

ACUTE GRAFT PYELONEPHRITIS IN A KIDNEY TRANSPLANT RECIPIENT – A SINGLE CENTRE
EXPERIENCE IN NORTHERN INDIA

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INTRODUCTION

- Urinary tract infections (UTI) are the most common infection after kidney transplantation.
- Clinical spectrum of graft pyelonephritis after kidney transplantation remains less clear
- Transplant recipients have unique risk factors for developing complicated UTI and are at risk of multi drug antibiotic resistant infection

Pre-operative

- Female sex
- Diabetes mellitus
- presence of urological abnormalities

Intra-operative

- Deceased donor transplantation
- The use of ureteric stents
- prolonged indwelling bladder catheterisation.

Post-operative

- Acute allograft dysfunction and rejection
- Excessive immunosuppression as a result of rejection episodes

- Escherichia coli is the most common uropathogen and other common enteric organisms include Klebsiella pneumoniae, Pseudomonas aeruginosa and Enterococci species.

AIMS

To study the prevalence, clinical and microbiological profile with antibiogram of post-transplant graft pyelonephritis.

METHODOLOGY

- **Study design:** Single Centre, retrospective, Observational Study
- **Place:** Medanta Medicity, Gurugram, INDIA
- **Duration:** Patients who underwent kidney transplant from **1st January 2015 and 31st May 2023**
- **Inclusion Criteria:** All Patient fulfilling the criteria of American Society of Transplantation Infectious Diseases Community of Practice 2019 for pyelonephritis were included.
- **Exclusion criteria:** Patients with acute simple cystitis, asymptomatic bacteriuria were excluded
- **Statistical Analysis:** Microsoft office Excel were used to carry out statistical and graphical analysis

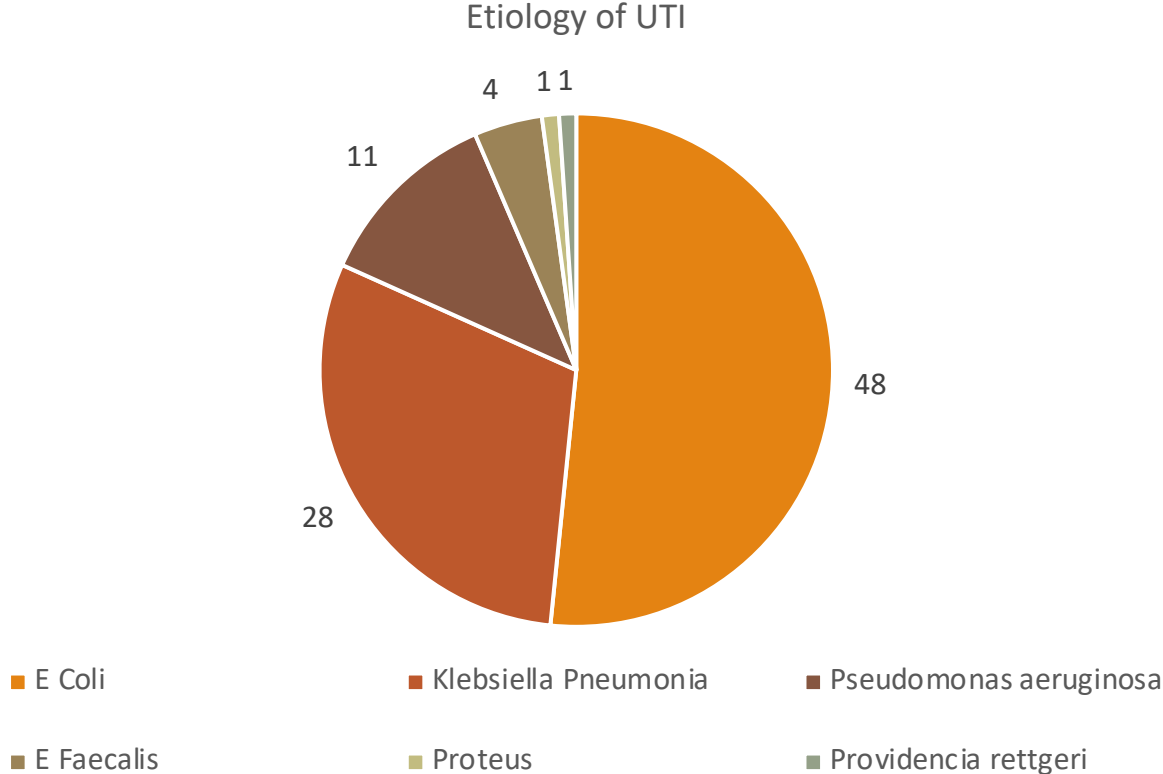
Baseline Characteristic

Baseline Characteristics		
Living Donor / Deceased donor transplant		92/1
Gender (Male/Female)		68/25
Mean Age ± SD (Years)		41 ± 13.57
Induction Immunosuppression		
	ATG	42
	Grafalon	11
	Basiliximab	22
	Nil	18
Maintenance Immunosuppression		
	Tacrolimus+MMF+Steroid	90
	Cyclosporin+MMF+Steroid	2
	Steroid free	1
Comorbidity		
	Diabetes	24
	Hypertension	88
Median time of Pyelonephritis after Transplantation		44 days
Trimethoprim-Sulfamethoxazole Prophylaxis		93

Clinical characteristics

- Clinical suspicion was raised when symptoms of a Pyelonephritis were present and urine routine shows leukocyturia.
 - Fever - 65
 - Graft Pain - 11
 - Dysuria - 40
 - Hypotension - 6
 - Anuria – 7
- 8 patients required ICU admission and 8 patients also required Haemodialysis.
- Median Duration of Hospital stay 7 days

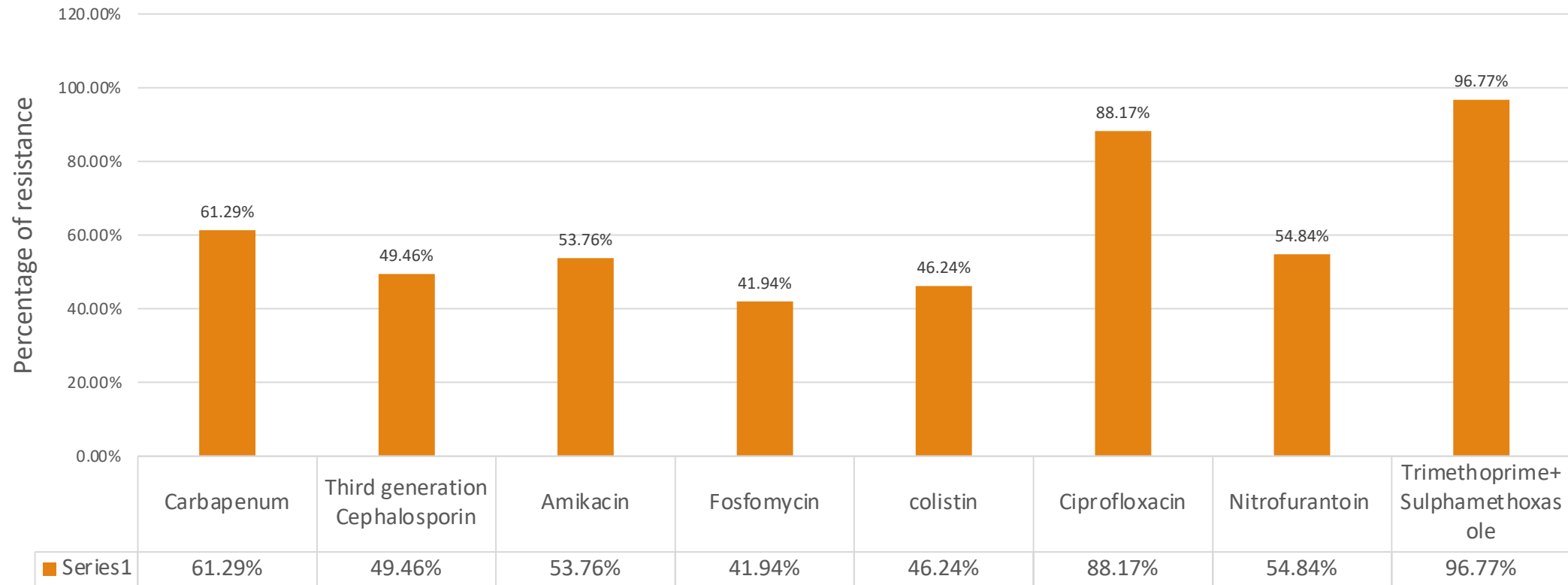
Microbiological Results



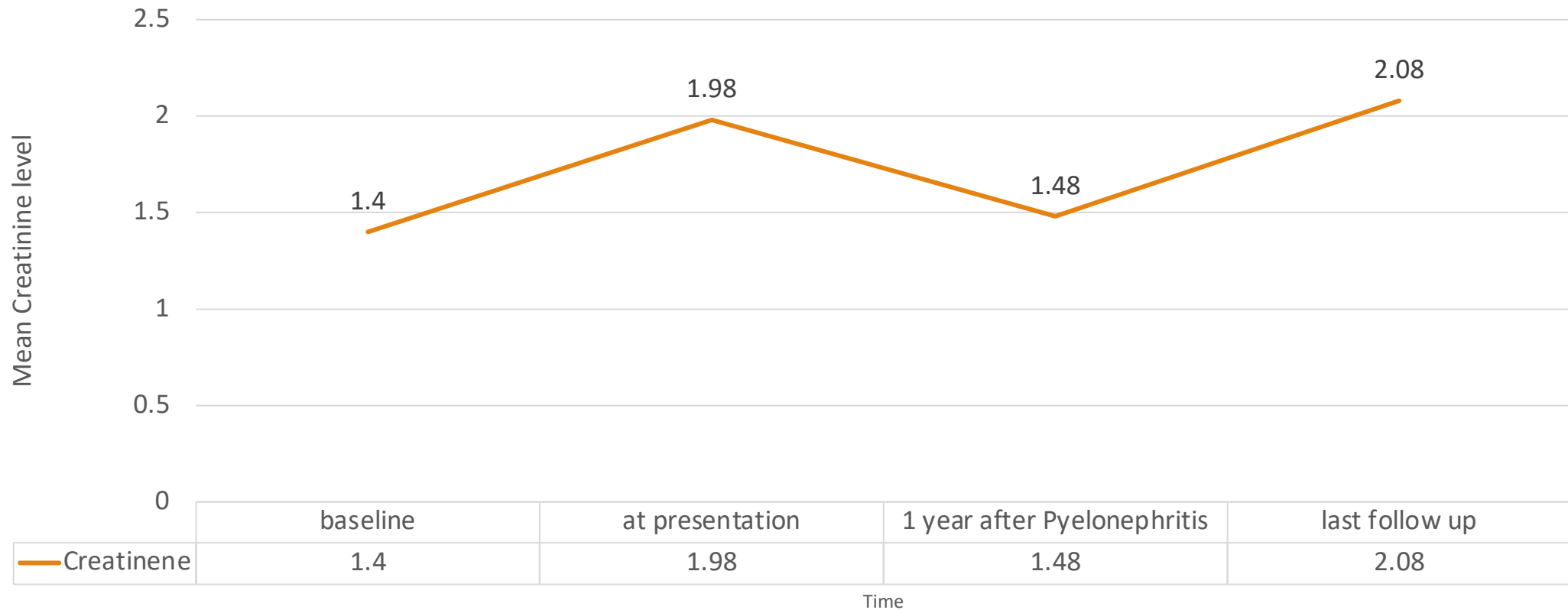
The most common isolates from urinary cultures were gram-negative Enterobacteriaceae as well as klebsiella species.

Antibiotic Resistance

Percentage resistance in gram negative bacilli isolated in patient with graft pyelonephritis



Graft Function



➤ Complete Renal Recovery was seen in 90 patients with graft survival in 92 patients.

CONCLUSION

- Older age, female gender, hyperglycaemia, use of induction immunosuppression were the risk factors for Pyelonephritis
- Gram negative bacilli are the major pathogens with Escherichia coli is the most common uropathogen followed by Klebsiella pneumonia and Pseudomonas species.
- Multidrug resistant organisms are emerging with majority showing resistance to commonly used antibiotics. Carbapenem as an empirical therapy might be useful choice for management of Pyelonephritis and coverage of majority pathogens
- Episode of pyelonephritis is associated with significant graft dysfunction but did not impair overall renal function at 1 year after acute episode.
- This study offer an interesting perspective on the risk factor profile, antibiogram and treatment of graft pyelonephritis.