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Research Article

**A STUDY ON THE PROFILE OF HEMODIALYSIS PATIENTS
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Abstract:

Objectives: The purpose of this study is to determine the rate of occurrence of disease which is contributor to End-Stage Renal Failure and to find out the rate of occurrence of HCV (Hepatitis C Virus) and HBV (Hepatitis B Virus) infections.

Methodology: This was an observational study which was conducted in a period of 3 years from April 2016 to March 2019 in Nishtar Hospital, Multan. We admitted 189 patients with utilization of convenient procedure. We selected patients under dialysis having more than 14 years of age and those patients whose are under 14 years of age were not the participants of this research work. We used SPSS software for the statistical analysis of the collected information.

Result: There were total 189 patients in this research work, there were 49.7% (n: 94) males and 50.3% (n: 95) female patients. The average age of the patients was 51.88 ± 15.2 with a range of 14 to 86 years. Patients under dialysis with association of Hypertension were 40.2%. Both Diabetes Mellitus and hypertension were present in 42.8% and diabetes mellitus was present alone in 3.1% patients. HBV infection was present in 2.1% (n: 4) patients and HCV infection was present 16.4% (n: 31) at the start of dialysis.

Conclusion: Hypertension was the most important complication present in the patients suffering from renal diseases followed by Diabetes Mellitus, HBV and HCV infection. The positivity of HCV at the start of dialysis was 16%.

Keywords: Renal Diseases, End-Stage Renal Failure, Infection, Hypertension, Diabetes Mellitus.

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INTRODUCTION:

End-Stage Renal Failure origin with the diabetes mellitus and chronic glomerulonephritis as 33% each, then hypertension as 12%, stone diseases 7.0%, and some other are not much common reasons [1]. However, one research work conducted in Nepal stated chronic glomerulonephritis as the most common reason accountable in 40%, followed by diabetes mellitus in 17% and hypertension in 13% [2]. A research work conducted in Saudi Arabia concluded hypertension in 47%, hereditary in 23% and diabetes mellitus in 19% as stated reasons for the end-stage renal diseases [3]. These findings are old, with the development in the society these complications are changed now. Therefore, it is necessary to look upon the recent developments. There is deficiency in the data about the viral serological condition of the patients who were under dialysis.

A recently study conducted in India stated that there is lack of data about the patients under dialysis in Pakistan and India [4]. Late referral has an association with the adverse social and economic condition, poor education [5]. There are increasing number of elder patients on dialysis which was much less in past [6, 7]. With the support of this research work, we tried to assess the reasons of renal failure in the patients of this research work. One research work conducted in Saudi Arabia has stated the incidence rate of anti-HCV antibodies in the patients under dialysis as high as 50% [3] whereas one other research work discovered that rate as 57% [8]. One local research work comprising 3 dialysis centers discovered that 29.2% patients were positive for HCV antibody [9]. But in this research work we tried to determine the occurrence of HBV infection in addition with HCV infection in our patients and to determine the other complications end-stage renal failure.

MATERIAL AND METHODS:

The design of this study was an observational study. The duration of this study was from April 2016 to March 2019 in Nishter Hospital, Multan. There were 189 patients were the participants of this study. Ethical committee of the hospital gave the permission for research. All the patients under dialysis having more than 14 years of age were the participants of this research work. Patients having less than 14 years of age were not the part of this research work. The head of the hemodialysis and staff nurse entered the data of the patients as patient got registry for dialysis. The included data was about name of the patient, sex, HBsAg, age, Anti-HCV, diabetes mellitus and other complications associated with the kidney failure as hypertension, stone diseases and glomerular disease. We check the serology of hepatitis with the utilization of chemiluminescence immune-assay. We used the SPSS software for the statistical analysis of the collected information. We presented the categorical information in percentages. We presented the numerical data in averages and Standard Deviations.

RESULTS:

There were 189 patients. We randomly selected these patients because they were available with complete data. There were 49.7% (n: 94) male patients and 50.3% (n: 95) were female patients. The average age of the patients was 51.88 ± 15.2 with a range of age from 14 to 86 years. We observed that 26.9% (n: 51) patients were present with more than 60 years of age. Rate of occurrence of various diseases in the patients of this research work is present in Table-1. Total 83.1% (n: 157) were hypertensive, 42.8% (n: 81) patients were suffering from diabetes mellitus and 40.2% (n: 76) patients were present with only hypertension.

Table-I: Frequency Of Different Diseases Among Hemodialysis Patients

Diseases	No	Percent
Hypertension alone	76	40.2%
Diabetes alone	6	3.11%
Hypertension with diabetes	81	42.82%
Glomerular diseases	7	3.77%
Obstructive nephropathy	4	2.11%
Polycystic kidney disease	1	0.55%
Unknown etiology	14	7.4%

There were 46% (n: 87) diabetics while 42.8% (n: 81) patients were present with both diabetes mellitus and hypertension. The appearance of acute renal failure was present in 10.6% (n: 20) patients, acute on the chronic renal failure in 21.1% (n: 40) patients and chronic renal failure was present in 67.7% (n: 128) patients. In the start of the dialysis at our center, we saw the positivity for the HBsAg in 2.1% (n: 4) patients, anti-HCV positivity 16.4% (n: 31) patients, there was presence of only one patient who displayed the dual positivity. Among total 46%

(n: 87) patients with diabetes mellitus only one patient was present with acute renal failure, twenty patients were present with acute and chronic renal failure whereas 66 patients were present with chronic renal failure.

Table-II: Sero-Positivity of Study Population

HBsAg Positive	Anti HCV HBsAg and Anti HCV Positive	Both Positive
4 / 189	31 / 189	1 / 189
2.1%	16.4%	0.5%

DISCUSSION

End-Stage Renal Failure is very severe morbidity of health in addition to high expense for treatment, adverse quality of life and high rate of mortality. There was no gender discrimination in this research work. We also examined that 26.9% patients of this research work are present with more than 60 years of age. Hemodialysis in the patients of elder age displays a rising trend showing enhanced life expectancy [6, 7]. There was need of more geriatrics care for the elder patients under dialysis in our society. Generally, practitioners in our country are observing the hypertension and only 34% patients are receiving treatment for this complication [10]. Regardless of high concern, the incidence rate of hypertension in Multan is about 26% [11]. The findings of this research work showed hypertension to be present in 83.1% patients describing that it is the most common cause of the end-stage renal failure. One research work conducted in Pakistan stated that hypertension as a reason of the renal failure in 12.0% patients [1], from Nepal, 13% patients of renal failure were hypertensive [2] whereas from Saudi Arabia, 47.0% were present with hypertension [3]. This issue is stating that there is very high prevalence of hypertension in our society.

One other research work conducted on the patients suffering from diabetes mellitus, hypertension was present as a co-morbidity in 48% patients, whereas Diabetic Nephropathy was available in 8% patients [12]. These findings are much same with the result of current research work as our 42% patients with End-Stage Renal Failure were suffering from hypertension and diabetes mellitus. Published incidence rate of diabetes mellitus in our country Pakistan is 13.1% and impaired fasting in 5.65% [13]. One other research work also described the rising trends in hypertension, fatness and habit of cigarette smoking which have association with the increasing risk of diabetes mellitus [14].

The rate of incidence of self-reported HCV infection in general population was 0.27% in China and 1.43% in Italy [15]. One research work found the prevalence of HCV and HBV infection in healthy

children from 1.9 to 3.6% and 0.4 to 4.9% respectively [16]. The incidence of HCV infection in general public of Multan was 4.9% in more than 4000 participants [17]. The findings of this research work are showing the rate of occurrence of HCV infection in the patients under dialysis as 16.40%. The prevalence is very high as compared to the findings of local research work. The prevalence rate of HBV infection was 2.1% which was less because of the proper vaccination programs. Very high incidence of diabetes mellitus and hypertension in our general public and high rate of HBV and HCV infections are the main contributors to end-stage renal failure. There is need to make our management system to control these issues at the onset. There is only one limitation of this research work that the size of sample was very small. There is requirement of other research work on larger sample size to validate the finding of this research work.

CONCLUSION:

Hypertension alone or in combination with the diabetes mellitus is the most common complication resulting in end-stage renal failure. There was high rate of occurrence of the HCV infection in the patients at the start of dialysis.

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