



CODEN [USA]: IAJ PBB

ISSN: 2349-7750

INDO AMERICAN JOURNAL OF PHARMACEUTICAL SCIENCES

<http://doi.org/10.5281/zenodo.3511147>

Available online at: <http://www.iajps.com>

Research Article

OUTLINE OF RISKS OF REFERRED PATIENTS SUFFERING FROM CHRONIC KIDNEY DISEASE

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Article Received: August 2019

Accepted: September 2019

Published: October 2019

Abstract:

Objective: This research work aimed to determine the risk profile of patients suffering from Chronic Kidney Disease.

Methodology: This research was conducted in DHQ / Teaching Hospital Gujranwala. This is a transverse research work based on observations. In this research work, we collected the information of 100 patients prospectively. We selected 60 patients with estimated SGFR (Estimated Glomerular Filtration Rate) of less than one hundred and twenty ml/min/1.730m² randomly from department of nephrology. We obtained the clinical history, information about demography and result of biochemistry tests of the patients.

Results: Majority of the patients suffering from chronic kidney disease were asymptomatic. The major frequent anomalies recorded among the patients of Chronic Kidney Disease were anemia, proteinuria & hyper-kalaemia. Elder age, already prevailing morbidities as DM, Hypertension & obesity are traits that have strong association with the referred patients of chronic kidney disease.

Conclusions: Majority of the referred patients of chronic disease were present with elder age, diabetes, Hypertension and obesity. Most of the patients of chronic kidney disease were asymptomatic regardless of the mature Chronic Kidney Disease stage. There is need of strong cost-effective screening for the persons present with high risk.

Keywords: Obesity, Anomalies, Proteinuria, Asymptomatic, Morbidity, Asymptomatic, Demography.

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Please cite this article in press Muhammad Maroof Ali et al., *Outline of Risks of Referred Patients Suffering from Chronic Kidney Disease.*, Indo Am. J. P. Sci, 2019; 06(10).

INTRODUCTION:

Chronic Kidney Disease is serious problem of health in the whole world. There is an estimation about the incidence of the Chronic Kidney Disease in more than 500 million persons in the whole world and this high incidence is due to the enhanced occurrence of the Hypertension, DM (Diabetes Mellitus) and MS (Metabolic Syndrome). The most important challenge to target the Chronic Kidney Disease is heterogeneity of its reasons, co-morbidities as well as outcomes. In a previous research work conducted in Malaysia, the incidence of chronic kidney disease was 9.06% with only 4.0% subjects were present with diagnosis.

Patients who were under the nephrological treatment represent a vital reference population, but awareness about their traits is under limitations. As chronic kidney disease has association with the enhanced rate of mortality die to CVDs (Cardiovascular diseases) and a damage of disability-adjusted years of life, we carried out this research work on the patients suffering from chronic kidney disease for the determination of the risk profile of the referred patients from chronic kidney disease.

METHODOLOGY:

This is a transverse research work based on observations. All the patients diagnosed with the chronic kidney disease were the part of this research work. The age of the included patients was eighteen years and above. The diagnosis standard showed chronic kidney disease Stage-1 (GFR greater than 90.0 mL/minute/1.730m²; to stage-5 (GFR less than 15.0 mL/minute/1.730m²) in accordance with the instruction of the K/DOQI medical practice. Patients of less than

eighteen year of age or present with kidney injury were not the part of this research work. The control group contained the patients with more than eighteen year of age with pre-clinical kidney disease with estimated GFR of more than sixty ml/min per 1.730 m². We collected the information about demography, sex, age, ethnicity, BMI, chronic kidney disease etiology, Hypertension, Diabetes Mellitus and data of the laboratory findings like BP, level of creatinine, hemoglobin, level of serum calcium, HbA1C, serum phosphate, GFR, occurrence of HCV & HBV infection. We selected the patients of control group from adjacent clinic utilizing the same method of sampling as elaborated earlier.

Ethical committee of the institute gave the permission to conduct this research work. We also took the consent of the patients are their next of kin in some cases. SPSS V. 19 was in use for the analysis of the collected information. We used the average and SD values for the presentation of the categorical data. We tested the normality of the categorical information with the utilization of the Kolmogorov-Smirnov procedure. The analysis of the traits of the referred patients of chronic kidney disease carried out in accordance with the guidelines of the binomial logistic regression.

RESULTS:

A sum of one hundred patients were the part of this research work. The information about demography is present in Table-1. The sign which was most common among the referred patients of chronic kidney disease was the availability of the macro-albuminuria (68.78%), followed by the hyper-kalaemia (18.0%) and normochromic normocytic anemia as 81.0%.

Table-I: Social-Demographic Characteristic.			
Category		Referred	Control
Age (years)	<50	17.0	40*
	>50	44.0	NIH20*
Gender	Male	31.0	24.0
Ethnicity	Malay	31.0	39.0
	Non Malay	30.0	22.0

The average GFR in the group of referred chronic kidney disease patients was 20.0 ± 15.0 mL/min/1.730m² while in the group of controls it was 101.0 ± 44.0 mL/min/1.730m². In the group of referred chronic kidney disease patients, 2.0% patients were suffering from chronic kidney disease-1, 18.0% with chronic kidney disease-3, 30.0% with chronic kidney

disease-4 & 44.0% with chronic kidney disease-5 renal failure stages. Majority of the patients of this research work were asymptomatic however 5.68% patients complained of laziness, 5.68% patients were present with poor appetite, 10.28% patients were present with sign of fluid overload & only 1.48% patients were present with itchiness.

There is strong association between chronic kidney diseases with the diseases as diabetes, hypertension and proteinuria's manifestation according to the bivariate

analysis. Important laboratory identifiers apart from increased creatinine of serum and reduced GFR were the availability of hyper-kalaemia & anemia (Table-2).

able-II: Correlation Of Major Co-Morbidities With Referred Chronic Kidney Disease Status										
Co-morbidities		Referred patients				Total	Value		Confidence	
		Yes	%	No	%		Z	p-value	upper	lower
DM	Positive	49.0	61.78	27.0	34.00	78.0	13.71	0.001*	2.097	7.739
	Negative	12.0	26.00	34.0	70.00	48.0				
HPT	Positive	52.0	60.10	41.0	35.90	85.0	13.323	0.001*	2.115	8.704
	Negative	9.0	23.58	30.0	72.40	41.0				
Proteinuria	Positive	44.0	90.00	2.0	6.00	48.0	39.066	0.000*	0.011	0.126
	Negative	17.0	29.68	39.0	66.28	58.0				
Values		Mean	±SD	Mean	±SD	No	T	p-value	Upper	Lower
Laboratory values	Creatinine	470.5	295.00	75	27.00	63	8.246	0.000A	34.7	3.6
	GFR	18	13.8	101	44.8	63	11.71	0.000A	1.4	4.1
	Haemoglobin	8.4	1.58	10.0	2.28	63	2.6	0.000A	1.4	0.2
	Potassium	2.7±2.1	2.8	2.1±0.3	0.48	63/63	5	0.000A	0.4	0.3

The features like sex, ethnic group, and glucose in serum, phosphate, calcium, incidence of hepatitis, level of sodium and reading of BP were same in referred & non-referred group. The analysis of logistic regression displayed that typical profile of referred patients of

chronic kidney disease is that they are in group of elder age with features of obesity and hypertension in comparison with the healthy controls. The most frequent features of laboratory findings were anemia & proteinuria (Table-3).

Table-III: Logistic Regression Showing Factors Associated With Referred Chronic Kidney Disease Patients.						
Factors	B	S.E.	Wald	df	Sig.	Exp(B)
Ethnicity	-0.0268	0.9508	0.0008	1.0	0.776	0.9528
Age	-0.0678	0.0238	2.0138	1.0	0.043	0.8958
Weight	-0.938	0.0288	3.5358	1.0	0.016	0.8718
Diabetes	0.4628	1.268	0.1300	1.0	0.6778	1.6008
Hypertension	1.8608	1.0348	3.1628	1.0	0.0538	4.5428
Proteinuria	4.6808	1.5908	6.4909	1.0	0.002	108.0488
HbA1C	0.4078	0.2408	2.6600	1.0	0.100	1.5128
Hemoglobin	0.7858	0.3048	4.1168	1.0	0.011	2.2178
Potassium	-1.4508	0.8468	2.8558	1.0	0.0700	0.2100
Constant	1.0278	3.5258	0.0158	1.0	0.8300	2.8318

DISCUSSION:

Chronic Kidney Disease is very significant cause of high rate of mortality as well as disability but the education of this disease is very less among its patients as well as professionals of health care field. There is a rise in the burden of this disease in our country Pakistan and it increased the rate of deaths in this region. To restrict the development of the chronic kidney disease in initial stage, awareness as well as cost-effective screening procedures are the requirements to enable the early

identification and administration of the disease. Most of the patients of chronic kidney disease in our institute were in last stages of the chronic kidney disease. Majority of the referred patients of this research work were asymptomatic. This shows that there is need of the high quality of knowledge among physicians to carry out proper screening of health in the population present with high risk. In this research work, there was a strong association of the elder age with the chronic kidney disease which is similar with other works. Same to the

other different countries of the world, Diabetes Mellitus & Hypertension are the growing the burden of the disease. These both complications have association with the chronic kidney disease.

This current research work showed that the danger of having chronic kidney disease is ten time high with the proteinuria regardless of Chronic Kidney Disease's etiology. Proteinuria is a positive identifier of the injury to kidney and chronic kidney disease. The availability & the extremity of the proteinuria should be determined administering the population present with high risk. The development of the nephropathy can be reduced down via inhibitors of angiotensin-converting enzyme. Our research work harmonized with two different studies conducted in United States of America displayed targeted per year microalbuminuria screening, is necessary for the population of greater than fifty year of age and with Diabetes Mellitus, Hypertension or both as this is present as the cost-effective procedure.

Other important makers of laboratory discovered were hyper-kalaemia & anemia. The prevalence of the anemia is very high in the patients with elder age and it has association with the depression and the abnormal cognitive & physical function. With the progress of the disease of kidney, the prevalence of the anemia also increases, influencing nearly all patients suffering from Stage-5 of chronic kidney disease. Another important feature of the chronic kidney disease is the hyper-kalaemia which has association with the anomalous potassium homeostasis.

Met-S (Metabolic syndrome) was present in the studied population of this research work. One research work performed in Korea has described that the prevalence of the chronic kidney disease with the increase of the weight of body. Regardless of the positive relationship of Met-S with chronic kidney disease, there was no evidence of the fundamental association. The research works showed that patients present with Met-S have a 2.5 times more risk for the development of the chronic kidney disease. The danger of the microalbuminuria is also 2 times high in the case of Met-S. There are some limitations of this research work as it contains low size of the samples. It is the research work conducted in only single center. The findings of this research work cannot be generalized to the other clinics of nephrology.

CONCLUSIONS:

Majority of the patients suffering from chronic kidney disease are present with elder age, diabetes mellitus, obesity & hypertension. Most of the patients suffering from chronic kidney disease were asymptomatic regardless of the mature stage of the chronic kidney

disease. There is strong need of the cost effective screening for the persons present with high risk.

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