RES-324

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Real-World Effectiveness and Safety of Cefotaxime in the Management of Respiratory and Urinary Tract Infections: A Multicenter Retrospective Study

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INTRODUCTION

Burden of RTIs and UTIs: Global and Indian Perspective

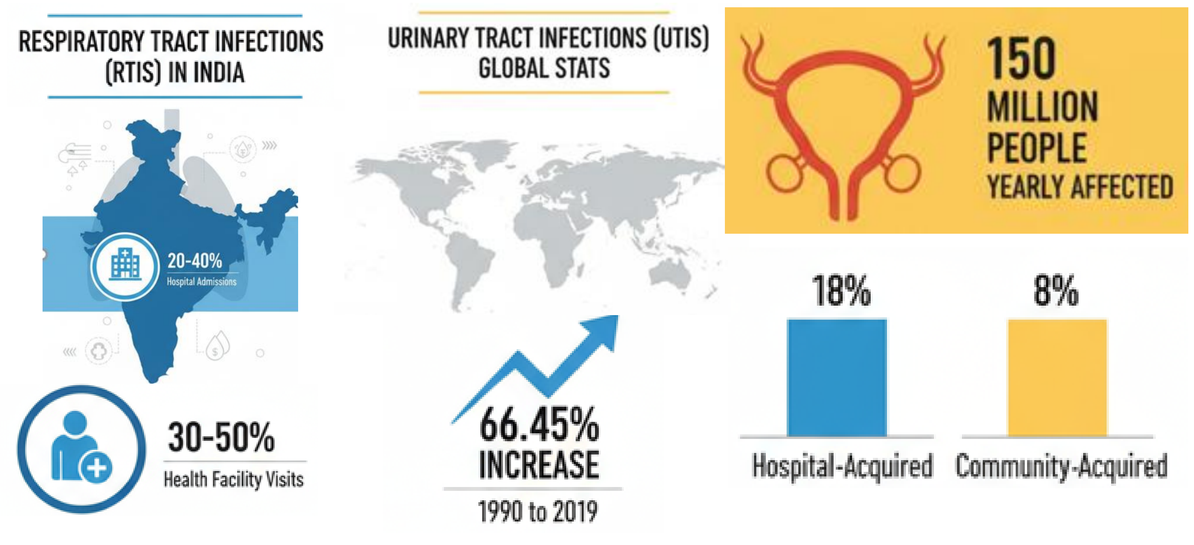
- Major global infectious disease burden
- RTIs: Top causes of death globally—especially in children, and elderly
- India: RTIs 2.8% in children <5 years (NFHS-5, 2019–2021)
- India: Pneumonia ~15.9% of under-5 deaths (2000–2015)
- UTIs: 10–34% prevalence in India;

Challenges in Management of RTIs and UTIs

- Rising global/national antibiotic resistance
- Misuse/overuse of antibiotics → multidrug resistance (E. coli, Klebsiella spp., S. pneumoniae)
- Limited rapid diagnostics, inadequate infection control
- Need effective, broad-spectrum, parenteral antibiotics with proven safety

Cefotaxime as a Treatment Option

- Third-generation cephalosporin; broad-spectrum
- Manages severe RTIs (CAP, HAP, bronchopneumonia, severe LRTIs) and complicated/hospital-acquired UTIs, pyelonephritis
- Decades of safe clinical use; well-tolerated



RATIONALE & OBJECTIVE

- **Healthcare Burden of URTIs**:
  - RTIs and UTIs are among the most common infections leading to hospitalization globally and in India.
  - Increasing antimicrobial resistance complicates the management of these infections.
  - Cefotaxime, a third-generation cephalosporin, is widely used due to its broad-spectrum efficacy against gram-positive and gram-negative bacteria.
- **Study Objective**:
  - To evaluate the real-world effectiveness of cefotaxime in hospitalized patients diagnosed with respiratory tract infections (RTI) or urinary tract infections (UTI).
  - To assess the safety and tolerability profile of cefotaxime in these patients..

METHODOLOGY

- **Inclusion:** Patients of all age group with RTI and UTI diagnosis, treated with Cefotaxime, documented outcomes, and ≥1 follow-up**.**
- **Exclusion:** Patients with incomplete/unavailable records.

STUDY OVERVIEW

- **Data**: Retrospective review of records at baseline (Day 0), 1st follow-up (~Day 7), and 2nd follow-up (~Day 14).
- **Parameters**: Demographics, duration of therapy, duration of illness, clinical outcome (cure, improvement, worsening, mortality), microbiological outcome (where data is available), and adverse events reported.
- **Endpoints**: Clinical and microbiological cure + safety.
- **Ethics**: IEC approved, confidentiality maintained, consent not required.

Hospitalized patients of RTI and UTI Cefotaxime Therapy

Baseline Visit	Cefotaxime Therapy	End of Therapy	Follow up
			
• Assess symptoms • Confirm diagnosis • Start the therapy	• Cefotaxime therapy • Adverse event reported	• Clinical Outcome • Microbiological outcome (If data available) • Adverse event reported	• Assessment of recovery • Clinical & microbiological outcome

RESULTS

- **Patient Demographics**:
  Total participants (n): **9313**
  - **Gender distribution:**
    - **Male**: 5944 (73%); **Female**: 3369 (27%)
  - **Age (Mean ± SD):** 40.44 ± 14.73
- **Diagnosis:**
  UTI: 2888 (31.01%); **RTI:** 6425 (68.99%)
- **Prescribed Treatment**:
  - **Cefotaxime therapy**
  - **Mean dose:** 1.98 g/day (RTI) and 1.87 g/day (UTI).
- **Clinical Outcome:**
  - At the end of therapy: 81%; At follow up: 95.6%

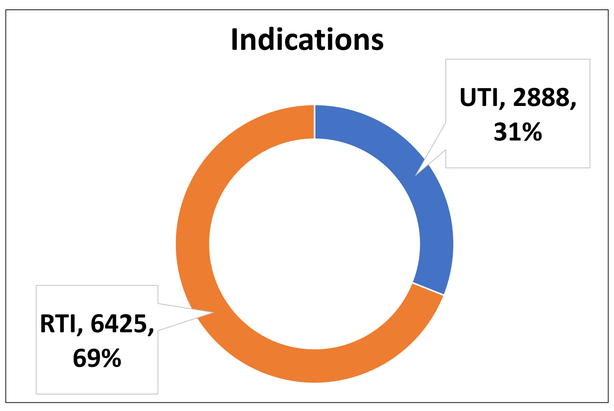
Duration of Illness, duration of treatment, and duration of hospitalization

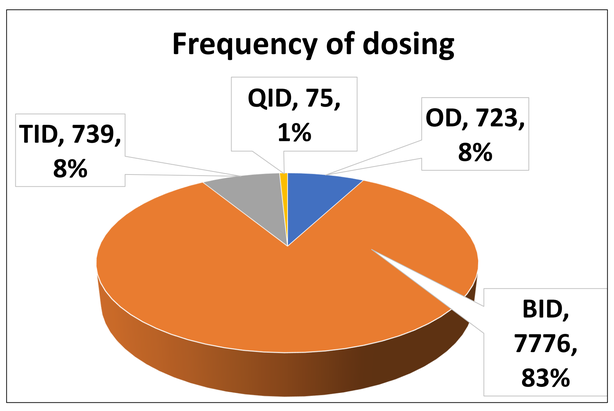
Duration of Illness	
Diagnosis	Mean ± SD
• UTI	5.2 ± 2.4
• RTI	7.1 ± 3.0
Overall	6.54 ± 2.82

Duration of treatment	
Diagnosis	Mean ± SD
• UTI	5.5 ± 1.0
• RTI	6.0 ± 0.8
Overall	5.84 ± 0.87

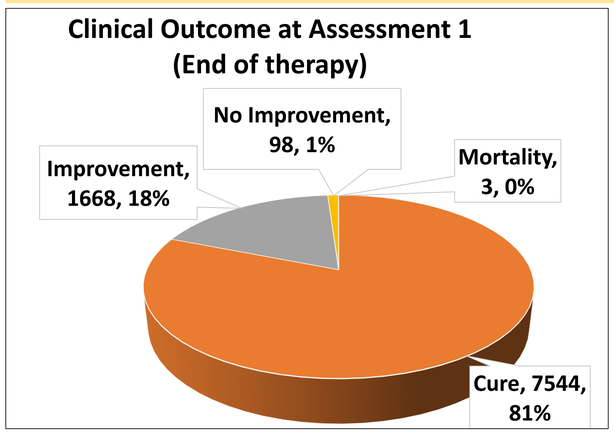
Duration of Hospitalization	
Diagnosis	Mean ± SD
• UTI	6.2 ± 1.2
• RTI	6.6 ± 1.0
Overall	6.47 ± 1.07

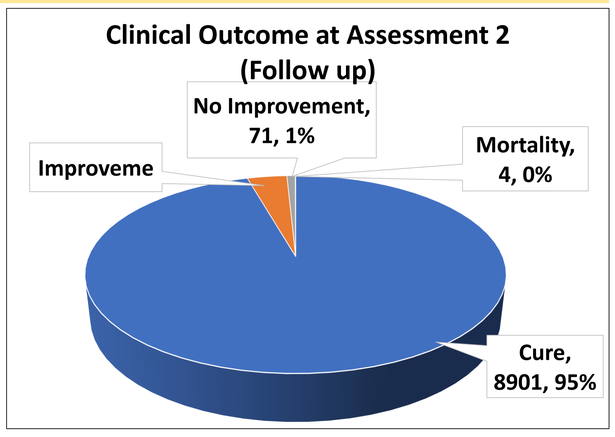
Frequency of dosing





Clinical Outcome at the end of therapy and at the follow up





Isolation of bacteria during therapy, at the end of therapy, & at follow up

	Assessment during therapy			Assessment at end of therapy			Assessment at follow-up		
Bacterial Species	RTI	UTI	Total	RTI	UTI	Total	RTI	UTI	Total
▪ E. coli	0	345	345	0	128	128	0	26	26
▪ S. pneumoniae	132	0	132	48	0	48	13	0	13
▪ S. pyogenes	110	0	110	41	0	41	11	0	11
▪ H. influenzae	98	0	98	37	0	37	7	0	7
▪ E. faecalis	0	50	50	0	19	19	0	7	7
▪ Staphylococcus aureus	27	27	54	10	10	20	2	6	8
▪ K. pneumoniae	45	85	130	17	32	49	3	11	14
▪ Salmonella	0	50	50	0	19	19	0	8	9
Totals	412	557	869	153	208	323	36	48	84

CONCLUSION

- **Efficacy and Safety**:
  - Cefotaxime demonstrated high real-world effectiveness and good tolerability in managing RTIs and UTIs
  - It showed rapid symptom resolution and significant bacterial reduction.

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