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## **Antibiotic usage and susceptibility patterns in Uncomplicated UTI in a Tertiary Hospital in South India**

Christy John

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Title: Antibiotic usage and susceptibility patterns in Uncomplicated UTI in a Tertiary Hospital in South India

Christy John<sup>1</sup>, Nithyananda Chowta<sup>2</sup>, Satheesh Rao<sup>3</sup>

### **Abstract**

**Purpose** Urinary tract infections (UTI) are common infections in otherwise healthy young women

and there is considerable heterogeneity in antibiotic prescribing practices contributing to increased

health expenditure, hospitalization, and 'collateral damage' with the unprecedented use of fluoroquinolones and beta-lactams leading to the increase in MRSA strains and gram-negative bacilli.

This study was designed to study the appropriateness of empirical antimicrobial therapy with clinical

outcomes among outpatients and analyze antibiotic susceptibility patterns.

**Methods** A longitudinal study involving women clinically diagnosed with uncomplicated UTI as per

IDSA guidelines across a study period of 18 months was conducted from 2008-2020.

**Antibiotic**

appropriateness was analyzed with respect to IDSA guidelines with subgroup analysis of culture-proven

UTI.

**Results** Among 105 cases of uncomplicated UTI, fluoroquinolones were prescribed the most (41%) followed by Beta-Lactams (30.5%). Choice of antimicrobial agent was appropriate in 60 (57%) cases

and duration in 30 (28.5%) cases. Subgroup Analysis of 25 culture-proven cases revealed most

common organism isolated was E. coli (60%) with prevalence of MDR organisms being 36%. The

susceptibility pattern revealed similar levels of resistance between fluoroquinolones (38%), betalactams(

36%), Nitrofurantoin(32%), Trimethoprim-sulfamethoxazole(32%), and Fosfomycin(20%) with clinical cure rates non-inferior among those prescribed the latter group of antibiotics

(84.2% vs

96.6%)

**Conclusion** The spectrum of uropathogens in our clinical setting is evolving with a substantial rise in

MDR pathogens due to inappropriate antibiotic prescribing practices. The use of antibiotics such as

Nitrofurantoin, Trimethoprim-sulfamethoxazole, and Fosfomycin in accordance with local antibiograms must be encouraged as empirical therapy for uncomplicated UTI.

**Keywords** Urinary tract infection – antibiotic stewardship – Nitrofurantoin – Cotrimoxazole - Fosfomycin