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Original Research Paper

General Medicine

CLINICAL PROFILE OF ACUTE KIDNEY INJURY PATIENTS ADMITTED IN MEDICAL INTENSIVE CARE UNIT IN TERTIARY CARE CENTRE

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ABSTRACT

Acute kidney injury is one of the major conditions complicating the outcome of hospital admitted patients. Early detection and treatment of AKI can help reduce the mortality to a significant level. The most common conditions succumbing to AKI are hypovolemia, sepsis, drug induced kidney injury, cardiac conditions (reduced cardiac output). Common co-morbid conditions associated are hypertension, diabetes, chronic debilitating conditions like CVA and CAD.

OBJECTIVE- The study aimed at evaluating the clinical profile and co-morbid conditions associated with acute kidney injury in medical intensive care unit in tertiary care setting in central India.

MATERIAL AND MATERIAL AND METHODS- Total 200 patients admitted in medical ICU were selected based on AKIN criteria. pre-exiting conditions like hypertension, diabetes, CAD, CVA were noted. Increase in serum creatinine >1.5 times or >0.3mg/dl and decrease in urine output <0.5ml/kg/h for 6-12 hrs were the criteria for selection. Patients were observed till the time of discharge or death. Data collected was analysed statistically.

RESULTS-Out of the 200 enrolled in the study,81 patients were female and 119 males. Majority of the patients were found to be under the age group of 35-54 years with a total number of 101. Hypertension was found to be the major co-morbid condition with a patient load of 62, followed by diabetes, CVA, CAD with a patient load of 30,24and 5 respectively. Sepsis and shock were found to complicating majority of the illnesses and contributing 87.6% and 67.6% to the total mortality. Infective conditions like acute gastroenteritis and UTI were the most common causes with a total load of 76 and 15 respectively. Chronic liver disease and hemolytic conditions like malaria were found to contributing a lower patient load but higher mortality. Other causes found to be associated with AKI were found to be post natal cases, snake bite and poisoning.

CONCLUSION- pre- renal causes were found to be the most common causes of AKI. Early recognition and vigorous management is the key to reduce mortality and long term complications.

KEYWORDS : Acute Kidney Injury ,akin Criteria

INTRODUCTION-

AKI is one of the most important preventable cause of death in hospital admissions including surgical and medical illnesses. AKI complicates 5-7% of acute care hospital admissions and up to 30% of admissions to the intensive care unit in developed countries[1]There are various criteria's available that define AKI on the basis of serum urea and creatinine levels and urine output (RIFLE,KIDIGO,AKIN).As different studies have used different criteria's for defining AKI there is limited data regarding the incidence and epidemiology of AKI. The causes of AKI differs according the population involved. In developed countries like USA, the incidence is less as compared to a developing country like India. As the two countries differ in the terms of availability of health services, living condition, and diseases commonly found, the western data may not reflect the true picture for the developing countries.

AIMS AND OBJECTIVES-.

To Study the clinical profile of patients with Acute kidney injury admitted in medical intensive care unit in a tertiary care centre in central India.

MATERIAL AND METHODS

Study design

- This is an observational study conducted in the ICU patients over a period of 4 months from June 2016 to nov 2016.

Source of data

- Patients admitted to medical ICU over the period of study.

Inclusion criteria

- Patients either with AKI on presentation or diagnosed in hospital stay during the period of study.

Exclusion criteria

- Patients diagnosed with chronic kidney disease
- h/o hemodialysis
- h/o kidney transplantation
- Prisoners
- Pregnant females

METHODS

- The study protocol was approved by institutional ethics committee
- Information was collected through prepared proforma , and informed consent was obtained from each patient/family member. history of smoking, DM, hypertension, cardiovascular event was obtained.
- A complete clinical examination was done. Mean arterial pressure was calculated by the formula of [diastolic pressure +pulse pressure/3].
- Blood samples were collected at the time of admission, after 24 hrs of admission and after 48 hrs of admission. CBC, serum calcium, serum creatinine, serum calcium, serum phosphorus, serum sodium, serum potassium, FBS.
- The patients admitted in ICU were followed up daily until discharge/death from hospital.
- Patients who met the AKIN criteria for AKI any time during their ICU stay were included in the study.
- Urine output was recorded at 6hrs, 12 hrs, 24 hrs.

ULTRASONOGRAPHY was performed to see size of kidney, renal parenchymal disease, obstruction by renal calculi and ureteric calculi, hydronephrosis, etc. to rule out CKD.

Data Management And Analysis

Detailed data was recorded on data collection tool and was entered into MS EXCEL and analysis was done using MS EXCEL and EPI INFO 7.

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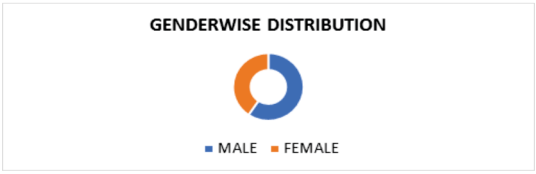
RESULT

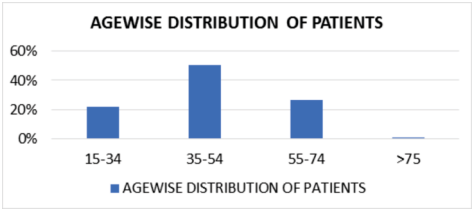
Table - 1 Genderwise Distribution

S.No	GENDER	FREQUENCY	PERCENTAGE (%)
1	FEMALE	81	40.5
2	MALE	119	59.5
	Total	200	100.0

Table 2: Agewise Distribution Of Patients With



Acute Kidney Injury Admitted In Medical Intensive Care Unit



Among the total number of patients , female and males accounts for 40.5% and 59.5% respectively. Age group of the patients ranged from 15 to 85 years with majority of the patients found to be under the age group of 35-54 years, with total number of 101 accounting for 50.5%. The mean age of the patient under study was 45.7 ± 13.23.

S.No	Age In Years	No. Of Patients	Percentage
1	15-34	44	22%
2	35-54	101	50.5%
3	55-74	53	26.5%
4	>75	2	1%
Total		200	100

Table 3 Comorbid Conditions Present In Patients With Acute Kidney Injury Admitted In Medical Intensive Care Unit

OUTCOME	CR	DOD	DEATH	TOTAL	PERCENTAGE (N=200)
HTN	32	2	28	62	31%
CVA	7	2	15	24	12%
DM	19	2	9	30	15%
CAD	2	0	3	5	2.5%

Out of the Four co-morbid conditions observed at the time of admission i.e. hypertension, diabetes mellitus, CAD and CVA, hypertension was present in majority of the patients with a total number of 62 patients. Diabetes mellitus was found to be another co-morbid condition accounting for a total number of 30 patients. Cerebrovascular accident was found to be the other major co-morbid condition with a total patient load of 24 followed by coronary artery disease present in 5 patients.

Table 4: Clinical Profile Of The Patients Of Acute Kidney Injury Admitted In Medical Intensive Care Unit

VARIABLE	Minimum	Maximum	Mean	Std. Deviation
Age	16	85	45.76	13.265
Height	145	168	154.20	5.954
Weight	40	76	54.70	6.717
BMI	17.6000	32.9000	23.003500	2.4524089
SBP	48	116	61.81	12.151
DBP	38	74	46.94	9.069
MAP(SBP+2DBP/3)	16.0000	85.3000	34.473455	18.3301539
FBS	45	257	109.34	31.811
S.CREATININE BASELINE	1.0000	14.6000	7.607500	2.0741272
S.CRAETININE AFTER 24hrs	1.6000	14.8000	7.097500	2.0340182
S.CREATININE AFTER 48hrs	.7000	12.8000	6.547449	2.1527427
Hb%	4.3000	14.0000	9.332000	1.7103516
S.UREA (BASELINE)	86	376	178.33	46.831
S. UREA 24 hrs	84	327	160.04	44.211
TLC	214	32000	11203.07	4878.324
S. ALBUMIN	1.2000	5.2000	3.378500	.5896833
S. GLOBULIN	1.6000	21.1000	3.103000	1.3432470
S.potassium	2.6000	6.4000	3.623000	.7317433
S.Na	109.0000	138.0000	127.319500	4.7987823
HDL(mg%)	34	74	49.19	7.502
TG(mg%)	94	270	157.03	33.085
S. CALCIUM	7.8000	10.4000	9.173500	.4209916
S. PHOSPHORUS	2.8	4.0	3.375	.3295

DISCUSSION

Aki is common in patients admitted in the intensive care units. The AKI is often associated with multiple factors, and is known to increase mortality, length of icu stay and hospital stay and in critically ill patient alters the outcome of patients.

Our study was conducted over a period of 4 months in the 54 bedded medical Icu's of our institution.

The demographic analysis of our patients revealed that the average age of our study population was 45.76+-13.26, and 59.5% were males. This is similar to the previous studies.[2]

Based on our study decreasing levels of haemoglobin, fall in blood pressure, increasing levels of serum urea and creatinine and total leukocyte count were found to be associated with majority of acute kidney injury cases. Mean age of the patient in our study 45.76± 13.265, male and female AKI patients were 119 and 81 respectively., mean baseline serum creatinine value was found 7.60±2.07, mean baseline serum urea 178.33± 46.8, mean haemoglobin was found to be 9.3gm% , and mean SBP was 61.8 mm hg

Even though the facilities and care have improved over the last decade, the overall mortality rates in patients with AKI does not show significant decrease. This may be attributed to the severity of illness at the time of admission and more associated co-morbidities.

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