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Original Research Article

Clinical Profile and Etiological Spectrum of Patients with Acute Kidney Injury at a Tertiary Care Hospital

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Abstract

Introduction: Acute kidney injury is defined by a sudden loss of excretory kidney functions as a manifested by severe azotaemia and often by oliguria or anuria. Material and methods- in this study in age more than 12 years and patients admitted to medicine ward and intensive care unit with acute kidney injury were enrolled. We conducted an observational single centre study from June 2025 to December 2025 with 50 patients. **Observations:** out of 50, 32 were males and 18 were females. In this study, common etiologies were acute gastroenteritis(20%), snake and unknown bite (18.8%), infective cause (15.8%) and poisoning and drug induced (15.2%).

Conclusion: Decreased urine output, swelling of over face and lower limb and vomiting were common presentation of Acute kidney injury in this study. Highest incidence of Acute kidney injury was attributed to medical disorders consisting of mainly septicemia, acute gastroenteritis, multiple organ dysfunction syndrome, snake bite and Nephrotoxic drugs.

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Introduction

Acute Kidney injury is defined by a sudden loss of excretory kidney function as a manifested by severe azotaemia and often by oliguria or anuria. Acute kidney injury depicts the abrupt decline in nephritic perform essentially occurs over the course (hours to days) and ends in retention of metabolic waste products and dysregulation of fluid, electrolytes, and acid base physiological state. According to Kidney Disease Improving Global Outcomes (KDIGO) 2012-Acute kidney injury (AKI) is defined by presence of any one of the followings.

- Increase in serum creatinine by ≥0.3mg/dl (≥26.5µmol/l) within 48 hours.
- Increasein serum creatinine to ≥1.5 time's baseline which is known or presumed to have occurred within the previous seven days.
- Urine volume <0.5 ml/kg/hr for more than six hours.

Material and Methods

This was an observational single centre study conducted in department of general medicine GMC PALI attached Shree Bhangur Hospital Pail, from June 2025 to December 2025, with 50 patients to chariacterize Acute kidney injury.

Inclusion Criteria

- Patients of both sex more than 12 years of age.
- Patients with increase serum creatinine of 0.3 mg/dl from the baseline or Elevation of >50% from the baseline.
- Patients with urine output <0.3 ml/kg/hr for 24 hours or anuria for 12 hours.

Exclusion Criteria

- Patients suffered with chronic renal disease and other medical conditions.
- Patients with no consent for participation.
- Pregnant or lactating mothers.

Data Collection: Information on habits and previous disease history of the study participants were acquired through interviewed based questionnaire Method. After detailed clinical history, patients was subjected to clinical examination, routine. Blood investigation including blood urea, serum Creatinine, urine routine, ultrasound abdomen, Serology for laptospirosis, enteric fever, peripheral smear for malaria parasite

and other relevent investigation and values interpreted.

Data Statics: The data was analysed by using statical software (SPSS version 19.0) mean and standard deviation Were calculated for each individual group. A Probability value (p) of ≤ 0.05 was considered to be statical significance.

Results

Gender Distribution: Out of 50, 32 were males and 18 were females. In this study male:female ratio was 2:1. Male (66%) sex was predominately affected in this study. Sex difference doesn't show any significant difference in the outcome.

Age Distribution: In this study group most of them fall within Age limit of more than 55 years, minimum age group in this study is 13 years and Maximum age group in this study is 70years.

Most commonly affected age group in this study was between the 56-70 years (22%) Followed by 41-55 years (14%). Least Affected age group in this study was 13-20 Years (6%).

Table 1: Age Distribution

Age Groups (Years)	No of Patients
13-25	3 (6%)
26-40	11 (22%)
41-55	14 (28%)
56-70	22 (44%)

Table 2: Clinical Symptomatology

Parameters	Frequency %
Vomiting	29
Decreases urinary output	38
Swelling	37
Loose motions	28

All 50 patients divided according to common presenting symptoms. We noticed that decrease urine output, swelling over feet and face and vomiting was most common presenting symptoms comprising of 38%, 37% and 29% respectively.

Table 3: Causes of Pre-Renal Acute Kidney Injury

Causes	Frequency %
Acute gastroenteritis	32
Hepatic causes	15
Cardiac causes	15
Infective causes	26

Table 4: Causes of Renal Acute Kidney Injury

Causes	Frequency %
Bite	28
Poisoning	14
Drugs	7
Multiple organ dysfunction syndrome	10
Other	2

Table 5: Causes of Post-Renal Acute Kidney Injury

Causes	Frequency %
Bladder outlet obstruction	2
Benign prostate hypertrophy	5
Carcinoma of cervix	1
Uterine prolapsed	1

Table 6: Types of Renal Failure

Types of Renal Failure	No. of Patients
Pre-renal	27 (53%)
Renal	20 (41%)
Post-renal	3 (5%)
Total	50

Most common cause of pre-Renal Acute Kidney Injury in this study was Acute gastroenteritis (AGE) followed by infections. Dehydration was seen in all acute Gastroenteritis related Acute Kidney Injury patients.

Most common cause of renal Acute Kidney Injury in this study was snake bite and unknown bite followed by poisoning.

Most common cause of post renal Acute Kidney Injury was Benign prostate Hypertropy (BPH) in this study, followed by bladder obstruction.

Type of Renal Failure

- In this study out of 50 patients,27 (53%) patients had pre-renal while 20 (41%) patients had Instrinsic type of Renal Failure and only 3 (5%) patients had Post Renal type of Renal Failure.
- As mentioned in various literature in this study also had pre-Renal type of renal failure constitutes a major type of acute kidney injury.

Discussion

- Clinical symptomatology we found in this study are compound with other studies done by Rajesh K et. Al, which showed that oliguria and vomiting was seen in 82% and 90% of patients respectively, may be due to Diabetes and CKD cases included. Patel U al4. Study found that edema was seen in 28.5% of patients.
- Similarly, a significantly decline in diarrhoea related Acute Kidney Injury has been also reported from India by Prakash J et. al.
- Tropical infections including Dengue and malaria were also responsible for Acute Kidney Injury cases in this study. Early diagnosis and adequate treatment was taken by patients so incidence of tropical infections induced Acute Kidney Injury is lower in our area. In this study other common etiology is poisoning (14%) similar to Patel U et. al study.
- Cardiac causes such as myocardial infarction, heart block, CCF, ARDS with respiratory failure were the causes of Acute Kidney Injury in 15% of our patients similar to study done by Vikrant S et al.
- In the current study, 7% of patients developed Acute Kidney Injury secondary to nephrotoxic drugs. The variety of drugs associated with Acute Kidney Injury in this study show consistence with the changing epidemiology of drug-related Acute Kidney Injury observed by Prakash J et al and Vikrant S et al.
- Obstructive uropathy was secondary to renal or ureteric or bladder calculi, carcinoma cervix, uterine prolapse and prostatic enlargement.

Conclusion

- Finally, to conclusion Timely diagnosis and the management of this disease condition confer a favourable prognosis to the patient.
- The progression of Acute Kidney Injury leads to increased hospital mortality and increased length of hospital stays that might prove wastage of limited resources in a setting like India. Further studies on large scale are required to prove its significance.

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