



## A Study of Clinical Profile of Acute Kidney Injury in a Tertiary Hospital, Visakhapatnam

Authors

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### Abstract

**Background and Objectives:** Acute kidney injury is a common clinical condition encountered in our hospital. This study is an attempt to evaluate the clinical profile of acute kidney injury in 50 patients admitted to King George Hospital.

**Method:** This prospective study was done at King George hospital, over a period of 8 months. This study included fifty patients with clinical and laboratory evidence of acute kidney injury in patients admitted to our hospital.

**Results:** 32 male and 18 female patients with mean age of 48.01 years. Oliguria and vomiting were common presenting symptoms. Other common symptoms were fever, loss of appetite, jaundice and loose stools.

The etiological factors associated are malaria, septicemia and drug induced nephrotoxicity, Leptospirosis, Snakebite and Acute Gastroenteritis. Two patients had obstructive uropathy.

**Conclusion:** We observed oliguria and vomiting were common clinical features. Malaria was predominant etiological factor in our patients and falciparum malaria was more common than vivax malaria. However all these patients were treated conservatively. In our study, 90% of patients were survived. 74% of patients were treated conservatively and 26% of patients underwent hemodialysis.

### Introduction

Acute kidney injury is a syndrome characterized by rapid (hours to weeks) decline in glomerular filtration rate (GFR) and retention of nitrogenous waste products such as blood urea nitrogen (BUN) and creatinine and perturbation of extra cellular fluid volume and electrolyte and acid base homeostasis<sup>1,2</sup>. AKI is a common clinical condition in hospitalized patients.<sup>3</sup> The incidence of AKI in hospitalized patients is between 2% and 5%.<sup>4</sup> The most common causes of AKI are; volume depletion, hypotension, aminoglycoside

antibiotics and radiocontrast agents. Major surgery is also an important cause of AKI. Advanced age, liver diseases, underlying renal insufficiency and diabetes have been implicated as risk factors for the development of AKI.<sup>4</sup>

### Aims and Objectives

AKI is a common clinical condition encountered in King George Hospital. This study is an attempt to analyse the common causes and clinical manifestations of acute kidney injury in fifty hospitalized patients at King George Hospital.

## Materials and Methods

This is a prospective study of patients with acute kidney injury admitted to King George Hospital between January 2020 to August 2020.

**Study Protocol:** Patients of both sexes above 18 years were included in this study. All these patients were studied with a detailed history, general physical examination, systemic examination and investigated as per the proforma. All the patients were followed up till the time of discharge.

### Selection Criteria

#### A). Inclusion Criteria

All inpatients aged >18years with clinical and / or biochemical evidence of acute renal failure.

#### B). Exclusion Criteria

- Patients with pre-existing chronic renal failure or chronic renal disease.
- Patients aged below 18years.

### Results and Analysis

Out of 50 cases studied, 32(64%) patient were males and 18(36%) were females.

Out of 50 cases, 46(92%) patients had vomiting, 40(80%) had oliguria, 36(72%) patients had history of fatigue. Fever was seen in 35 (70%) cases and 16(32%) patient had loose stools.

### SIGNS AND SYMPTOMS

Symptoms and Signs	Number	Percentage
Vomiting	46	92.0
Oliguria	40	80.00
Fatigue	36	72.0
Fever	35	70.00
Loose stools	16	32.0
Odema	14	28.0
Jaundice	12	24.0

Out of 50 patients, 6(12%) had history of nephrotoxic drug intake. Out of 50 patients, 6 (12%) patients had history of diabetes mellitus and 6 (12%) patients had hypertension.

Out of 50 cases, Renal AKI was seen in 38(76%) patients, 10(20%) patients had prerenal AKI and 2(4%) had post renal AKI.

### Types of AKI

Type	Number	Percentage
Renal	38	76.0
Pre renal	10	20.0
Post renal	2	4.0
Total	50	100.0

Out of 50 cases studied, 10 patients had prerenal AKI. Out of which, 4(8%) patients had acute GE,

5(10%) patients had Malaria and one (2%) patient had AKI following septicaemia.

**Patients with Pre-Renal AKI**

Diagnosis	Number	Percentage
Acute GE	4	8%
Malaria	5	10%
Septicaemia	1	2%

Out of 50 cases, 38 patients had renal cause. Out of which, Malaria was seen in 12 (24%) patients, 6(12%) patients had nephrotoxic AKI, 6(12%) patients had septicaemia, 2(4%) had post

infectious glomerulonephritis, 2(4%) had snakebite and 1(2%) had Rhabdomyolysis. Acute gastroenteritis seen in 5 (10%) of patients, CCF 1(2%).

**Patients with Renal AKI**

Diagnosis	Number	Percentage
Acute GE	5	10%
CCF	1	2%
Drug induced	6	12%
Leptospirosis	3	6%
Malaria	12	24%
PIG	2	4%
Rhadomyolysis	1	2%
Septicaemia	6	12%
Snakebite	2	4%

Among 50 cases, 37(74%) patients were managed conservatively and 13(26%) patients underwent hemodialysis. Among the patients managed conservatively 1(2%) patient died and among those who underwent hemodialysis 4(8%) patients died.

Out of 50 cases studied, 45(90%) patients survived. Mortality was seen in 5(10%) patients. 4 patients had AKI following septicaemia and one patient died due to drug induced renal failure.

**Discussion**

In the present study, vomiting and oliguria were most common symptoms comprising of 92% and

80% respectively. This finding is comparable with other studies done by Singhal AS et al., which showed that oliguria was seen in 85.2% of patients and that 80% of patients had vomiting.<sup>20</sup> In the present study, fever was seen in 70% of patients. However, this symptom was not observed in other studies. This could be explained by higher incidence of AKI associated with infections like malaria, leptospirosis in the present study. In the present study, about 2(4%) of the patients had obstructive uropathy. This was comparable to a study done by Singhal AS et al., about 5% of patients had obstructive uropathy.<sup>8</sup> Hakim Al et

al., in their study 9% of patients had AKI following bladder outlet obstruction.

In this present study good results were obtained with conservative management. One patient who died had septicaemia and respiratory failure. This was comparable to a study done by Hakim Al .et al.

In the present study, 38(76%) patients had AKI due to renal cause.

Majority of patients had malaria 12(24%) with falciparum more common than vivax. This could be because; the study was done in a malaria endemic area. Other common presentations were septicaemia in 6(12%) patients, drug nephrotoxicity 6(12%), leptospirosis 3(6%), snakebite 2(4%), acute gastro enteritis 5 (10%), Rhabdomyolysis 1(2%), congestive cardiac failure 1 (2%) and post infectious glomerulonephritis was seen in 2(4%) patients. Singhal AS et al., in their study found that malaria was the predominant cause of AKI involving about 46% of patients followed by snakebite (20%) patients, acute GE 12% patients, septicaemia 12%, drug nephrotoxicity 3% and acute gastroenteritis in 2% of patients.<sup>8</sup>

### Conclusion

In this study 50 patients were studied prospectively admitted between August 2019 to August 2020. The clinical feature were studied. It was observed that clinical features were almost in accordance with studies conducted earlier. Oliguria and vomiting were still continuous to be the predominant symptoms in acute kidney injury. However we observed malaria was the predominant cause of acute kidney injury and these patients were recovered with conservative management and antimalarials. Other causes of renal failure in our study were similar to other studies like drug nephrotoxicity, acute gastroenteritis and septicemia. About 90% patients were survived. 74% of patients were treated conservatively and 26% patients underwent haemodialysis. We observed that early diagnosis

and early intervention were probably responsible for good survival rate.

### Limitation

The study is done in a limited number of patients. Results may vary when done in a large number of subjects.

### References

1. Brady HR, Brenner BM. Acute kidney injury. Harrison's principles of internal medicine. Vol. 2. 16th edition. New York: McGraw - Hill : 2005.
2. Thadani R, Pascual M, Bonvette VB. Acute kidney injury. The New England Journal of Medicine 2006 ; 30 : 1448 - 1451.
3. Mindell JA, Chertow GM. A practical approach to acute kidney injury 2001 ; 81 : 731 - 747.
4. Hou SH, Broc ME. Hospital acquired renal indifficiency. A prospective study. American journal of medicine 2003 ; 74 : 243 - 248.
5. Eknoyan G. Emergency of concept of acute kidney injury. American Journal of nephrology 2002 ; 22: 225 - 230.
6. Groeneveld ABG, Lins L. Acute kidney injury in medical intensive care unit. Nephron 2000 ; 59 : 602 - 610.
7. Tran DD, Spiegel DM, Rerl T. Age, chronic disease, Sepsis organ failure and mortality in a medical intensive care unit. Critical care medicine 1999; 18 : 474 - 479.
8. Singhal AS, Salkar AR, Chaudhary A, Fuscly SM. Clinical profile of acute kidney injury. JAPI 2002 ; 50 : 71 - 73.