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Title- A study to assess clinical profile and treatment outcome of patients with chronic renal failure admitted at Dr. Vitthalrao Vikhe Patil, Pravara Rural Hospital, Loni(bk).

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ABSTRACT

Background of study: Chronic renal failure (CRF) is a devastating medical, social, and economic problem for patients and their families. There is no data on the true incidence and prevalence of chronic renal failure in the developing world. Delayed diagnosis and failure of institution of measures to slow progression of renal failure result in a predominantly young end-stage renal disease (ESRD) population. Chronic diseases have become a major cause of global morbidity and mortality even in developing countries. The burden of chronic kidney disease (CKD) in India cannot be assessed accurately. The approximate prevalence of CKD is 800 per million population (pmp), and the incidence of ESRD is 150-200 pmp. CRF is a significant public health concern in many countries, including India, with a rising prevalence and increasing burden on healthcare systems. Understanding the clinical characteristics of CRF patients admitted to hospitals can provide valuable insights into the severity of the disease and the specific challenges faced by this subgroup. Hospitalized CRF patients often require acute medical interventions, dialysis, or other specialized treatments, indicating the need for a comprehensive understanding of their treatment outcomes.

Objectives: To assess the clinical profile and treatment outcome of patients with Chronic Renal Failure. To compare treatment outcome of patients of Chronic Renal Failure with selected socio-demographic variables.

Material and methods: A descriptive study with cross sectional approach was used to assess clinical profile and treatment outcome of patients with chronic renal failure admitted at DRVVPPRH, Loni. The sample consisted of 60 patients diagnosed with chronic renal failure. Sampling techniques used for the present study was non-probability method, purposive sampling technique. A proforma was prepared to collect the data. Descriptive and inferential statistics were used to analyze the data according to objectives.

Results: The demographic data showed that (40%) of the study subjects were in the age group of above 65 years, (70%) were male, (30%) study subjects were in the group of primary educated, (50%) of the study subjects were farmer by occupation and (60%) of the study subjects were in the category of 3-5 years of duration of illness. General weakness was noted to be the most widespread symptom, present in (90%) of subjects, Puffiness of face (80%) was the most common specific symptom seen. Dysuria, sleep disturbances and weight loss, in that order, were the least commonly seen, noticed only in (7%), (9%) and (10%) of the subjects, respectively. Signs of chronic Renal Failure were tabulated, Pallor was seen inevitably in (92%) of the subjects followed by pedal edema was noted in (68%) and hypertension in (58%) of subjects, nail changes was the least common sign observed. Majority of the subjects studied fell in the GFR bracket of 15-29.9 ml/min, it classifies them into CKD stage 4 (35%) which was followed by a close second being CKD stage 5 (33%), Stage 0 and stage 2 saw the least number of subjects, being approximately 4% each. The findings depicts that all patients 60(100%) had good recovery and discharge/transfer.

Key words: Clinical Profile, Treatment outcome, Chronic Renal Failure

I Introduction

Chronic kidney disease (CKD) is a general term for heterogeneous disorders affecting kidney structure and function. Disease and management are classified according to stages of disease severity, which are assessed from glomerular filtration rate (GFR) and albuminuria, and clinical diagnosis (cause and pathology). Chronic kidney disease can be detected with routine laboratory tests, and some treatments can prevent development and slow disease progression, reduce complications of decreased GFR and risk of cardiovascular disease, and improve survival and quality of life.[1]

Chronic kidney disease is defined as a reduced glomerular filtration rate, increased urinary albumin excretion, or both, and is an increasing public health issue. Prevalence is estimated to be 8-16% worldwide. Complications include increased all-cause and cardiovascular mortality, kidney-disease progression, acute kidney injury, cognitive decline, anemia, mineral and bone disorders, and fractures. Worldwide, diabetes mellitus is the most common cause of chronic kidney disease, but in some region's other causes, such as herbal and environmental toxins, are more common.[2]

In the past decade, kidney disease diagnosed with objective measures of kidney damage and function has been recognized as a major public health burden. The population prevalence of chronic kidney disease exceeds 10%, and is more than 50% in high-risk subpopulations. Collaboration across general and specialized health-care professionals is needed to fully address the challenge of prevention of acute and chronic kidney disease and improve outcomes.[3]

Chronic kidney diseases have become a major cause of global morbidity and mortality even in developing countries. The burden of chronic kidney disease in India cannot be assessed accurately. The approximate prevalence of CKD is 800 per million population (pmp), and the incidence of end-stage renal disease (ESRD) is 150-200 pmp. The most common cause of CKD in population-based studies is diabetic nephropathy.[4]

Chronic renal failure (CRF) is a debilitating condition responsible for high morbidity and mortality and is a financial burden on government and society. Because of its costs and the complexity of its treatment, proper care is available to very few patients in India.[5]

The incidence of ESRD is likely to be higher than that reported from the developed world, with chronic glomerulonephritis being the most common cause, accounting for more than one third of patients, while diabetic nephropathy accounts for about one fourth of all patients in India. Patients are generally younger (mean age 42 years) at the time of detection of ESRD.[6]

Literature reveals that the CRF is a significant public health concern in many countries, including India, with a rising prevalence and increasing burden on healthcare systems. Understanding the clinical characteristics of CRF patients admitted to hospitals can provide valuable insights into the severity of the disease and the specific challenges faced by this subgroup. Hospitalized CRF patients often require acute medical interventions, dialysis, or other specialized treatments, indicating the need for a comprehensive understanding of their treatment outcomes. Therefore, this study was undertaken to assess clinical profile and treatment outcome of patients with chronic renal failure.

I.1 Statement of problem

A study to assess clinical profile and treatment outcome of patients with chronic renal failure admitted at DRVVPPRH, Loni(bk).

I.2 Objectives

1. To assess the clinical profile and treatment outcome of patients with Chronic Renal Failure.
2. To compare treatment outcome of patients of Chronic Renal Failure with selected socio-demographic variables.

II Methodology

II.1 Research design and approach

A non-experimental; descriptive study design with cross-sectional approach was used for the present study.

II.2 Setting of the study

The study was conducted in medicine in patient department of DRVVPPRH, Loni. DRVVPPRH, Loni is a 1275 bedded multispecialty trust hospital at Loni village.

II.3 Sample

Patients with Chronic Renal Failure who fulfils inclusion and exclusion criteria.

II.4 Sample size

Sample size for present study was 60.

II.5 Sampling technique

Non-probability method, purposive sampling technique was used for the present study.

II.6 Sampling Procedure

Samples were screened for eligibility of inclusion and exclusion criteria. Patients eligible and willing to participate were included in the study.

II.7 Inclusion and Exclusion criteria

Inclusion criteria: The patient who are;

- admitted to the hospital for management of CRF.
- with complete medical records available for data extraction.
- received at least one treatment modality for CRF (e.g., medications, dialysis, transplantation).
- in a range of disease severity (mild to severe) to capture a diverse clinical profile.
- able to understand English, Marathi.

Exclusion criteria: The patient who are;

- brought in dead.

II.8 Tools and techniques

Interview method was used to collect the data from the participants, which consists of following sections;

Section A: It consists of socio-demographic variables of the participants namely Age, Gender, Education, Occupation, Duration of illness with CRF.

Section B: It consists of clinical profile of patients with Chronic Renal Failure**.**

Section C: It consists of treatment outcome of patients with Chronic Renal Failure

II. 9 Data collection procedure

Ethical aspects

a) **Ethical clearance:** Proposal was presented before Institutional Ethics Committee of PIMS(DU), Loni and ethical clearance was obtained.
b) **Permission from concerned authority:** Written permission was obtained from Medical Superintendent of the DRVVPPRH, Loni Bk.
c) **Informed written consent:** The study participants were contacted on one-on-one basis and explanation regarding study objectives, confidentiality of their data, their willingness to participate and right to withdraw from the study were provided to them. Informed written consent was obtained from participants of the study.

Data collection: After self-introduction and informed written consent the data was collected from the participants using interview method.

II.10 Data Analysis

Data was coded in the Microsoft excel sheet. Descriptive and inferential statistics were used to analyse the data according to objectives. Frequency and percentage were used to analyse the data regarding socio-demographic

variables, clinical profile of the patients and treatment outcome of the patients and data was presented in form of table.

III Results

Assessment of socio-demographic characteristics of the study participants

Majority of the study participants (40%) were in age group above 65 years of age followed by percentage (30%) were in age group 45 to 64 years. Gender wise distribution shows that (70%) patients were male and 30% were female. Education wise distribution shows that (30%) of the study participants accounted for primary education followed by 20% of the respondents are illiterate. Occupation wise distribution shows that (50%) of the study participants had agriculture occupation followed by 20% were home maker. Distribution according to duration of illness shows that (60%) of the participant's duration of illness was 3 to 5 years, followed by 20% of the participant's duration of illness was 1 to 3 years.

Description of the clinical profile of patients with Chronic Renal Failure

Table 1: Distribution of the subjects based on symptoms.

SN	Symptoms	Present/ Absent	Frequency	Percentage
1	General weakness	Absent	6	10
		Present	54	90
2	Puffiness of face	Absent	12	20
		Present	48	80
3	Nausea	Absent	34	57
		Present	26	43
4	Vomiting	Absent	34	57
		Present	26	43
5	Oliguria	Absent	41	68
		Present	19	32
6	Dysuria	Absent	51	85
		Present	9	15
7	Sleep disturbances	Absent	50	83
		Present	10	17
8	Weight loss	Absent	49	82
		Present	11	18
9	Loss of appetite	Absent	25	42
		Present	35	58

Table 1 shows that, General weakness was noted to be the most widespread symptom, present in 90% of subjects. However, this was a non-specific symptom and did not hold much significance. Puffiness of face (80%) was the most common specific symptom seen. Dysuria, sleep disturbances and weight loss, in that order, were the least commonly seen, noticed only in 7%, 9% and 10% of the subjects, respectively.

Table 2: Distribution of the subjects based on signs.

SN	Signs	Present/ Absent	Frequency	Percentage
1	Abdominal swelling	Absent	47	78
		Present	13	22
2	General swelling	Absent	54	90
		Present	6	10
3	Pallor	Absent	5	8
		Present	55	92
4	Pedal edema	Absent	19	32
		Present	41	68
5	Hypertension	Absent	25	42
		Present	35	58
6	ESM	Absent	40	67

		Present	20	33
7	B/L crepitation	Absent	40	67
		Present	20	33
8	Pulmonary oedema	Absent	40	67
		Present	20	33
9	Ascites	Absent	44	73
		Present	16	27
10	Pleural effusion	Absent	50	83
		Present	10	17
11	Nail changes	Absent	55	92
		Present	05	8

Table 2 shows that, Signs of chronic Renal Failure it was noted that pallor was seen inevitably in 92% of the subjects. Apart from this, pedal edema was noted in 68% and hypertension in 58% of subjects, which made them the second and third most common signs seen in chronic Renal Failure. Nail changes of chronic Renal Failure that may be attributed to hypoalbuminemia was the least common sign.

Table 3: Distribution of the subjects based on GFR

SN	GFR	Frequency	Percentage
1	>90	3	5
2	60-90	3	5
3	30-59.9	13	22
4	15-29.9	21	35
5	<15	20	33
Total		**60**	**100**

Table 3 shows that, Majority of the subjects studied fell in the GFR bracket of 15-29.9 ml/min. This classifies them into CKD stage 4 (35%). This was followed by a close second being CKD stage 5 (33%). Stage 0 and stage 2 saw the least number of subjects, being approximately 4% each.

Table 4: Distribution of the subjects based on creatinine levels.

SN	Creatinine (mg/dl)	Frequency	Percentage
1	<5	40	67
2	5.1-12	15	25
3	>12	5	8
Total		**60**	**100**

Table 4 shows that, most of subjects (67%) studied had a moderate elevation of creatinine levels, with the serum creatinine levels remaining below 5 mg/dl. Severely raised creatinine >12 mg/dl was only seen in 8% subjects.

Table 5: Distribution of the subjects based on blood urea levels.

SN	Blood urea levels	Frequency	Percentage
1	<50	14	23
2	50-150	40	67
3	150.1-250	4	7
4	>250	2	3
Total		**60**	**100**

Table 5 shows that, Blood urea levels of 50-150 mg/dl was seen in majority of the patients (67%) followed by the urea being 250 mg/dl were rare and seen in about 3% of subjects only.

Table 6: Distribution of the subjects based on urine albumin.

SN	Urine albumin	Frequency	Percentage
1	1 +	27	45
2	2 +	4	7
3	3 +	5	8
4	Nil	12	20
5	Traces	12	20
Total		**60**	**100**

Table 6 shows that, Urine albumin levels showing 1+ was most frequently noted, in about 45% subjects. 20% subjects showed traces and 20% showed nil urine albumin.

Table 7: Distribution of the subjects based on hemoglobin.

SN	Hemoglobin (mg/dl)	Frequency	Percentage
1	<6	2	3
2	6-10	41	69
3	>10	17	28
Total		**60**	**100**

Table 7 shows that, anemia is seen more often in patients of chronic renal failure patients. Severe anemia of Hb <6 mg/dl was seen in 3% of the subjects.

Description of treatment outcome of patients with chronic renal failure

Table 8: Description of the percentage of chronic Renal Failure patients according to treatment outcome

SN	Outcome of chronic Renal Failure patients	Freq (%)
1	Good recovery/ discharge/transfer	60 (100)
2	Death	0(0)

Table no 8 depicts that, all (100%) participants had good recovery and discharge/transfer. Hence it can be interpreted that all chronic Renal Failure patients had good recovery

IV Discussion

The present study was undertaken to assess clinical profile and treatment outcome of patients with chronic renal failure. The study reveals that majority of the study participants (40%) were in the age group of above 65 years, (70%) were male, (30%) were primary educated, (50%) were belonged to agriculture occupation, (60%) were in the category of 3-5 years of duration of illness.

Findings related to clinical profile of patients with Chronic Renal Failure

Findings of the present study reveals the General weakness was noted to be the most widespread symptom, present in 90% of subjects. Puffiness of face (80%) was the most common specific symptom seen. Dysuria, sleep disturbances and weight loss, in that order, were the least commonly seen, noticed only in 7%, 9% and 10% of the subjects, respectively. Pallor was seen inevitably in 92% of the subjects. Apart from this, pedal oedema was noted in 68% and hypertension in 58% of subjects, which made them the second and third most common signs seen in chronic Renal Failure. Majority of the subjects studied fell in the GFR bracket of 15-29.9 ml/min. This classifies them into CKD stage 4 (35%). This was followed by a close second being CKD stage 5 (33%). The study showed that most of subjects (67%) studied had a moderate elevation of creatinine levels, with the serum creatinine levels remaining below 5 mg/dl. Severely raised creatinine >12 mg/dl was only seen in 8% subjects. Blood urea levels of 50-150 mg/dl was seen in majority of the patients (67%) followed by the urea being 250 mg/dl were rare and seen in about 3% of subjects only. Urine albumin levels showing 1+ was most frequently noted, in about 45% subjects. 20% subjects showed traces and 20% showed nil urine albumin.

Anaemia is seen more often in patients of chronic renal failure patients. Severe anemia of Hb <6 mg/dl was seen in 3% of the subjects.

Findings related to treatment outcome of patients with Chronic Renal Failure

Percentage of chronic Renal Failure patients with their outcome depicts that all patients 60 (100%) had good recovery and discharge/transfer. Hence it can be interpreted that all chronic Renal Failure patients had good recovery.

V Conclusion

The study findings have shown that majority (35%) of the subjects studied fell in the GFR bracket of 15-29.9 ml/min, it classifies them into CKD stage 4 and all (100%) of the study subjects with Chronic Renal Failure had good recovery.

Declaration by Authors

Ethical approval: The present study was approved by the Institutional Ethics Committee of Smt. Sindhutai Eknathrao Vikhe Patil College of Nursing of Pravara Institute of Medical Sciences (DU), Loni. [Ref. No. PIMS/SSEVPCON/2023/03/14 dated, 10/06/2022.]

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