Assessment of Risk Factors among Renal Failure Patients in Baghdad Teaching Hospital

تقييم عوامل الخطورة لمرضى الفشل الكلوي في مستشفى بغداد التعليمي

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المستخلص:

الهدف: تقييم العلاقة بين الخصائص الديموغرافية للمرضى الذين يعانون من الفشل الكلوي مع بعض عوامل الخطر مثل (التاريخ ألعائلي ، شرب الكحول ،التدخين الامراض المزمنة) مع مرضى الفشل الكلوي.

المنهجية: إجريت دراسة مقارنة بين عينة الدراسة وعينة ضابطة من أجل تحقيق أهداف الدراسة باستخدام أسلوب التقييم في مستشفى بغداد التعليمي من ٥ اذار ٢٠١٧ إلى ١٠ تشرين الاول ٢٠١٧ وكانت عينة الدراسة (٢٠٠) عينة ، كانت ضمنها (١٠٠) عينة الدراسة شملت المرضى الذين دخلوا مستشفى بغداد التعليمي، و (١٠٠) عينة ضابطة. جمعت البيانات من خلال استبيان المقابلة لتحقيق الغرض من الدراسة. تم تحليل الحالة بواسطة (التكرار، النسبة المئوية، نسبة الأرجحية)، وجدول إحصائي و استدلالي لتحليل البيانات الإحصائية من قبل تطبيق الاختبار كاي– سكوير الذي يستخدم لتحديد الارتباط بين جزئي الدراسة.

النتائج: أظهرت النتائج ان ٣٠,٥٪ من العينة كان لديهم الفشل الكلوي الحاد، هناك ارتباط إحصائي بين العناصر ذات الصلة بتاريخ الأسرة من الفشل الكلوي بين عينة الدراسة والعينة الضابطة.

التوصيات: بناءً على نتائج ألدراسة يوصى زيادة الوعي حول المخاطر الصحية للفشل الكلوي من خلال البرامج التعليمية والحلقات الدراسية، وتوفير المعدات الحديثة والأدوية التي تساعد على التشخيص والعلاج.

Abstract

Objective(s): To identify the relationship between demographic characteristics of patients with renal failure and to find out the relationship between some risk factors like (family history, alcohol drinking, smoking and chronic disease) with renal failure patients.

Methodology: Case control study design was carried out in order to achieve the objectives of the study by using the assessment technique in Baghdad teaching hospital from March 5th, 2017 to October 10th, 2017, The sample was (cases & control) sample, present study include 200 cases, 100 was case study the patient who entered in Baghdad teaching hospital, while another 100 was control study. The data was collected by interview questionnaire including the purpose of study by the investigator and the data obtained through face to face. Data was analyzed that of case control study including (frequency, percent, odds ratio and confidence interval). Therefore, discriminating analysis was performed, discriminating analysis was performed, with the level of significant set at P ≤ 0.05.

Results: Results presented that 30.5% of study was having acute renal failure, and highly statistical significant association between the items related to the Family history of renal failure and with groups (cases and control).

Recommendations: The study recommended that increase awareness about the health risks of renal failure through educational programs and seminars and the provision of modern equipment and medicines that help diagnosis and treatment.

Key words: Assessment, Risk Factors, Renal Failure, Teaching Hospital.

Introduction

Renal failure is a condition in which the kidneys fail to remove metabolic end-products from the blood and regulate the fluid, electrolyte and PH balance of the extracellular fluids. Renal failure can occur as an acute or chronic disorder. Acute renal failure is abrupt in onset and often is reversible if recognized early and treated appropriately. Chronic renal failure is the end results of irreparable damage to the kidneys. It develops slowly, usually over the course of the number of years [1].

Occurrence of renal failure varies widely around the world and differences depend mostly on health care systems. Prevalent patients in Australia to 95% in Japan is very low (only 5% of patients on prevalent) and very high in New Zealand (58.7%). The percentage of patients ranges from 10% to 25% in most countries [2]. In 7 European countries and North America prevalence rates greater than 30 million populations [3].

Many different symptoms can occur during kidney failure, though sometimes none are present. Possible symptoms include (reduced amount of urine, swelling of legs, ankles, and feet from retention of fluids caused by the failure of kidneys to eliminate water waste, unexplained shortness of breath, eliminate water waste, unexplained shortness of breath, excessive drowsiness or fatigue, persistent nausea, confusion, pain or pressure in chest, seizures and coma[4].

Risk factors of renal failure may include: atherosclerosis is often considered the prime factor that leads to the development of renal failure. Age of an individual also plays a vital role in the development of renal failure, with progressing age. Heart disorders, low blood pressure and other common risk factor (diabetes, other kidney disorders, acute dehydration, excessive loss of blood due to injury and severe lung disorders) [5].

Methodology

Sampling:

Case control study design was carried out in order to achieve the objectives of the study by using the assessment technique in Baghdad teaching hospital from March 5th, 2017 to October 10th, 2017, The sample was (cases & control) sample, present study include 200 cases, 100 was case study the patient who entered in Baghdad teaching hospital, while another 100 was control study. The data was collected by interview questionnaire including the purpose of study by the investigator and the data obtained through face to face.

Statistical analysis:

Data was analyzed that of case control study including (frequency, percent, odds ratio and confidence interval). Therefore, discriminating analysis was performed, discriminating analysis was performed, with the level of significant set at $P \leq 0.05$[6].

$\leq$ = **Equal or Less than**

Results

Table (1): Distribution of the study sample according to type of renal failure

Type of renal failure	F	%
Acute	61	30.5
Chronic	39	19.5
Healthy	100	50.0
Total	**200**	**100.0**

F = Frequency, % = Percentage.

This table shows that the higher rate of cases was (30.5%) in acute renal failure, while the lower rate was (19.5%) in chronic renal failure.

Table (2): Distribution of the study sample according to age groups and gender

Age groups years	Gender				Total	
	Male		Female			
	F	%	F	%	F	%
< 40	15	7.5	15	7.5	30	15.0
40-49	7	2.5	3	1.5	10	5.0
50-59	17	8.5	19	9.5	36	18.0
60-69	23	11.5	25	12.5	48	24.0
70 and more	38	19.0	38	19.0	76	38.0
Total	**100**	**50.0**	**100**	**50.0**	**200**	**100.0**

F = Frequency, % = Percentage.

This table shows that in male cases, the higher rate (19%) in the age groups 70 and more years old, followed (11.5%) in the age 60-69 years old and the lower rate (2.5%) in the age 40-49 years old, regarded the female cases, the higher rate (19%) in the age groups 70 and more years old, followed by (12.5%) in the age 60-69 years old and the lower rate (1.5%) in the age 40-49 years old.

Table (3): Distribution of the study sample according to age and types of the study sample (cases & control)

Age groups years	Groups				Total	
	Case		Control			
	F	%	F	%	F	%
< 40	15	7.5	15	7.5	30	15.0
40-49	5	2.5	5	2.5	10	5.0
50-59	18	9.0	18	9.0	36	18.0
60-69	24	12.0	24	12.0	48	24.0
70 and more	38	19.0	38	19.0	76	38.0
Total	**100**	**50.0**	**100**	**50.0**	**200**	**100.0**

F = Frequency, % = Percentage, < = Less than.

This table shows that in types of the study sample (cases & control) with the age, the higher rate (19%) in the age groups 70 and more years old, followed (12%) in the age 60-69 years old and the lower rate (2.5%) in the age 40-49 years old.

Table (4): Distribution of the study sample according to Demographic characteristics and types of the study sample (cases & control)

Demographic characteristics		Cases		Control		Total		Test
		F	%	F	%	F	%	
Marital status	Married	55	27.5	55	27.5	231	55.0	P=0.99 NS
	Unmarried	11	5.5	12	6.0	32	11.5	
	Separation	6	3.0	6	3.0	12	6.0	
	Widowed	28	14.0	27	13.5	55	27.5	
	Total	**100**	**50.0**	**100**	**50.0**	**200**	**100.0**	
Occupation status	Governmental employed	18	9.0	17	8.5	35	17.5	P= 0.91 NS
	Free work	25	12.5	24	12.0	49	24.5	
	House wife	31	15.5	32	16.0	63	31.5	
	Retired	1	0.5	3	1.5	4	2.0	
	Unemployed	20	10.0	17	8.5	37	18.5	
	Student	5	2.5	7	3.5	12	6.0	
	Total	**100**	**50.0**	**100**	**50.0**	**200**	**100.0**	
Residenc	Urban	58	29.0	53	26.5	111	55.5	P=0.47 NS
	Rural	42	21.0	74	23.5	89	44.5	
	Total	**100**	**50.0**	**100**	**50.0**	**200**	**100.0**	

F = Frequency, % = Percentage, P = probability level, NS: Non-significant at P > 0.05.

This table shows that in demographic characteristics with types of the study sample (cases & control), in marital status, the higher rate of cases (27.5%) were married, followed (14%) were widowed and the lower rate (3%) were separation. while in control, the higher rate (27.5%) was married, (13.5%) were widowed and the lower rate (3%) was separation. not significant differences had been found between the marital status and groups P=0.99, regarding the occupation, the higher rate of cases (15.5%) were housewives and the control (16%). not significant differences had been found between the occupation and groups P=0.91, also this table shows the residence, (29%) of cases living in urban area and (26.5%) in control, not significant differences had been found between the residence and groups P=0.47.

Table (5): Distribution of the study sample according to Family history of renal failure, alcohol drinking and Smoking habits with types of the study sample (cases & control)

		Case		Control		Total		OR	95%CI	P-value
		F	%	F	%	F	%			
Family history of renal failure	Yes	46	23.0	5	2.5	51	25.5	16.18	6.06-43.19	**0.000 HS**
	No	45	27.0	95	47.5	149	74.5			
	Total	**100**	**50.0**	**100**	**50.0**	**200**	**100.0**			
Alcohol drinking	Yes	6	3.0	5	2.5	11	5.5	1.21	0.35-4.11	0.75 NS
	No	94	47.0	95	47.5	189	94.5			
	Total	**100**	**50.0**	**100**	**50.0**	**200**	**100.0**			
Smoking habits	Current smoker	65	32.5	41	20.5	106	53.0	3.38	1.63-6.99	**0.005 HS**
	Passive smoker	7	3.5	12	6.0	19	9.5	1.24	0.407-3.79	
	Ex-smoker	13	6.5	15	7.5	28	14.0	1.84	0.705-4.84	
	Not	15	7.5	32	16.0	47	23.5	-	-	
	Total	**100**	**50.0**	**100**	**50.0**	**200**	**100.0**	-	-	

F = Frequency, % = Percentage, CI = confidence interval, P = probability level, HS = Highly Significant at P< 0.05, NS: Non-significant at P > 0.05.

This table shows that in types of the study sample (cases & control) with family history of renal failure, the numbers of cases (23%) were family history and the control (2.5%) (OR 16.18, 95%CI (6.06-43.19). Highly significant differences had been found between the family history of renal failure and groups P=0.000, the number of cases (3%) was drink alcohol and the control (2.5%) (OR 1.21, 95%CI (0.35-4.11). not significant differences had been found between the alcohol drinking and groups P=0.75, the number of cases (32.5%) was current smoker and in control (20.5%) (OR 3.38, 95%CI (1.63-6.99). while in cases groups were passive smoker (3.5%) and in control groups (6%) (OR 1.24, 95%CI (0.407-3.79). highly significant differences had been found between the smoking habits and groups P=0.005.

Table (6): Distribution of the study sample according to chronic disease and 7 types of the study sample (cases & control)

Chronic disease		Case		Control		Total		OR	95%CI	P-value
		F	%	F	%	F	%			
Diabetes mellitus	Yes	72	36.0	71	35.5	143	71.5	1.05	0.56-1.94	P=0.87 NS
	No	28	14.0	29	14.5	57	28.5			
	Total	100	50.0	100	50.0	200	100.0			
Hypertension	Yes	81	40.5	75	37.5	156	78.0	1.42	0.72-2.78	P=0.3 NS
	No	19	9.5	25	12.5	44	22.0			
	Total	100	50.0	100	50.0	200	100.0			
UTI	Yes	45	22.6	24	21.1	69	34.7	2.55	1.39-4.64	**P=0.002 HS**
	No	55	27.6	75	37.7	130	65.3			
	Total	100	50.0	100	50.0	200	100.0			
Heart disease	Yes	29	14.5	26	13.0	55	27.5	1.16	0.62-2.16	P=0.63 NS
	No	71	35.5	74	37.0	145	27.5			
	Total	100	50.0	100	50.0	200	100.0			

F = Frequency, % = Percentage, OR = odds ratio, CI = confidence interval, P = probability level, HS = Highly Significant at P< 0.05, NS: Non-significant at P > 0.05.

This table shows that in types of the study sample (cases & control) with chronic disease, not significant differences had been found between the diabetes mellitus, hypertension, heart disease and groups P=0.87, P=0.3, P=0.36, respectively. Highly significant differences had been found between the UTI and groups P=0.002 (OR 2.55, 95% CI 1.39-4.64.

Discussion

1. Discussion of the study sample according to type of renal failure

The acute cases (30.5%) and chronic cases 19.5%, because some of patients in first diagnosis and treated from acute renal failure. The Ministry of health provided the important drug to treat and cure from acute renal failure. Some of patients don't develop the renal failure from cute to chronic and response to medication (Table 1).

2. Discussion of the study sample according to age groups and gender

In this study, male and female are 50% for each. A study presented supportive evidence to this result by Awad [7] there were 124 (53%) males and 106 (47%) females with a male to female. This is due to similarity in country (Table 2).

3. Discussion of the study sample according to age groups and types of the study sample (cases & control)

In the study shows 19% in the age 70 and more for each cases and control. A study presented supportive

evidence to this result by Dash and Aggarwal [8] the older ages are more susceptible to disease because their immune systems are weak (Table 3).

4. Discussion of the study sample according to Demographic characteristics and types of the study sample (cases & control)

Marital status for both cases and control 27.5% were married. A result. This finding supportive evidence is a available in a study stated that the high percentage to renal failure patients were married. This is due to similarity of customs and traditions between the two countries renal failure. [9]

Occupational in cases and control 15.5% were housewives in cases and control 16%, because the most patients from female participated were housewives. Female more susceptible to risk of renal failure, because the recurrent of urinary tract infection without correct treated may effected.

Residence of the study sample (cases and control), 29% of cases groups and 26.5% of control living in urban area. This result support evidence is available in a study found the high percentage to renal failure patients were urban area. [9] This is due to the similar style of living between the two countries (Table 4).

5. Discussion of the study sample according to Family history of renal failure, alcohol drinking and Smoking habits with types of the study sample (cases & control)

Family history of the study sample (cases and control) renal failure, 23% of cases and 2.5% in control (OR 16.18, 95% CI 6.06-43-19) were family history of renal

failure. This finding supportive evidence is a available in a study reported that family history of end stage renal disease is common among incident patients with end stage renal disease were the first to note that a family history of a first-or second degree relative with renal failure. [10] This is due to a difference between the level of health and physical, also because of the war experienced by the country over the centuries led to the deterioration of the health situation.

Alcohol consumption of the study sample (cases and control), 3% of cases and in control 2.5% (OR 1.21, 95% CI 0.35-4.11) were drinking. This finding supportive evidence is a available in a study they founded significant association between alcohol consumption and renal failure. This is due to the similar customs and tradition between the two countries.

Cigarette smoking of the study sample (cases and control), 32.5% of cases and in control 20.5% (OR 3.38, 95% CI 1.63-6.99) were current smoker. A study presented supportive evidence is available in a study stated that current cigarette smoking was also significantly associated with risk of renal failure in both men and women. [12] This is due to the similar customs and tradition between the two countries (Table 5).

6. Discussion of the study sample according to chronic disease and types of the study sample (cases & control)

Hypertension of the study sample (cases and control), 40.5% in cases and 37.5% in control. This finding support evidence is available in a study found that higher blood pressures were associated with higher incidence of end stage renal failure in both groups. This is due to

deterioration of the health situation and the lack of health awareness, which lead to spread of disease (Table 6).

Urinary tract infections of the study sample (cases and control), 34.7% of cases with renal failure were suffering from urinary tract infections. A study presented supportive evidence to this result they showed that (60%) of patients were positive UTI .This may be to similar habits between the countries [14].

Recommendations

The study recommends that:

1. Increase awareness about the health risks of renal failure through educational programs and seminars.
2. The provision of modern equipment and medicines that help diagnosis and treatment.
3. Reduction of smoking and alcohol consumption from the patients will be reducing the risk of disease.
4. Encourage smoking cessation through educational and instructional programs.
5. Screening of relatives of renal failure patients.

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