

A STUDY OF CLINICAL CHARACTERISTICS AND OUTCOMES OF PATIENTS WITH ACUTE PYELONEPHRITIS (APN), HOSPITALIZED IN TERTIARY CARE CENTRE IN SOUTH INDIA**Dr. Prafull Chege^{1*} and Dr. Manjusha Yadla²**¹Resident, Department of Nephrology, Gandhi Medical College, Secunderabad.²Professor and Head, Department of Nephrology, Gandhi Medical College, Secunderabad.***Corresponding Author: Dr. Prafull Chege**

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Article Received on 24/09/2024

Article Revised on 14/10/2024

Article Accepted on 03/11/2024

BACKGROUND

Acute pyelonephritis (APN) is common clinical entity. Pyelonephritis occurs as a complication of an ascending urinary tract infection (UTI). Acute pyelonephritis usually presents as fever, flank pain, vomiting, burning on urination, increased frequency, and urgency. Acute pyelonephritis can be uncomplicated and complicated. Complicated pyelonephritis can be seen in pregnant patients, patients with uncontrolled diabetes, kidney transplants, urinary anatomical abnormalities, acute or chronic kidney failure, as well as immunocompromised patients. It is essential to define the clinical, biochemical, and radiological profile of patients with APN to identify the early prognostic markers so as to prevent the morbidity and mortality. However, there are less Indian studies addressing these issues of incidence, prevalence, and risk factors. Our goal was to assess the relationship between the clinical laboratory data at presentation and adverse outcomes.

AIMS AND OBJECTIVES

Clinical characteristics and outcomes of patients with Acute pyelonephritis (APN), hospitalized from January 2021 to March 2022. in Tertiary Care Centre in South India.

PATIENTS AND METHODS: This is Case Study of clinical, biochemical, and radiological data of patients hospitalized with a diagnosis of Acute Pyelonephritis from January 2021 to March 2022.

Study design was Observational Retrospective study. Analysis includes clinical profile, epidemiological data, lab parameters, radiological details and outcomes.

Study design: This is Observational Retrospective study.

Inclusion Criteria

Patients above age more than 18 years.

Exclusion Criteria

Patients less than 18 years, Patients with postoperative period after major urological surgery, kidney transplant, pregnancy.

RESULT

A total of 74 Patients were included in this Study and clinical, biochemical data and outcome was analysed.

Variable	Percentage
Mean age (years)	51.7±6.7
M:F	1.9:1
Diabetes mellitus (DM)	38(54.4%)
Renal calculi	10(14.4%)
Benign prostatic hyperplasia	5(6.7%)
Retroviral Disease	3(3.4%)
Neurogenic Bladder	2(2.7%)
Presentation	
Dysuria	68(91.90%)
Lower Backpain	53(71.62%)
Fever	52(70.28%)
Burning micturition	38(51.35%)

Pyuria	12(16.21%)
Microscopic Hematuria	08(10.81%)
Recent Use of Antibiotics	62(83.78%)
Laboratory Parameters	Mean
Hemoglobin (g/dl)	7.9
Leucocytes (cells/mm ³)	13500
Platelet count (cells/mm ³)	78000
Blood Urea	131
Serum Creatinine	5.6
HbA1C	7.9
Sr.Albumin	3.1
Microbiological Analysis(Culture)	
No growth	38 (51.7%)
Positive/Growth	36(48.3%).
Escherichia coli	22(29.7%)
Klebsiella pneumoniae	4(5.40%)
Pseudomonas	4(5.40%)
Enterobacter	3(4.05%)
Polymicrobial	3(4.05%)
RRT Required	32(43.24%)
Hemodialysis	30(40.54%)
Peritoneal dialysis	02(2.70%)
OUTCOME (74 Patients)	
Survived	68(91.89%)
Death	06(8.10%)
OUTCOME of Survived Patients	Out of 68 patients
Completely Recovered	48(70.58%)
Partial Recovered	20(29.42%)
CKD	04(05.88%)
Couldn't traced	16(23.52%)

Parameter	Survivors (n=68)	Nonsurvivors (n=06)	P Value
Age	38.9±6.7	59.5±8.0	0.04
Creatinine	3.19±1.79	5.31±2.89	0.34
Leukocyte count	18.05±1.93	19.81±2.16	0.46
Platelet count	1.78±0.83	1.33±0.88	0.55
Sr.Albumin	2.8±0.7	2.7±0.5	0.65
Sr.Bilirubin	0.7±0.2	2.2±0.9	0.18
Sr.Calcium	8.4±0.6	6.7±0.3	0.296
Sr.Phosphorus	4.5±0.4	5.5±0.7	0.312
Sr.Uric Acid	6.1±0.4	7.1±0.5	0.128
HbA1c	5.9±0.7	7.9±1.8	0.04
qSOFA(>2)	3(4.41%)	5(83.33%)	<0.001
Vasopressor use	6(8.82%)	5(83.33%)	<0.03

DISCUSSION

In our study mean age of patients was 51.7±6.7 years. Umesha et al² study has mean age of 53.8±9.7 of pyelonephritis patients. Males were predominant than females with ratio of 1.9:1. M:F Ratio was comparable to Umesha et al² study.

In Kumar S et al⁶, Rollino C et al⁷, Buonaiuto VA et al⁸ studies male patients outnumbered females. Czaja CA et al³ study shows female predominance.

Diabetes mellitus 38(54.4%) was most common risk factor followed by renal calculi 10(14.4%). Kumar S et

al⁶ Eshwarappa M⁵ and Umesha et al² studies also mention diabetes as most common risk factor.

Most common presentation was dysuria 68(91.90%) followed by low back pain 53(71.62%). Nicolle LE et al¹ and Dhamotharan VM, et al⁴ also mentions dysuria as most common symptoms.

Out of 74 patients, urine culture was showing growth in 36(48.3%) patients and E.coli was most common infective organism. Buonaiuto VA et al⁸ study also show 67% positive urine culture growth and E.coli as most common bacteria.

RRT was required in 32(43.24%) patients, mortality rate was 8.10%. In Kumar S et al 6, Rollino C et al7, Buonaiuto VA et al8 Kahlmeter G11 studies showed mortality rate of 3.2 to 9.8%.

Patients completely recovered were 70.58% and 5.88% patients complicate to CKD, rest patients couldn't traced. Factors affecting mortality were patients older age group, qSOFA score>2, HbA1c>7.9 and vasopressor requirement. Chung VY et al9 study show shock older age as risk factor for mortality.

Our study has few limitations such as it did not include those with postoperative and post-transplant patients, mainly include community-acquired pyelonephritis cases. We couldn't follow almost 23.52% patients in terms of their outcomes.

CONCLUSION

In our study mean age of patients was 51.7±6.7 years. Male to female ratio of 1.9:1.

Diabetes mellitus 38(54.4%) was most common risk factor followed by renal calculi 10(14.4%).

Most common presentation was dysuria 68(91.90%) followed by low back pain 53(71.62%).

E.coli was most common bacteria on urine culture.

Mortality rate was 8.10%. Patients completely recovered were 70.58% and 5.88% patients complicate to CKD, rest patients couldn't traced.

Factors affecting mortality were patients older age group, qSOFA score>2, HbA1c>7.9 and vasopressor requirement.

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