



A CASE REPORT OF UROSEPSIS DIAGNOSED AND TREATED APPROPRIATELY- WHICH CAN PREVENT MORBIDITY AND MORTALITY.

Pharma

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ABSTRACT

Urosepsis is a life-threatening condition often caused by urinary tract infections, especially in patients with comorbidities. This case report describes a 54-year-old male with diabetes, hypertension, and Parkinsonism who developed urosepsis with multidrug-resistant *Pseudomonas aeruginosa*, susceptible only to Colistin. Prompt initiation of Colistin therapy led to clinical improvement and infection clearance. The case highlights the importance of early diagnosis, appropriate antimicrobial use, and adherence to antibiotic stewardship in managing resistant infections.

KEYWORDS

Urosepsis, Colistin, MDR *Pseudomonas aeruginosa*, Diabetes, Antibiotic stewardship, Urinary tract infection.

INTRODUCTION

Urosepsis is a life-threatening condition arising from a urinary tract infection (UTI) that triggers a systemic inflammatory response, potentially leading to organ dysfunction and septic shock^{1,3,4}. It is a significant cause of morbidity and mortality, particularly among the elderly, those with comorbidities such as diabetes or immuno suppression, and individuals with indwelling urinary catheters or obstructive uropathy^{3,4}. The incidence of urosepsis is rising as the population ages and as urological interventions become more common.⁴

The pathophysiology of urosepsis centres on an exaggerated immune response, with an imbalance between pro- and anti-inflammatory cytokines leading to tissue damage and organ failure¹.

The most frequent pathogens are Gram-negative bacteria, especially *Escherichia coli*, but other Enterobacteriaceae, Gram-positive organisms, and, less commonly, fungi may be involved^{2,3}. Obstructive uropathy—often due to nephrolithiasis, prostatic hyperplasia, or malignancy—accounts for the majority of cases^{1,4}.

Clinical presentation varies but typically includes systemic inflammatory response syndrome (SIRS) criteria such as fever or hypothermia, tachycardia, tachypnea, and leukocytosis or leukopenia^{1,4}. Prompt diagnosis, which relies on clinical suspicion, blood cultures, urinalysis, and imaging, is crucial for timely initiation of antibiotic therapy and source control^{3,4}.

Delay in treatment significantly increases mortality, underscoring the need for early recognition and a multidisciplinary approach involving urologists, intensivists, and microbiologists^{1,4}.

This case report highlights the diagnostic challenges, clinical course, and management strategies in a patient with urosepsis, contributing to the evolving understanding and treatment of this critical condition^{1,3,4}.

Case Report

A 54-year-old male initially admitted and managed at KIMS Hospital, Bangalore, presented to Akash Super Speciality Hospital on **12th May 2025** for further evaluation and management.

The patient had a **history of a self-fall** on the same day, followed by a **loss of consciousness (LOC) lasting approximately 10 minutes** and **bleeding from the left ear**.

His **past medical history** is significant for a **craniotomy performed 8 years ago** following a road traffic accident (RTA). He is a **known case of type 2 diabetes mellitus (T2DM)** and **hypertension** for the past six years, and parkinsonism from past 4 years.



Upon evaluation, **urosepsis** was suspected and later confirmed based on **urine routine examination and urine culture sensitivity** findings. A **complete blood count (CBC)** showed a marked **neutrophilia (Neutrophils – 85%)**, supporting the suspicion of an ongoing bacterial infection and **PTT and INR was elevated**.

The **urine culture** identified ***Pseudomonas aeruginosa*** as the causative organism, which exhibited **resistance to all antibiotics except Colistin**.

Therapeutic Management:

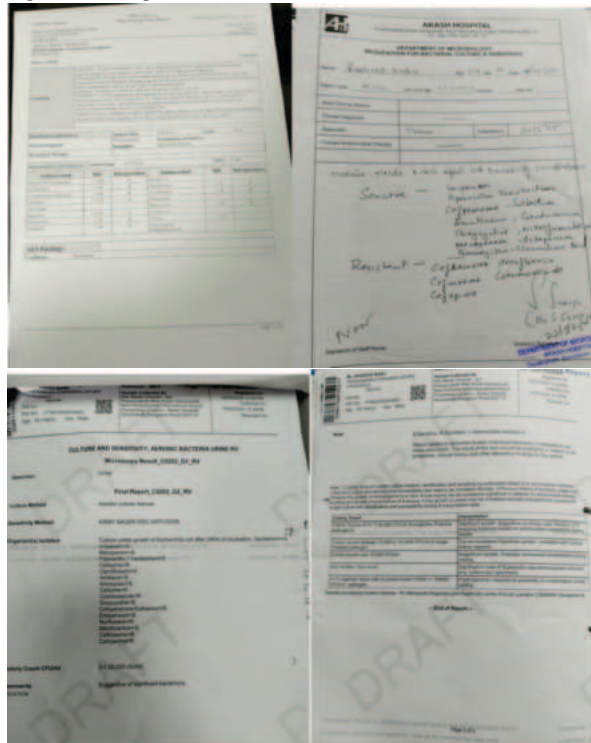
In view of the multidrug-resistant infection, **Colistin was initiated on 16th May 2025**, at a dose of **2 million international units (MIU) three times daily (TID)**.

The patient's clinical condition has been monitored closely with daily progress and appropriate supportive care measures.

Sl.No.	15 /05/25	23/05/25
CNS	E4V2M4	E4V1M2
PTT	26.9 sec	14.7 sec
INR	2.44	1.29
Urine Protein	1+	2+
Pus cells	Plenty	plenty
WBC count	16,200 cells / cumm	14,200 cells/cumm
Neutrophils	85.0%	74.6 %
lymphocytes	8.9%	11.3 %
Platelet count	143000 cells/cumm	2,88000 cells/cumm
Total protein	5.9 gm/dl	6.2 gm/dl
Alkaline phosphatase	492 U/L	203U/L
GGTP	379 U/L	143U/L
Albumin	3.0 gm/dl	2.5 gm/dl

On 23rd May 2025, a repeat **urine culture and sensitivity report** showed **No bacterial growth**, and the **complete blood count (CBC)** demonstrated **normalization of previously elevated parameters**, including a **Decrease in White Blood cell (WBC) count**, indicating clinical improvement.

Although the infection had resolved, in accordance with **antibiotic stewardship guidelines for treating multidrug-resistant Pseudomonas infections**, **Colistin therapy was continued for a total duration of two weeks** to ensure complete eradication of the organism and to prevent recurrence.



CONCLUSION

Colistin, a polymyxin-class antibiotic with potent activity against gram-negative organisms, is commonly used in the treatment of severe infections such as urinary tract infections and hospital-acquired pneumonia. In this case, a patient with multiple comorbidities, including type 2 diabetes mellitus, hypertension, and Parkinsonism, recent head injury and bedridden was diagnosed with urosepsis due to multidrug-resistant *Pseudomonas aeruginosa*. Timely initiation and adherence to guideline-based administration of Colistin led to effective resolution of the infection. This case highlights the critical role of appropriate antimicrobial therapy in managing resistant infections and demonstrates how early intervention with Colistin can significantly reduce the risk of complications, thereby improving clinical outcomes and preventing morbidity and mortality.

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