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COMPARATIVE STUDY BETWEEN DIALYSIS AND KIDNEY TRANSPLANTATION REGARDING THE CAUSES IN THE PATIENTS IN SANA'A

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ABSTRACT

There is a shortage of data about acute heart failure (AHF) in the young, including its underlying causes, clinical presentation and outcomes. The aim of this study was to described clinical characteristics, causes and outcomes of HF in Yemeni patients. The results showed an 11 Male and 25female patient with HF the diagnosis showed the increased of the hypertension in patients which equal 36 (45.90%), and 9 male and 4 female patient with HF the reason was MI which equal 13 (16.25%), and 2male 6 female patient with HF the reason was Unknown reasons which equal 8 (10%), and 9 male 14female patient with HF the IHD which equal 23(28.75%), with 38 patient with HF the diagnosis showed the increased of the in Diabetes Mellitus in patients which equal 38 (47.5%) and 17 patient with HF the reason was Renal dysfunction which equal 17 (21.25%). It can be concluded that there are serious diagnostic and therapeutic problems in our health-care system that need addressing in order to improve health care.

KEYWORDS: Acute heart failure -Hypertension - Diabetes Mellitus - Renal dysfunction.

INTRODUCTION

Chronic renal failure is the most common end-stage of a number of renal diseases. Three choices for patients at the point where kidney function was insufficient to support life are chronic dialysis, kidney transplantation or death.[1,2] With renal failure, there are many physiological disorders. Water and mineral homeostasis (sodium, potassium, calcium, chloride, phosphorus, sulphate, magnesium) and excretion of the daily metabolic charge of fixed hydrogen ions was no longer possible.[3]

There is a large population on dialysis worldwide. The social and economic consequences of chronic kidney disease (CRF) are considerable. Epidemiological research has shown that there is an increased in the incidence, prevalence and complications of this disease.[4,5,6]

Kidney Transplantation (KT), when possible, is the treatment of choice for end-stage renal failure. It is associated with improvement in short- and long-term patient and graft survival, as well as better quality of life . In some developing countries where access to dialysis is difficult, KT may be the most viable option. The present study was to know the characteristics and to identify the associated risks factors in the study group of patients in units of dialysis and renal transplantation in Sana'a, Republic of Yemen

PATIENTS, MATERIALS AND METHODS

The study was conducted in the main Sana'a hospitals, namely Al- Thwarah and the Al- Gmhori hospitals. The evaluation included history of the disease, clinical examination and laboratory investigations that included some biochemical tests. Histopathology was not available during the study period. A retrospective study data about on `112 dialysis and 47 kidney transplant. The collected data were tabulated and analyzed using SPSS 20 Pearson chi square, T-test and F test were estimated.

RESULTS

The results diagnosis showed (Table 1) that increased of the hypertension in patients which equal (27.6%) and 14 dialysis patient with CRF, the diabetes mellitus was the reason to be sick with CRF in patients which they suffering from increased of the sugar in the blood (hyperglycemia) which equal (38.8%) in dialysis patients with CRF. There was 5 patient with CRF the reason lead to the presence of the cysts in the kidney which equal (13.8%). Four patient which have CRF the diagnosis showed the stones which closed the urethral are the reason to suffering from CRF which equal (8.5%) and 18 patient with CRF the large amounts in the kidney was the

(reason unknown) to be suffering from CRF which decrease the efficacy of the kidney and which equal (38.2%). Also 6 patient with CRF the decrease size of the kidney (chronic pyelonephritis) was the one of the risk factors to be suffering from CRF and which equal (12.7%). There was 3 dialysis patient which suffering from CRF the bad use of drugs (medical abuse) like analgesics are the reason to be suffering from CRF which equal (8.3%). The table showed 5 dialysis patient they have CRF the reason back to the genetic factor (diabetic nephropathy) was played an important reason to be suffering from CRF and which equal (10.6%). Finally , 1 dialysis patient with CRF the congenital factors played an important role like people have (Chronic liver disease) which decrease efficacy of kidney and with the time the efficacy of the one kidney decrease and became with CRF and which equal (2.1%). People who suffering from chronic renal failure they may be suffering from another diseases like viral disease or cardiovascular disease.

Table 1: Causes of chronic renal failure in Dialysis patient.

Diagnosis	Dialysis	
Hypertension	No	22
	%	19.6%
Diabetes mellitus	No	11
	%	9.8%
Renal cysts	No	11
	%	9.8%
Urethral stones	No	6
	%	5.3%
Renal stones	No	19
	%	16.9%
Renal atrophy	No	24
	%	21.4%
Medical abuse	No	11
	%	9.8%
Genetic factors	No	6
	%	5.3%
Congenital factors	No	2
	%	1.7%
Total	No	112
	%	100%

The results Co-morbid condition observed in Dialysis patients with CRF showed (Table 2) showed the some patient may be effected with hepatitis C viral (HCV) and which equal (8%), And not observed patients CRF effected by HIV the percent is (0%). There were 2 cases are suffering from blindness which equal (1.7%), 4 cases are suffering from blindness which equal (11.1%) and 1 cases are suffering from MI MI which equal (0.8%).

Table 2: Co-morbid condition observed in Dialysis patients with CRF.

Disease	Numbers	Percentage
Viral disease -HBV seropositive -HCV seropositive -HIV seropositive	 10 9 0	 8.9% 8% 0%
Cardiovascular -MI	 1	 0.8%
Retina -Blindness	 2	 1.7%
Total	22	100

The results showed in Table 3, The cause of renal failure was unknown in 38.2%, Chronic pyelonephritis in 12.7%. Chronic liver disease were the etiology of the renal disease in only a small percentage 2.1% of the study Transplantation patients.

Table 3: Causes of chronic renal failure in Transplantation patient

Diagnosis	Transplantation patients	
Hypertension	No	13
	%	27.6%
Unknown	No	18
	%	38.2%
Diabetic nephropathy	No	5
	%	10.6%
Chronic liver disease	No	1
	%	2.1%
Chronic pyelonephritis	No	6
	%	12.7%
Urinary bladder stone	No	4
	%	8.5%
Total	No	47
	%	100

There were co-morbid conditions as showed in table (4) of the study patients; 38.8% Diabetic mellitus followed by 16.6% Cardiovascular.

Table 4: Co-morbid condition observed in Transplantation patients with CRF.

Disease	Number	Percentage (%)
Diabetic mellitus	14	38.8%
Hepatosplenomegaly	1	2.7%
Renal cysts	5	13.8%
Renal calcus	2	5.5%
Cardiovascular	6	16.6%
HCV	1	2.7%
Renal microbial inflammation	4	11.1%
Medical error	3	8.3%

DESSCATION

Chronic Renal disease (CRD) is a worldwide threat to public health, but the true dimension of this problem is not fully understood. Approximately 1.8 million people are currently treated with renal replacement therapy (RRT), which consists primarily of kidney transplantation, hemodialysis, and peritoneal dialysis.[7] More than 90% of these individuals live in industrialized countries, while available RRT in developing countries is scarce, and null in underdeveloped areas The incidence of chronic renal diseases is increasing worldwide, and these conditions are emerging as a major public health problem. While genetic factors contribute to susceptibility and progression of renal disease there are many of risk factors that can cause chronic renal failure. So we decided to study of chronic renal failure and related factors that can cause it.

In this study, there were 112 dialysis patients suffer from chronic renal failure (65 male and 47 female) in Al-Gomhory Hospital and 47 transplantation patient (30 male and 17 female) in Al-thowra Hospital, Sanaa city, yemen 2018. The data collection from hospital records of patients and questioner from each patient. Data analysis show high percentage of hypertension and renal atrophy in patient tolerate from chronic renal failure. Many factors related or presented with chronic renal failure such as The number of patients developing chronic renal failure as a consequence of hypertension is increasing and accounts for 25% in the United States.[8] Also, in our study, patient with history of the hypertension and getting chronic renal failure was equal to (19.6%).

A recent studies evaluated the prevalence of diabetes, metabolic risk factors,and indicators of renal disease, and the results have provided an increasedd understanding of the kidney disease worldwide.[9] In this investigation, patient with chronic renal failure who was affected with the diabetes (9.8%), which is similar to study that was in china (6.6%).[10]

Patient which have chronic renal failure the diagnosis showed the stones which closed the urethral are the reason to suffering from chronic renal failure which equal (5.3%). And the patient with chronic renal failure the large amounts of stones in the kidney was the reason to be suffering from chronic renal failure which decrease the efficacy of the kidney and which equal (16.9%). While the percentage was higher in other study in Yemen that renal stones were 27.31%,[11] Some medical conditions cause continuous hypoperfusion (low blood flow) of the kidneys, leading to kidney atrophy (shrinking), loss of nephron function, and chronic renal

failure (CRF). These conditions include poor cardiac function, chronic liver failure, and atherosclerosis ("hardening") of the renal arteries.[12]

The percentage in this sample was from with chronic renal failure and which equal (21.4%). Studies conclude that the long-term, use of drugs may increased the risk of chronic renal disease. The long-term, daily use, the major metabolite effect of some drugesis associated independently with an increasedd risk of chronic renal disease.[13] Patient which suffering from CRF the bad use of drugs (medical abuse) like analgesics are the reason to be suffering from chronic renal failure which equal (9.8%).

Congenital Anomalies of the Kidney and Urinary Tract are a major cause of morbidity in children and chronic renal failure.[14] The presence of anomalies in kidney number or size with the time the efficacy of the one kidney decrease and became with chronic renal failure. The percentage of congenital anomalies in this study was (1.7%). A genetic disorder in which abnormal cysts develop and grow in the kidneys. In our study, patient with chronic renal failure could also suffer from presence of the cysts in the kidney which equal (9.8%). this percentage is almost like other study it was People who suffering from chronic renal failure they may be suffering from another diseases like viral disease or cardiovascular disease.(Co-morbid condition served in patients with chronic renal failure).

Hemodialysis (HD) procedure per se as well as disturbances in both innateand adaptive immunity make HD patients susceptible to infections. Infections are the major cause of morbidity. Besides bacterial infections, another common problem in HD units is the blood transmitted viral infections, particularly infections caused by hepatitis B virus (HBV), hepatitis C virus (HCV) and Human immunodeficiency virus (HIV).[15]

In our study hepatitis B viral (HBV) patient was equal (8.9%) even though the present of vaccine of this type of viruses. Also some patient may be effected with hepatitis C viral (HCV) and which equal (8%).like recent report from Saudi Arabia showed a prevalence rate of HCV to be 9.24%.[16] Previously, rates in Europe were as high as 20-30%.[17] These studies generally conclude that the transmission of the virus to hemodialysis patients is generally nosocomial with possible risk factors being failure to disinfect devices between patients, sharing of single-use vials for infusions, poor sterile technique, poor cleaning of dialysis machines, and poor distance between chairs.[18] And fortunately, we do not observed patients CRF effected by HIV the percent is(0%). Like many researches there was absolute relation among chronic renal failure and cardiovascular diseases.[19] in this study The percent of people with MI was (0.8%) with chronic renal failure.

In our study results show relation between Retina diseases and chronic renal failure There were 2 cases are suffering from blindness which equal (1.7%). Such as other studies there were a direct effect in Retina diseases and chronic renal failure due to Retinal arteriolar narrowing.[20]

CONCLUSIONS

We conclude that there are serious diagnostic and therapeutic problems in our health-care system that need addressing in order to improve the care of our dialysis patients and among patients after kidney transplantation in Yemen and it intended to help in the understanding the causes of UTI among kidney transplant recipients.

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REFERENCES

1. Levey, AS, Atkins, R, Coresh, J. Chronic kidney disease as a global public health problem: Approaches and initiatives: A position statement from kidney disease improving global outcomes. Kidney Int., 2007; 72: 247-59.
2. Mozaffar, M, Shahidi, S, Badri, S. Ganciclovir use evaluation in kidney transplantation departments. J. Res. Pharm. Pract, 2016; 5(3): 212-4.
3. Seggewiss, R, Einsele, H. Immune reconstitution after allogeneic transplantation and expanding options for immunomodulation: an update Blood, 2010; 115: 3861-8.
4. Hemmelgarn BR, Manns BJ, Zhang J, Tonelli M, Klarenbach S, Walsh M, Culleton BF. Association between multidisciplinary care and survival for elderly patients with chronic kidney disease. J Am SocNephrol, 2007; 18: 993-999.
5. Locatelli F, Marcelli D, Conte F, D'Amico M, Del Vecchio L, Limido A, Malberti F, Spotti D: Survival and development of cardiovascular disease by modality of treatment in patients with end-stage renal disease. J Am SocNephrol, 2001; 12: 2411–2417.
6. Salonen T, Reina T, Oksa H et al. Cost analysis of renal replacement therapies in Finland. Am J Kidney Dis., 2003; 42: 1228–1238.
7. Gilbertson, D. T., Liu, J., Xue, J. L., Louis, T. A., Solid, C. A., Ebben, J. P. & Collins, A. J. Projecting the number of patients with end-stage renal disease in the United States to the year 2015. Journal of the American Society of Nephrology, 2005; 16: 3736-3741.
8. Weisstuch JM, Dworkin LD. Does essential hypertension cause end-stage renal disease? Kidney Int Suppl, 1992 May; 36: S33-7.
9. Chadban SJ, Briganti EM, Kerr PG, Dunstan DW, Welborn TA, Zimmet PZ, Atkins RC. Prevalence of kidney damage in Australian adults:

The AusDiab kidney study. J Am Soc Nephrol, 2003 Jul; 14(7 Suppl 2): S131-8.
10. Li LS , Liu ZH. Epidemiologic data of renal diseases from a single unit in China: analysis based on 13,519 renal biopsies. Kidney Int., 2004 Sep; 66(3): 920.
11. Sady H, Al-Mekhlafi HM, Mahdy MA, Lim YA, Mahmud R, Surin J. Prevalence and associated factors of schistosomiasis among children in Yemen: implications for an effective control programme. PLoS neglected tropical diseases, 2013 Aug 22; 7(8): e2377.
12. Caps MT, Zierler RE, Polissar NL, Bergelin RO, Beach KW, Cantwell-Gab K, Casadei A, Davidson RC, Strandness DE Jr. Risk of atrophy in kidneys with atherosclerotic renal artery stenosis. Kidney Int, 1998 Mar; 53(3): 735-42.
13. Sandler DP, Smith JC, Weinberg CR, Buckalew VM Jr, Dennis VW, Blythe WB, Burgess WP.. Analgesic use and chronic renal disease. New England Journal of Medicine, 1989 May 11; 320(19): 1238-43.
14. Sanna-Cherchi S, Ravani P, Corbani V, Parodi S, Haupt R, Piaggio G, Innocenti ML, Somenzi D, Trivelli A, Caridi G, Izzi C, Scolari F, Mattioli G, Allegri L, Ghiggeri GM.. Renal outcome in patients with congenital anomalies of the kidney and urinary tract. Kidney international, 2009 Sep; 76(5): 528-33.
15. Beathard GA, Urbanes A Infection associated with tunneled hemodialysis catheters. Seminars in dialysis, 2008; 21(6): 528-38.
16. Qadi AA, Tamim H, Ameen G, Bu-Ali A, Al-Arrayed S, Fawaz NA, Almawi WY. Hepatitis B and hepatitis C virus prevalence among dialysis patients in Bahrain and Saudi Arabia: a survey by serologic and molecular methods. American journal of infection control, 2004; 32: 493-495.
17. Touzet S, Kraemer L, Colin C, Pradat P, Lanoir D, Bailly F, Coppola RC, Sauleda S, Thursz MR, Tillmann H, Alberti A, Braconier JH, Esteban JI, Hadziyannis SJ, Manns MP, Saracco G, Thomas HC, Trépo C. Epidemiology of hepatitis C virus infection in seven European Union countries: a critical analysis of the literature. European journal of gastroenterology & hepatology, 2000; 12: 667-678.
18. Zampieron A, Jayasekera H, Elseviers M, Lindley E, De Vos JY, Visser R, Harrington M. European study on epidemiology and the management of HCV in the haemodialysis population. Part 1: Centre policy. Journal of Renal Care, 2004; 30: 84-90.
19. Foley RN, Parfrey PS, Sarnak MJ. Epidemiology of cardiovascular disease in chronic renal disease. J Am Soc Nephrol, 1998; 9: S16-S23.
20. Sabanayagam C, Shankar A, Koh D, Chia KS, Saw SM, Lim SC, Tai ES, Wong TY. Retinal microvascular caliber and chronic kidney disease in an Asian population. American journal of epidemiology, 2009 Mar 1; 169(5): 625-32.