

Socioeconomic Status of Maintenance Hemodialysis Patients from a Tertiary Care Hospital in Lahore

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Abstract:

End stage renal disease is a huge burden for the health economies all across the world including wealthier nations. It is also a fact that the dialysis patients have in general poor economic status. This study from a large dialysis center in Lahore has looked at the socioeconomic status of the patients undergoing hemodialysis. This study represents in general the overall patient population in the dialysis units of Pakistan.

Key words: *Maintenance Hemodialysis, CKD, Chronic Kidney Disease, Hepatitis, Socioeconomic status.*

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PJKD 2019;(10):180-186

Introduction:

Chronic kidney disease (CKD) is the 16th leading cause of years of life lost worldwide. Appropriate screening, diagnosis, and management by primary care clinicians are necessary to prevent adverse CKD-associated outcomes, including cardiovascular disease, end-stage kidney disease, and death¹. Data from community based studies in Pakistan reveal an alarmingly high burden of chronic kidney disease. Approximately, 15% to 20% of persons 40 years of age or older have reduced estimated glomerular filtration rate². Such a high burden is consistent with high prevalence of diabetes and hypertension, the leading causes of end-stage renal disease (ESRD). Pakistan has an estimated 150 patients with ESRD per annum per million population; therefore, each year, we shall have 16 000 patients with ESRD³.

In the USA, at the end of 2012, there were 449,342 patients undergoing treatment for ESRD⁴. Incidence and prevalence of ESRD have increased in Saudi Arabia in the last three decades probably due to factors such as increase in life expectancy, rapid changes in lifestyle, urbanization and high population growth⁵. This study was conducted to assess various demographic factors such as age, Gender, duration of dialysis, socio-economic status and hepatitis B and C status of 95 patients undergoing hemodialysis in our center.

Subjects and Methods:

This study was conducted in one of hemodialysis centers of Lahore after informed consent from all the participants. In this cross-sectional descriptive study, we analyzed the clinical data in 95 patients of ESRD, who were undergoing HD. We retrieved most of the information from medical records and interview of the patients.

Statistical Analysis:

Variables were reported as mean, range and standard deviation. Analysis was conducted by using SPSS 21 and Microsoft Excel. Figures and tables were use to describe all variables.

Results:

In this study, total numbers of patients was 95 undergoing hemodialysis in our center. In the data two patient's duration of dialysis was missing. Age of all patients ranged from 15 years to 76 years. Mean age with standard deviation was 45.11 ± 14.35 years as shown in table 1. Mean duration of dialysis was 35.69 ± 32.07 months.

Table 1:

	Age (Years)	Duration of dialysis (Months)
Mean \pmS.D	45.11 \pm 14.35	35.69 \pm 32.07
Range	15-76	1-156
Total	95	93

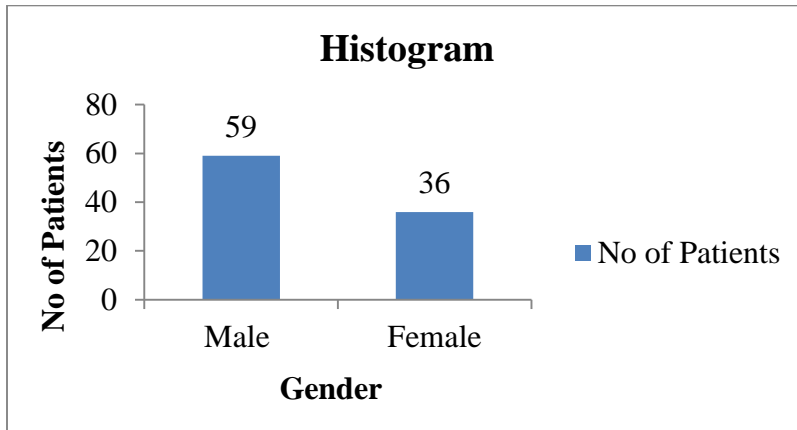
62.11% (n=59) patients were male and 37.89% (n=36) were female as shown in table 2 and figure 1.

Most of the patients 50.53% (n=48) belonged to low socio-economic status, while 45.26% (n=43) were from middle class and 4.21% (n=4) were of high socio-economic status as mentioned in table 3 and figure 2.

Table 2:

Gender	No of Patients (n=95)	Percentage
Male	59	62.11%
Female	36	37.89%

Figure 1:

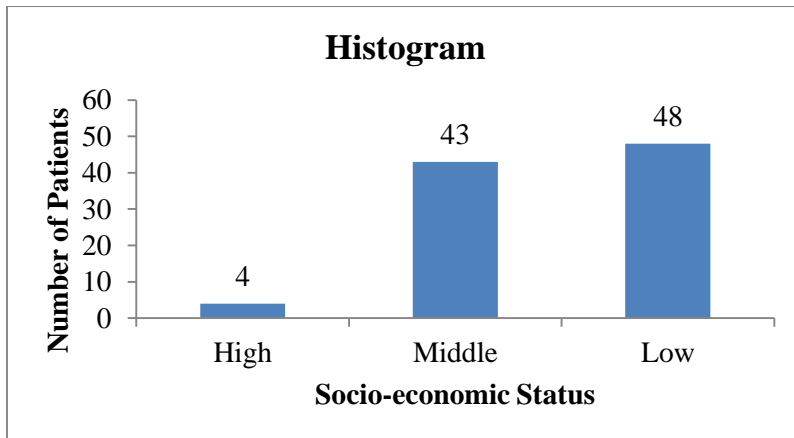


Majority (n=64, 32.70%) of patients had duration of dialysis between 15 days to 15 months. Only one patient out of 93 patients had the duration of dialysis exceeding 140 months, as shown in table 4 and figure3.

Table 3:

Socio-economic Status	No of Patients (n=95)	Percentage
High	4	4.21%
Middle	43	45.26%
Low	48	50.53%

Figure 2:



It is evident that majority of patients 62.11% (n=59) were HCV negative, 27.37% (n=26) were HCV positive and total number of HBV positive were (n=10) 10.53% shown in table 5 and figure 4.

Table 4:

Duration(Months)	No of Patients (n=93)	Percentage
15-20	40	43.01%
21-40	21	22.58%
41-60	16	17.20%
61-80	3	3.23%
81-100	10	10.75%
101-120	2	2.15%
141-160	1	1.08%

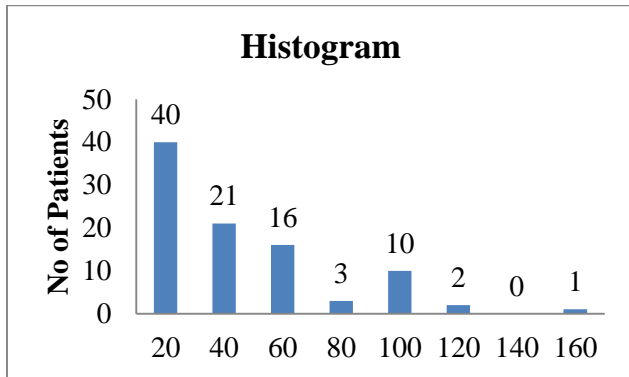
Table 5: Hepatitis serology status among 95 maintenance hemodialysis patients.

Hepatitis B&C Status	No of Patients (n)	Percentage
HCV -	59	62.11%
HCV +	26	27.37%
HBV+	10	10.53%

Discussion:

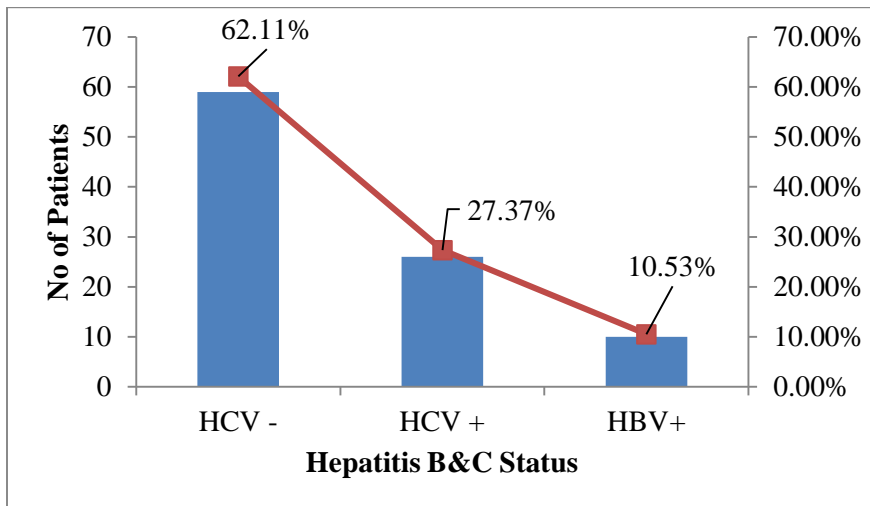
The evolution of renal replacement therapy in any country and its associated problems can only be understood by keeping the socio-economic problems of that country in mind. The annual incidence of end-stage renal disease (ESRD) in Pakistan is estimated at about 100 per million populations⁶. A large number of patients do not have access to health-care centers because of an inadequate health infrastructure. A conservative estimate is that less than 25% of the ESRD populations have access to renal support in the form of dialysis and transplantation⁶. According to our study mean age of patients on dialysis was 45.11 years which is less as compared to mean age of dialysis patients in Egypt (53.1 year)⁷. As compared to other developed countries as in USA mean age was 59.2⁸ and in Europe it was 60.3⁹. It shows that we need to improve our healthcare system in Pakistan. As Pakistan is a developing country, nephrology services are in the state of establishment. In this decade, there is improvement in the awareness about kidney diseases in Pakistan¹⁰.

Figure 3: Bar diagram showing the duration of hemodialysis among 94 maintenance hemodialysis patients.



In our study most of the patients 43.01% (n=40) had duration of dialysis less than 20 months. Majority of the patients 62.11% (n=59) in our study were male, male predominance among the ESRD population is a global phenomenon, as 56% males in USA⁸ and 60% males in UK¹¹ have ESRD. Our study also consolidated the fact that kidney diseases are more prevalent in poor population with low socio-economic status as compared to high socio-economic status population. Socio-economic status is often measured as a combination of education, income, and occupation. It is commonly conceptualized as the social standing or class of an individual or group. Furthermore, an examination of SES reveals inequities in the access to and distribution of resources¹². Previous studies have indicated that the incidence of ESRD is related inversely to SES¹³.

Figure 4: Bar diagram showing the Hepatitis serology status among 95 maintenance hemodialysis patients.



The prevalence of HCV and HBV was 27.37% and 10.53% respectively. The worldwide prevalence of HCV infection among HD patients varies widely, with estimates ranging from 5% to 60% depending on geographic location¹⁴. It was estimated that among dialysis population prevalence of HCV infection was 21% in Jordan¹⁵, 6.25% in Italy¹⁶ which was low as compared to our center. Number of HBV positive patients from our center were similar to the data collected from two other centers of Pakistan, prevalence of HBV in dialysis patients of SIUT Karachi and Islamabad was 10.2% and 12.4% respectively¹⁷, but in comparison to other world HBV prevalence is high as it was 6.3% in Thailand¹⁸ and 5.9% in Jordan¹⁹.

Limitation of our study include, lack of other data including underlying disease states and comorbidities. Our future analysis and prospective followup of our patients will help us to evaluate the morbidity and mortality pattern in this younger dialysis population.

Conclusion:

In conclusion most of the patients in our hemodialysis center were young males with low socioeconomic status. In comparison to the international data, there was high prevalence of hepatitis B and C infection in our study population.

Conflict of interest: None

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