

Epidemiological Profile Of Patients With End Stage Renal Disease On Maintenance Hemodialysis In Tertiary Referral Hospitals.

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Abstract

Objective:

To determine socio-demographic features of hemodialysis patients.

Study design: Descriptive cross-sectional study.

Place and duration of study: Hemodialysis unit, Mayo Hospital and Shalamar Hospital Lahore, from March 12th, 2018 to June 13th, 2018.

Materials and method:

Two hundred End Stage Renal Disease (ESRD) patients undergoing maintenance hemodialysis (MHD) were enrolled in the study. All the patients included were on dialysis for more than three months. After taking consent history, sociodemographic, clinical and laboratory data was collected on a predesigned pro forma.

Results:

Total number of patients included in study were two hundred. Out of these 150 (75%) were from Shalamar hospital & 50 (25%) were from Mayo Hospital. Mean age was 48.11 ± 13.741 years. Males were 105 (52.5%) and females were 95(27.5%). Majority (53.5%) of the patients were in middle age group (44-64 years). Less than 10th grade of education was in 146 (73%) patients. One hundred and seventy-eight (89%) patients had income less than Rs. 30,000 per month. Most of the patients were diabetic (41.5%) and hypertensive (40%). Mean duration of dialysis was 20.41 ± 20.33 months and majority of the patients 123 (61.5%) were on dialysis for less than 10 months. Frequency of dialysis was twice weekly for 155 (77.5 %) of the patients and rest of the patients were on thrice weekly dialysis. Seventy-eight (39%) of the patients were hepatitis C+ve and 31 (15.5 %) were hepatitis B+ve. Out of 200 patients 137 (68.5 %) were anemic, 161 (80.5%) were hypoalbuminemic, 170 (85%) had transferrin saturation (TSAT) less than 20%. Majority (62.5 %) patients were hyponatremic.

Conclusion:

In this study we found that majority of the patients on dialysis in tertiary referral hospitals were male, middle aged, belonged to low socio-economic class and were having twice weekly

dialysis. Hypertension and diabetes remain the leading causes of renal failure and hence dialysis. Most of the patients were malnourished.

Keywords: *Epidemiology, ESRD, hemodialysis.*

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Introduction:

Incidence of ESRD has increased tremendously in the past few decades thus affecting the developing countries, like Pakistan. Causes of this progressive increase include: lack of patient education regarding risks of ESRD, below average primary health care facilities and most importantly increase in prevalence of risk factors like diabetes and hypertension. Increasing burden of disease thus leads huge number of patients to tertiary care hospitals in developed cities for dialysis, primarily because of unavailability of resources in primary and secondary care hospitals of under developed areas. Facilitation for patients in these hospitals too is highly inadequate as compared to the burden of disease and patients have to wait for a long time before they are enrolled as regular dialysis patients. Many patients die even before getting enrolled as regular patients. This study was conducted to determine socio-demographic features in hemodialysis patients.

Methodology:

This descriptive cross sectional study was done in Mayo hospital and Shalamar Hospital hemodialysis unit from March 12th, 2018 to June 13th, 2018. Two hundred ESRD patients undergoing dialysis were enrolled in the study. All the patients included were on dialysis for more than three months. After taking consent, history, sociodemographic data (age, gender, monthly income, education and employment) and clinical data (LFTs, RFTs, CBC, HbsAg, Anti HCV) was collected on a predesigned pro forma. SPSS version 16.0 was used for data analysis. For categorical variable frequencies and percentage were calculated and for continuous variable data was expressed by mean \pm SD.

Results:

Total number of patients included in study were 200. Out of these 150 (75%) were from Shalamar hospital & 50 (25%) were from Mayo Hospital. Mean age was 48.11 ± 13.741 years. Males were 105 (52.5%), females were 95(27.5%). Majority (53.5%) of the patients were in

middle age group (44-64 years). Mean duration of dialysis of patients was 20.41 ± 20.33 months and majority of the patients 123 (61.5%) were on dialysis for less than 10 months. Frequency of dialysis was twice weekly for 155 (77.5 %) of the patients and rest of the patients were getting thrice weekly dialysis. Most of the patients were hypertensive (40%) and diabetic (41.5%). Seventy-eight (39%) of the patients were Hepatitis C+ve and 31 (15.5 %) were Hepatitis B+ve. Less than 10th grade of education was in 146 (73%) of the patients. One hundred and seventy-eight (89%) had income less than Rs. 30,000. Out of 200 patients 137 (68.5 %) were anemic, 161 (80.5%) were hypoalbuminemic, 170 (85%) had transferrin saturation (TSAT) less than 20%. Majority (62.5 %) patients were hyponatremic.

Table 1: showing demographic factors of dialysis patients

S No.	Factors		N (%)
1	Gender	Male	105 (52.5%)
		Female	95 (27.5%)
2	Age	Middle age (44-64yrs)	107 (53.5%)
		Young 30 -43 years	93 (46.5%)
3	Education	<10 years	146 (73%)
		>10 years	54 (27%)
4	Income	< Rs. 30,000	178 (89%)
		> Rs. 30,000	22 (11%)
5	Cause of ESRD	DM	83 (41.5%)
		HTN	80 (40%)
6	Frequency	Twice weekly	155 (77.5%)
		Thrice weekly	45 (22.5%)
7	Viral status	Hep (+ve)	78 (39%)
		Hep (-ve)	122 (61%)
		HbsAg (+ve)	31 (15.5%)
		HbsAg (-ve)	169 (84.5%)

Discussion:

In this study the demographic data showed that majority of the patients enrolled in tertiary care hospitals for dialysis were male. The reason behind such an observation may be male-dominant culture of the society. In this society males get priority in getting treatment and females are being ignored. ¹ It has been observed that males are the earning hands of the society and usually they go for dialysis for their survival to support the family as bread winner.

Majority of the patients on HD were middle aged group. Similar observation was found in ² another study. This is much different from developed country like Europe and USA where mean age of dialysis patients is 60-65 years. ³ The major reason of the involvement of the young people of the society is due to poor health facilities and poor screening programs of kidney diseases, at very early stage of the chronic disease like Diabetes Mellitus (DM) and hypertension

(HTN). Due to improper management of the diseases at early stage, advanced Chronic Kidney Disease (CKD) develops at a very younger age.

Hypertension and diabetes were found as the leading causes of ESRD. The high frequency of hypertension as a cause of renal failure is also indicative of existing high prevalence of hypertension in our society. In a local study on diabetics, hypertension was found as a co-morbidity in 48% of patients, while diabetic nephropathy was found in 8%.⁴ Prevalence of diabetes in Pakistan is 13.1%.⁵ Another local study shows increasing trends in hypertension, obesity, smoking which are all associated with increased risk of diabetes too.⁶

Table no 2 showing lab parameters of dialysis patients.

S. no.	Factors	Mean ± SD
1	Hemoglobin (g/dl)	10.17±1.69
2	Corrected calcium (mg/dl)	8.14±1.02
3	Phosphate (mg/dl)	4.93±1.53
4	Ca Po ₄ product	41.28 ± 16.04
5	Albumin (g/dl)	3.59 ± 0.42
6	Sodium (mmol/l)	138 ± 0.95
7	Potassium (mmol/l)	4.17 ± 0.51
8	TSAT (%)	34.73 ± 15.56
9	iPTH (pg/ml)	2.07 ± 0.66
10	Urea (mg/dl)	147.53 ± 52.95
11	Creatinine (mg/dl)	6.9 ± 3.41

Most of the patients in our study were on twice weekly dialysis treatment despite of the fact that the recommended minimal dose of dialysis is thrice weekly treatment according to KDOQI guidelines.⁷ Inadequate facilities, bulk of patients, prolonged waiting lists and limited number of free or government sponsored dialysis centers are the causes of such observation. This inadequate dialysis dose then further results in poor quality of life of such patients. Cost of dialysis is Rs. 40,000 per month and per capita income per month is nearly Rs 9,500 (Rs 115,000/annum),⁸ so it is unaffordable for the patients to get this costly therapy on their own three times a week.

In our study most of the patients were HCV positive and majority were anemic. To treat anemia in such patients erythropoietin (EPO) is required which is costly. So blood transfusions are given to these patients to cope up with severe anemia. Frequent blood transfusions in HD patients, lack of segregation of HCV positive and negative centers, lack of segregated staff to deal with positive and negative patients and inadequate patient education regarding factors responsible for seroconversion⁹ are the main reasons of this observation. According to a local observation procedure done like dental extraction and surgeries were also responsible for this seroconversion. Comparatively lesser number of HBV positive patients were found probably because of routine vaccination as part of immunization program and overall lesser prevalence of HBV.¹⁰

Majority of the patients in our study belonged to low socio economic status. Most of the patients were hypoalbuminemic because of the strict and extravagant dietary restrictions. Poor patients can't cope up with these restrictions and maintain a healthy quality of life along with proper nutrition and medications.

Conclusion:

In this study we found that majority of the patients on dialysis in tertiary referral hospitals (Mayo and Shalamar) were male, middle aged and belonged to low socio-economic class. Hypertension and diabetes remain the leading causes of renal failure and hence dialysis. Most of the patients were malnourished.

Conflict of Interest:

None

References

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