

Incident Patients Enrolled in the Month of December 2023 for maintenance hemodialysis– A Snapshot survey.

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Abstract:

Introduction: Chronic kidney disease progressing to hemodialysis is a significant health care burden. Since no formal registry including all incident hemodialysis patients is nonexistent. This snapshot survey was conducted to document new enrolling patients in the hemodialysis units across Pakistan.

Methods: a simple survey was devised to enquire about the new enrollments for maintenance dialysis in each unit. Age and gender and geographical location of the patients was asked.

Results: A total of 995 patients were enrolled in different dialysis units during the month of December 2023. Majority were males and in the age range less than 40 years.

Conclusion: A significant number of patients are being enrolled for maintenance dialysis each month, highlighting the increasing burden of CKD patients progressing to ESKD. Larger studies and national hemodialysis registry may help in understanding the actual burden on health budget.

Key words: End stage kidney disease, ESKD, hemodialysis, non-communicable disease

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Introduction

Chronic Kidney disease (CKD) is a major non-communicable disease contributing to mortality worldwide. Diabetes Mellitus (DM) remains the leading risk factor for CKD followed by Hypertension.¹⁻³ Treatment options available for patients having End Stage Kidney Disease (ESKD) include hemodialysis (HD), peritoneal dialysis (PD), and kidney transplant. The worldwide prevalence of ESKD varies greatly and is increasing day by day. The ESKD prevalence reached 1981 per million population in the United States of America (USA).⁴ No such registry or data system is actively working to calculate the incidence of new HD patients locally. This study aims to find the incidence of new CKD 5 patients being initiated on hemodialysis in December 2023 in Pakistan.

Method

Study Design Descriptive study based on historical records

Approval from the Institutional Review Board (IRB) was obtained. Data was collected retrospectively. The total number, age, and gender of the patients initiating on hemodialysis in different centers were collected with the help of a survey circulated to almost all nephrologists via WhatsApp group message in Pakistan and response documented in the google form.

Inclusion Criteria

All CKD5 patients presenting for dialysis initiation in different hemodialysis centers in Pakistan

Exclusion Criteria

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Patients already on dialysis or switching dialysis centers while being on dialysis.

Statistics: simple frequency, and descriptive statistics were used to present the data.

Results

A total of 20 hemodialysis units responded to the questionnaire out of more than 200 centers in Pakistan, a response rate of less than 10% only. The total number of patients presenting for hemodialysis initiation in various centers in Pakistan was 995 out of which 756(76%) were male and 239(24%) were female. City-wise distribution according to the available data showed the highest number of patients in Lahore city. Age-wise distribution showed the highest number of patients 558(56%) in the age range of 18 to 40 years compared to 371(37%) in the age range 40 to 60 years and 66(7%) in the age range above 60 years.

Figure 1: Geographical representation of 995 patients initiating hemodialysis in the month of December 2023.

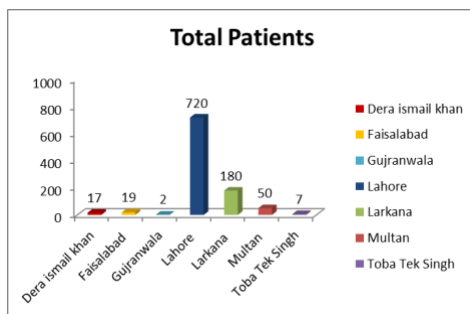
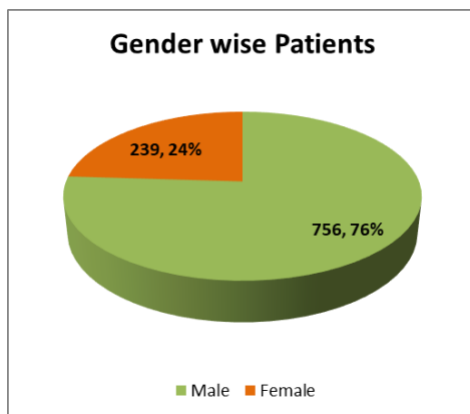


Figure 2: Gender distribution of 995 patients initiating hemodialysis in the month of December 2023.



Discussion

In our snapshot analysis, incident patients during the single month of December 2023 enrolled for maintenance hemodialysis was 995. Documented number of dialysis units in Pakistan as recorded in the Pakistan Renal Data System (PKRDS) is 148 hemodialysis centers, having almost 5600 hemodialysis patients.⁵ In reality this is still an underestimation in the PKRDS and the actual number of hemodialysis units in Pakistan are more than twice this number. Our study therefore represents only 13.5% of the units included in the PKRDS and almost 7-10% of all the hemodialysis units in Pakistan. If we extrapolate the number of possible incident patients then it is likely that more than 10,000 patients were enrolled in the month of December 2023. If we further extrapolate this estimate to the 12 months then

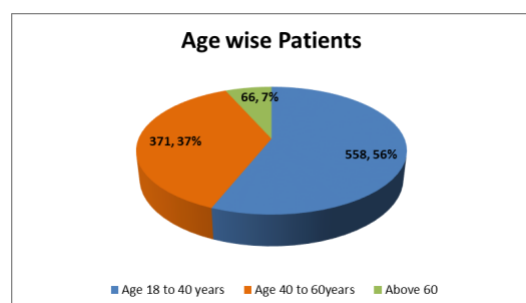
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even with a cautious estimate >100,000 new patients are being added to the hemodialysis units for maintenance dialysis every year. This is quite alarming and highlights the severity of the matter.

The incidence of ESKD is increasing globally due to the increasing prevalence of Diabetes and Hypertension.⁶ A systematic review estimated that about two-thirds of all patients with kidney failure died without receiving dialysis in 2010.⁷ The increasing need for kidney replacement therapy and the non-availability of resources pose a threat to the healthcare system in low to middle-income countries.

ESKD data is not available from large part of developing countries and hence it is not possible to know the exact burden of disease in our region.⁸ An important aspect of our study is that 56% new patients initiating hemodialysis were between 18-40 years. This has been highlighted in previous studies from Pakistan.⁹⁻¹²

Figure 3: Pie chart showing age distribution of 995 patients initiating hemodialysis in the month of December 2023.



PKRDS was initiated in 2019 by Pakistan Society of Nephrology (PSN) a brainchild of Dr Waqar Ahmad and it has helped in understanding and analyzing the hemodialysis population albeit only a portion of actual numbers in Pakistan. PSN is further going to strengthen the existing PKRDS registry and hopefully involve majority of hemodialysis units all over Pakistan.

Limitations of our study include a poor response of almost 10% and the information submitted were used as submitted. This may lead to a bias towards underestimation, nevertheless a prelude to many other studies to document the true incidence of CKD especially dialysis patients.

Conclusion Our study highlights the ever increasing burden of maintenance hemodialysis patients. It also highlights the lack of readily available data for the researchers, government officials and policy makers to plan a long term strategy for dealing with noncommunicable diseases like CKD. We hope that this study will result in more such studies to probe the actual disease dynamics including CKD with the final development of registries and databases of diseases.

Conflict of Interest: None

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