de nutrição: Nutrição clínica do adulto, (2005); (p. 474).

22. Kalantar-Zadeh, K., Kopple, J. D., Deepak, S., Block, D., and Block, GFood .Journal of Renal Nutrition, (2002); 12(1), 17–31.

23. Desbrow, B., Bauer, J., Blum, C., Kandasamy, A., McDonald, A., and Montgomery, K. Assessment of nutritional status in hemodialysis patients using patient-generated subjective global assessment. Journal of Renal Nutrition, (2005); 15(2), 211–216.

24. Galland, R., Traeger, J., Arkouche, W., Cleaud, C., Delawari, E., and Fouque, D. Short daily hemodialysis rapidly improves nutritional status in hemodialysis patients. Kidney International, (2001); 60(4), 1555–1560.

29

التغذية وعلوم الأطعمة

تقييم الحالة الغذائية لمرضي الغسيل الدموي الخارجين والمترددين على مستشفي الشرطة

عصام بودي، عبير نزيه، هبه امام

قسم التغذية وعلوم الاطعمة كلية الاقتصاد المنزلي، جامعة المنوفية، شبين الكوم، مصر

نوع المقالة	
بحوث اصلية	

المؤلف المسئول

عصام بودي

essam.hussien@hec.menofia.edu.eg

الجوال 7976 029 100 20+

الملخص العربي:

الغسيل الدموى وسيلة علاج تستخدم الدورة الدموية لعلاج أرتفاع مستوي اليوريا بالجسم.الغسيل الدموى يستخدم لعلاج الحالات الحادة والمزمنة من الفشل الكلوى, التسمم الحاد أو عمليات زرع الكلى. هدفت الدراسة الى تقييم الحالة الغذائية لمرضى الغسيل المترددين على العيادات الخارجية بمستشفى الشرطة, وشملت الدراسة 50 مريض تراوحت أعمارهم مابين (25 الى50) سنة من الذكوروتم عمل أسترجاع 24 ساعة والمقاييس الجسمية (طول- وزن- مؤشر كتلة الجسم), الحالة الأجتماعية-صورة دم كاملة- العادات الغذائية- المأخوذ من العناصر الغذائية وأخيرا وظائف الكلى, وتم تقسيم عينة الدراسة الى ثلاث مجموعات طبقا للوزن (طبيعى- وزن زائد- سمنة). وأظهرت النتائج المتحصل عليها أن هناك أختلاف معنوى بين المجموعات الثلاثة فى المأخوذ من العناصر الغذائية مع وجود علاقة موجبة بين العمر ومؤشر كتلة الجسم كذلك بين المأخوذ من البروتين الكلى وكل من الكربوهيدرات- الكالسيوم- ومستوي فيتامين أ. أنتشار سوء التغذية بين مرضى الغسيل الدموى يمكن التعرف عليه وتحديده من خلال المقاييس الموضوعية العالمية, كما أن المرضى الذين يفقدون الوزن على درجة بسيطة أو متوسطة من سوء التغذية.