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STUDY TO KNOW DIALYSIS PATIENTS CLINICAL PROFILE SUFFERED FROM END STAGE RENAL DISEASE DUE TO DIABETIC NEPHROPATHY

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Abstract:
Objective: *To know the diabetic patients' characteristics who were on maintenance dialysis.*
Study Design: *A descriptive study.*
Place and Duration: *In the Nephrology Department of Mayo Hospital, Lahore for one-year duration from July 2016 to July2017.*
Methodology: *The data were gathered from dialysis patients with end stage renal disease (ESRD) patients who were directly dependent on diabetic retrospectives.*
Findings: *The total number of subjects in the study was 51 and the mean age of men was 31 (60.8%) and mean age was diabetic (55.2 ± 7.9). Mean duration of diabetes mellitus and dialysis (17 years) and (23 months). The onset of diabetes mellitus was at 37.5 years and dialysis onset was at 53.5 years. The diabetes mellitus average duration of initiation was 15.91 years. In total 30 (57%) were non-smokers. There were 23 (45%) and 15 (29.4%) families with other illnesses with family history of familial diabetes mellitus. 40 patients were of Type II diabetes mellitus (78.4%). Relative metabolic profile showed high cholesterol levels in 10 (19.6%), 3 (5.9%), 50 (98%) and 19 (34.93%) patients with high blood glucose levels, triglycerides and low density lipoprotein respectively.*
Conclusion: *The maximum numbers of patients were above 60years of age. In 40% of patients having D.M family history. In most cases, only diabetic nephropathy was present. The maximum patients had a high level of low density lipoproteins.*
Key Words: *Diabetes mellitus, Dialysis, ESRD, Diabetic nephropathy.*

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INTRODUCTION:

The end-stage renal disease incidence and type 2 diabetes mellitus patients as a comorbid disease has increased steadily in all countries with decades of experience in the United States and Japan, but later on with Western lifestyles. The causes of kidney disease can vary from nation to nation. In Pakistan, it was suppose to be increase in last few decades and was presumably due to a cultural practice that could lead to increased marriage between genetic kidney disease, close relatives and cousins. Similarly, other factors of kidney disease include chronic glomerulonephritis, hypertension, kidney stones and diabetes. The prevalence of diabetes mellitus (DM) has led to a heavy economic load for health care workers, with yearly death rates of dialysis patients being high and 22% in the United States and 14.4% in Pakistan No data on diabetic kidney disease the incidence in Pakistani diabetics was found. It is found that the large number of diabetic nephropathy patients were on dialysis (96%) are type II diabetic. In Pakistan, the DM increased from 5.03% in 2001 to 9.9% in 2014. By the end of 2014, there were 700 patients with hemodialysis, with an annual increase of 9.7% in these patients. More than 13,000 dialysis patients will be diagnosed in Pakistan in 2015.

MATERIALS AND METHODS:

This descriptive study was held in the Nephrology Department of Mayo Hospital, Lahore for on year duration from July 2016 to July2017. Medical records and dialysis schedules, demographic data, disease and related macrovascular complications, cerebrovascular disease, coronary artery disease, gastrointestinal, such as gastritis and diarrhea, the duration of the clinical profile of the investigated dermatologic and genitourinary disorders, Uropathy and sexual dysfunction was evaluated. Microvascular complications related to the eye also evaluated by the ophthalmologist for retinopathy, cataract, macular edema, neuropathy, glaucoma and nephropathy. Age groups of subjects were divided into decades. At the study time, final glucose levels were obtained from the lipid profile record. Total cholesterol level, Blood sugar level, triglycerides level and low density lipoprotein level were considered to be> 210 mg / dl,> 205 mg / dl,> 132 mg / dl and> 165 mg / dl respectively. Information on smoking history, family history and anti-diabetic treatment were obtained directly from the patients. Similarly, the type of diabetes was confirmed in consultation with the current drug in terms of the type of treatment and data collection initiated during the diagnosis, as well as the patients diagnosed with diabetes. All data were analyzed to know diabetes onset and dialysis duration and the duration of diabetes, and the time elapsed since the onset of dialysis diabetes. The data were analyzed using SPSS 15.0 version. Simple Chi-square test was used for ordinal, categorical and binary categorical data.

RESULTS:

A total of 253 patients with ESRD during the study period were on regular dialysis. Of these, 57 (22.5%) were diabetic (X2 = 75.2, p <0.001). Six have withdrawn from diabetic labor because four are missing follow-up, one is full, and one is missing from the required data. The men were 31 (60.8%) and all were Saudis. A maximum of 23 patients (45.1%) were in their sixth year of life. Nonsmokers were 29 (56.9%). Approximately 39 (75.0%) patients had family history.

Table-I: Socio - demographic Data (n = 51)

	Variables	*No*	*%*	*Significance*
Age	21-30	3	5.9	Mean=55.2+SD1.6
	31-40	2	3.9	
	41-50	10	19.6	
	51-60	23	45.1	
	61-70	10	19.6	
	71-80	3	5.9	
Sex	Male	31	60.8	X^2=2(0.5>p>0.1)
	Female	20	39.2	
Nationality	Saudi	51	100	X^2=51(p<0.001)
	Non-Saudi	0	0	
Smoking	Non smoker	29	56.9	X^2=22.2(p<0.001)
	Ex-Smoker	20	39.2	
	Smoker	2	3.9	
Family history of illness	DM & associated illnesses	23	45	X^2=16.7(p<0.001)
	DM Only	15	29.4	
	No significant family History	8	15.7	
	Hypertension Only	5	9.8	

Table I Most subjects developed diabetes mellitus (mean = 37.4 ± SD 1.6) in the 4th year of life in 23 (45.1%). 36 (70.6%) had extended to 12-21 years diabetes mellitus (mean = 17 ± SD0.91). In 22 patients (43.1%) ESRD developed at the 6th decade of life, requiring dialysis (mean = 54.2 ± SD1.6). More than 50% of the cases (70.6%) had a dialysis duration of <25 months (mean = 23 ± SD2.3). 18 patients require dialysis after 16-20 years of diabetes(35.3%) (mean = 15.99 ± SD1.6). For six years, there was no patient on a long-lasting dialysis. Table II and III.

Table-II: Illnesse's duration profile (n = 51)

Variables		*No*	*%*
Onset of DM in different age groups (years)	11-20	3	5.9
	21-30	8	15.7
	31-40	23	45.1
	41-50	9	17.6
	51-60	7	13.7
	61-70	1	2
Duration of DM (years)	0-10	4	7.8
	11-20	36	70.6
	>20	11	21.6
Onset of Dialysis in different age groups (years)	21-30	3	5.9
	31-40	3	5.9
	41-50	12	23.5
	51-60	22	43.1
	61-70	8	15.7
	71-80	3	5.9
Duration of Dialysis (months)	<12	18	35.3
	13-24	18	35.3
	25-36	8	15.7
	37-48	4	7.8
	49-60	1	2
	61-72	2	3.9
Duration spent from start of DM to start of Dialysis (years)	0-5	3	5.9
	6-10	12	23.5
	11-15	11	21.6
	16-20	18	35.3
	>20	7	13.7

27 (52.9%) of the clinic profession showed only diabetic nephropathy in patient without other problems. Type 2 DM Patients were 79.01%. Low-density lipoprotein (LDL) level in 1 patient was <130 mg / dl, while glucose level in 41 (80%) was <200 mg / dl. In dialysis 30 (58.8%) patients were the only treatment for dialysis.

Table-III: Different parameters of Diabetics with end stage renal disease

Variables	*MaleMean (Range)*	*FemaleMean (Range)*
Age of start of diabetes (years)	36.1(14-58)	39.4(16-66)
Diabetes mellitus duration (years)	16(3-30)	18.2(7-30)
Age of start of dialysis (years)	52.4(21-74)	55.2(33-76)
Dialysis duration (months)	22(3-72)	21.9(3-60)
Duration of start from diabetes to start of dialysis (years)	16.3(0-43)	15.9(1-30)

The glucose range was 148-193 mg / dl for patients with DM who were only dialysis. Almost all patients were hypertensive and antihypertensive. Table IV.

DISCUSSION:

one of the most serious complications of diabetes mellitus is end-stage renal disease requiring dialysis. The mean dialysis incidence rate on dialysis was 12 times higher than non-diabetics. In 2003-2005, diabetic patients accounted for 52% on maintenance dialysis. The mean incidence rate in the diabetic cohort was 10 times higher. Patients with diabetes had more comorbidities at the onset of dialysis and worse survival at 3 years (68 vs. 55%, p <0.0001). Dialysis incidence and prevalence rates in patients with diabetes mellitus are many times greater than cross-sectional studies confirming that sensitivity to end-stage renal disease due to non-diabetic kidney disease increases in individuals with Indo-Asian and African descent. In our study, as in Choi and Perneger's work, hypertension was a most common cause of comorbidity. Hypertension and Type 2 diabetes are commonly related conditions with increased renal disease and cardiovascular risk. The frequency of hypertension is higher in Type 2 than in local population, mainly in younger patients. Hypertension increases cardiovascular disease risk two folds suffered from type 2 diabetes, and hypertension and cardiovascular mortality is another factor.

Enough time to develop nephropathy and end stage renal failure. The average age of diabetic patients in our study is higher than that of Qari5 and Ma22. The mean duration of dialysis in our study in a similar manner was higher than that of Ma, Qari and Whorra (22.1 months). The mean age at onset of dialysis in our study was lower than Qari5 (46.5 years) and Foucan (60.6 years). Our study also showed significant dyslipidemia. In the study group (71.2%) it was understood that the presence of outpatient or other factors delayed the diagnosis, and diabetes mellitus was found to have begun hemodialysis within 1620 years. Dyslipidemia provides acceleration of diabetic nephropathy such as hypertension.

CONCLUSION:

In conclusion, ESRD in patients is caused by diabetes mellitus depending on the duration of diabetes with chronic HD. This can be caused by uncontrolled diabetes, hypertension and inadequate early detection. Aggressive management of hypertension with improved diabetes care and regular follow-up can reduce incidence and increases the diabetic nephropathy prognosis.

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