Research Article

A study on clinical profile of acute kidney injury in ICU at tertiary care hospital of Northern Maharashtra

Sunil V Chaudhari[1*], Dinesh Nehate[2]

[1]Professor, [2]Associate Professor, Department of Medicine, Dr Ulhas Patil Medical College and Hospital, Jalgaon, Maharashtra, INDIA.
Email: drsunil3011@gmail.com

Abstract

Introduction: Acute renal failure is a common clinical condition encountered in most of the hospitals. This study is an attempt to evaluate the clinical profile of acute renal failure in patients admitted to ICU Dr Ulhas Patil Medical College and Hospital Jalgaon. **Objective:** To study clinical profile of acute kidney injury in patients admitted to ICU. **Material and Methods:** This was a retrospective study done in general hospital over a period of one year. It included cases admitted to ICU with clinical and laboratory evidence of acute renal failure. **Results:** Among 112 patients 69 were male and 43 female. Average age was 38.82 years. Oliguria and vomiting were common presenting features. Other common symptoms were fever, malaise, jaundice and diarrhea. **Conclusion:** Hence, we conclude that younger age group with male dominance showed more AKI. Oliguria and vomiting were found to be the predominant symptoms in AKI and most of these patients were recovered with conservative management

Keywords: Acute Kidney Injury; Pre Renal; Renal; Post Renal.

***Address for Correspondence:**
Dr. Sunil V Chaudhari, Professor, Dr. Ulhas Patil Medical College & Hospital, N.H.No.6, Jalgaon-Bhusawal Road, Jalgaon, Khurd, Jalgaon-425309 Maharashtra, INDIA.
Email: drsunil3011@gmail.com

Received Date: 28/06/2015 Revised Date: 14/07/2015 Accepted Date: 22/08/2015

Access this article online	
Quick Response Code:	Website: www.statperson.com
	DOI: 04 Sept 2015

INTRODUCTION

Acute renal failure (ARF) is a protean syndrome of varied severity. It is characterized by a rapid (hours to weeks) decline in the glomerular filtration rate (GFR) and retention of nitrogenous waste products such as blood urea nitrogen and creatinine.[1,2] ARF is not a single disease but, rather, a designation for a heterogeneous group of conditions that share common diagnostic features: specifically, an increase in the blood urea nitrogen (BUN) concentration and/or an increase in the plasma or serum creatinine (SCr) concentration, often associated with a reduction in urine volume. The alternative proposed term Acute kidney Injury (AKI) better captures the diverse nature of this syndrome.[3] In keeping with the spectrum of changes seen in AKI, a diagnostic classification scheme was developed. This scheme is referred to by the acronym RIFLE, and includes three levels of renal dysfunction of increasing severity, namely, Risk of renal dysfunction, Injury to the kidney and Failure of kidney function, and two outcome categories: Loss of function, and End stage kidney disease. AKI complicates 5-7% of acute care hospital admissions and up to 30% of admissions to the intensive care unit. AKI is also a major medical complication, particularly in the setting of diarrheal illnesses, infectious diseases like malaria and leptospirosis, and natural disasters such as earthquakes.[4] The etiology of AKI are divided into three major categories: prerenal AKI (diseases that cause renal hypoperfusion, resulting in decreased function without frank parenchymal damage); intrinsic AKI (diseases that directly involve the renal parenchyma) and postrenal AKI (diseases associated with urinary tract obstruction) The analysis of urine and blood biochemistry is useful for differentiating between the major categories of oliguric AKI, namely prerenal AKI and intrinsic AKI caused by ischemia or nephrotoxins.

How to site this article: Sunil V Chaudhari, Dinesh Nehate. A study on clinical profile of acute kidney injury in ICU at tertiary care hospital of Northern Maharashtra. *International Journal of Recent Trends in Science and Technology* September 2015; 16(2): 289-291 http://www.statperson.com (accessed 06 September 2015).

OBJECTIVE

To study clinical profile of acute kidney injury in patients admitted to ICU.

MATERIALS AND METHODS

This a retrospective study of among patients of acute renal failure admitted to Dr Ulhas Patil Medical College and Hospital Jalgaon. January 2014 to December 2014. All patients with clinical and biochemical evidence of acute renal failure according to RIFLE criteria were included in the study. A total of 112 Patients admitted during the study period were included in the study. The patients with chronic renal disease and aged below 12 years were excluded. Detailed history was recorded, general physical examination, systemic examination was done and necessary investigations were done. All the patients were followed up till time of discharge.

RESULTS

Table 1: Distribution of Patients according to age

Age group (years)	No. of Patients	Percentage
12-20	04	03.57
21-30	32	28.57
31-40	28	25.00
41-50	24	21.43
51-60	13	11.61
>60	11	09.82
Total	**112**	**100**

The maximum incidence was seen in the age group between 21 to 30 years (28.57%). Their age ranged from 16-80 years with mean age of 38.82 years.

Table 2: Distribution of Patients according to sex

Gender	No. of Patients	Percentage
Male	69	61.61
Female	43	38.39
Total	**112**	**100**

Among the patients, 69 (61.61%) patient were male and 43 (38.39%) were female. The ratio of Male: Female was 1.6:1.

Table 3: Distribution of Patients according to Symptoms:*

Symptoms	No. of Patients	Percentage
Oliguria	91	81.25
Vomiting	68	60.71
Fatigue	52	46.43
Fever	62	55.36
Loose stools	31	27.68
Oedema	23	20.54
Others	34	30.36

(*Multiple response present. Others include icterus, dizziness, headache etc.)

The symptoms among patients showed that, 91(81.25%) patients had oliguria, 68 (60.71%) had vomiting, 52(46.43%) patients had history of fatigue. Fever was seen in 62(55.36%) cases and 31(27.68%) patient had loose stools.

Table 4: Distribution of Patients according to Type of AKI:*

Symptoms	No. of Patients	Percentage
Pre renal	66	58.93
Renal	37	33.04
Post renal	09	08.03
Total	**112**	**100**

In table 4, it was observed that, Prerenal AKI was seen in 66(58.93%) patients, 37(33.04%) patients had renal AKI and 9 (8.03%) had post renal cause. Among the 112 patients with AKI 36(72%) patients were managed conservatively and 14(28%) patients underwent haemodialysis.

DISCUSSION

The present retrospective study was done with an objective to study clinical profile of acute kidney injury in patients admitted to ICU. The study was done for a period of one year. A total of 112 patients with AKI were studied during study period. The age of the patients ranged from 16 to 80 years with mean age of 38.82 years. There were 69 (61.61%) were males and 43 (38.39%) were females. Similar findings were seen by Bernich B *et al.*[5], in their study of pattern of acute renal failure, found that 58% were males and 36% were females. The mean age of these patients was 56.2 years. In another study by Ravindra L Mehta *et al.*[6], 41% were females and 59% were males. The mean age of these patients was 59.5 years. In the study the most common symptoms noted were vomiting and oliguria comprising 81.25% and 60.71% respectively. This finding of our study was comparable with other studies done by Singhal AS *et al*[7], which showed that oliguira was seen in 85.2% patients and 80% had vomiting. In the present study, Prerenal AKI was seen in 66 (58.93%) patients, 37 (33.04%) patients had renal AKI and 9 (8.03%) had post renal cause. The findings were similar with study done by Ghayas khan *et al*[8], where prerenal AKI was found to be the commonest cause of AKI accounting for 58.97% of cases in their study. Among the 112 patients with AKI 36 (72%) patients were managed conservatively and 14 (28%) patients underwent haemodialysis. This showed that good results were obtained with conservative management. This was comparable to a study done by Ghayas khan *et al*[8] in which 74% of patients were managed conservatively and 26% of patients underwent dialysis.

CONCLUSION

Hence, we conclude that younger age group with male dominance showed more AKI. Oliguria and vomiting were found to be the predominant symptoms in AKI and most of these patients were recovered with conservative management. Thus, early diagnosis and early intervention were probably responsible for good survival rate.

REFERENCES

1. Brady HR, Singer GG: Acute renal failure. Lancet 1995; 346:1533-1540.
2. Lameire N, Van Biesen W, Vanholder R: Acute renal failure. Lancet 2005; 365:417-430.
3. Lassnigg A, Schmidlin D, Mouhieddine M, et al: Minimal changes of serum creatinine predict prognosis in patients after cardiothoracic surgery: a prospective cohort study. J Am Soc Nephrol 2004; 15:1597-1605.
4. Kasper DL, Braunwald E, Fauci AS, Hauser SL, Longo DL, Jameson JL, Loscalzo J. Harrison's principles of internal medicine (17th ed.). New York: McGraw-Hill Medical Publishing Division. 2008.
5. Benrich B. et al Pattern of acute vrenal failure/Transplantations proceeding. 2003; 36:1780-88.
6. Ravindra L Mehta, Maria T Pascual, Sharon Soroko, Brandon R Savage, Jonathan Himmelfarb, T Alp Ikizler, Emil P Paganini, Glenn M Chertow and for the program to improve care in Acute Renal Disease (Picard) Kidney International. 2004; 66, 1613-1621.
7. Singal et al; clinical profile of acute renal failure. JAPI 2002; 50:71-73.
8. Ghayas Khan, Karamat Hussian, Shakeel Ahmed Mirza, Kamran Aziz, Abdul Rehman diseases cuasing acute renal failure in tertiary care centre.PAFMJ. 2010; 4:213-16.

Source of Support: None Declared
Conflict of Interest: None Declared