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EPIDEMIOLOGY AND OUTCOMES OF COMMUNITY ACQUIRED AKI : A RETROSPECTIVE ANALYSIS FROM A TERTIARY CARE CENTER IN NORTHERN INDIA

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INTRODUCTION:

- Community Acquire AKI (CAAKI) develops outside the hospital settings and imposes significant burden on healthcare with its high mortality rate and long-term consequences in selected cases
- Infective causes are commonly incriminated and thus CAAKI incidence can be curtailed with social and preventive aspect of modern medicine
- We retrospectively studied patients of CAAKI admitted previously at our institute with follow-up for 3 months.

METHODS:

- Patients aged >18yrs, with diagnosis of CAAKI who were admitted to our Institute (a tertiary care centre located in northern part of India) over a period of 8 years (2016-2024) were included in the study
- The etiological spectrum and renal and patient outcomes of CA-AKI at the index visit and at 1-month, and 3-month follow-up were analyzed.

EXCLUSION CRITERIA

- Patients who had HA-AKI (developed AKI at any time after 48 h of hospitalization)
- Glomerulonephritis
- Preexisting CKD,
- Renal transplant recipients, and
- Those with incomplete records were excluded

DISCUSSION

- The most common cause for AKI in our study was Sepsis. Other studies have also reported sepsis as one of the leading cause of AKI [1,2].
- Recent trend have also shown a rise in sepsis related AKI [3] and occurrence of AKI represents an independent risk factor for longer intensive care unit (ICU) and hospital stays, higher mortality, increased rate of long-term disability and reduced quality of life in adult and paediatric populations in these patients [4,5]
- This is likely attributed to simultaneous involvement of other organs and hemodynamic alterations during the hospital course. In one study[6],sepsis accounts for 45%–70% of all AKI events.
- A single center study from Northern part of india have suggested diarrhoeal disease as the most common cause of CAAKI [8] . In our study it was found as the third most common cause after sepsis
- Though Drug induced AKI is commonly encountered in the hospital settings, we noted this entity in 10.5% of our CAAKI patients. NSAIDs, ACEI/ARBs and Rifampicin were most commonly encountered.
- Other less commonly encountered agents were Beta-lactam antibiotics and some chemotherapeutic drugs (cisplatin,Gemcitabine). Drugs are associated with AKI in 14%–26% of adults in prospective cohort studies [7,8] and 37.5% in a cross-sectional survey [9].
- A minority of patients in our cohort showed complete recovery at index admission but on follow up at 1 months, significant majority had recovered
- Some patients had persistent renal dysfunction at 1 months and this group of patients (called as AKD, acute kidney disease) has been found to be of prognostic importance[10] In our study, AKD was noted in 27.2% patients
- However, on further follow up, significant number of such patients showed complete recovery. At 3 months, 18.9% of the patients were labeled
- as CKD because of the persistent renal dysfunction. Narayan Prasad et al reported 8% of CKD incidence following an episode of AKI [2]

CONCLUSION

- Mortality rate at index admission was 7.2%
- 18.9% patients were labelled as CKD at 3 months.
- Sepsis is the leading cause of AKI
- Presence of certain etiologies like Sepsis, Obstructive uropathy and Multiple myeloma were significantly associated with higher incidence of renal dysfunction at 3 months.
- Also Presence of Diabetes mellitus was associated with adverse renal outcome at 3 months

ETIOLOGICAL ASSESSMENT

- The settings and specific etiologies of CAAKI were noted
- When AKI was multifactorial, the factor attributed by the treating clinician as the most contributory factor was considered the etiology of AKI. If no clear single etiology was ascertained, it was considered undetermined.
- Sepsis was defined according to the Third International Consensus Definition as a documented source of infection with a quick Sequential Organ Failure Assessment (qSOFA) score ⩾2
- Total of 1340 patients data were registered . 343 patients had incomplete records or lacked proper follow-up. Thus data of 997 patients were analyzed
- Out of 997 patients, 605 patients (60.6%) were male. Approximately 50% patients had age more than 50yrs. Diabetes mellitus (DM) and Hypertension (HTN) were the most common comorbidities followed by chronic liver disease (CLD) and coronary artery disease (CAD) .

AKI ETIOLOGY	NO. OF PATIENTS	%
Sepsis	219	22.0
Obstructive Uropathy	109	10.9
Acute Gastroenteritis	85	8.5
Acute Pyelonephritis	72	7.2
Tropical Fever		
-Malaria	59	5.9
- Dengue Fever	15	1.5
- Leptospirosis	20	2.0
- scrub Typhus	08	0.8
- Others	38	3.8
Drug Induced		
- NSAIDs	28	2.8
- ACEi/ARBs	26	2.6
- Rifampicin	21	2.1
- Others	30	3.0
Pregnancy related AKI		
- Puerperal sepsis	20	2.0
- APH/PPH	12	1.2
- Septic Abortion	05	0.5
- Pre-eclampsia	02	0.2
Ischemic ATN	46	4.6
Cardiorenal Syndrome	26	2.6
Multiple Myeloma	22	2.2
Acute Pancreatitis	22	2.2
Malignant HTN	21	2.1
Nephrotic Syndrome	21	2.1
Chronic Liver disease	18	1.8
Rhadomyolysis	18	1.8
Snake Bite	12	1.2
Heat Stroke	10	1.0
Pigment Nephropathy	05	0.5
Hypercalcemia	04	0.4
Thrombotic Microangiopathy	03	0.3
Total	**997**	**100**