

Multi-Drug Resistant Urinary Tract Infection: An Emerging Health Issue

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Urinary tract infection (UTI) is the most common bacterial infection among adults throughout the world, with an estimated annual global incidence of 150-250 million cases.^{1,2} Females of child bearing age constitute the most commonly affected group; while patients with diabetes mellitus (DM) are also at increased risk for UTI.³ Enteric Gram-negative organisms are the predominant infective agents responsible for UTI with *Escherichia coli* being at the top of the list and is responsible for 60-90% cases in different series followed by *Klebsiella pneumoniae*.³⁻⁵

Antimicrobials are the main weapons to treat UTI. The Infectious Diseases Society of America (IDSA) recommended using empiric antibiotics in uncomplicated cystitis⁶ and such cases merit no investigation. However, an enormous numbers of papers from every corner of the globe described high levels of drug resistance in community acquired UTI and Bangladesh is not an exception.³⁻⁵ In Bangladesh, over 90% UTI cases are reported as having resistance to commonly prescribed antibiotics for UTI including fluoroquinolones, penicillins and oral cephalosporins.^{3,5} Most fluoroquinolone resistant organisms from urinary isolates were fulfilling the criteria for multi-drug resistance (MDR).^{7,8} Extended-spectrum beta-lactamase (ESBL) producing *Enterobacteriaceae* are an emerging group of drug resistant organisms responsible for UTI, specially, among patients with DM.^{3,9}

MDR is defined as an organism having non-susceptibility to at least one agent from three groups of antimicrobials.⁸ UTI caused by single drug resistant organisms are common; UTI caused by extensively drug resistant (XDR) bacteria and pan drug resistant (PDR) bacteria are also reported.^{8,10,11} Besides the bacterial inherent and acquired mechanisms of developing drug resistance, easy availability of antimicrobials and drug dispensing without prescriptions by registered physicians, inadvertent and non-judicious use of antimicrobials, for example, use of antibiotics in non-specific febrile illnesses, are contributing to these increasing levels of drug resistance.

As UTI is a common clinical problem, preventive strategies may play a role in reducing disease burden, especially in high risk groups. Use of antibiotics in UTI is advisable depending upon local antibiotic sensitivity patterns and antibiotic stewardship programs may help combating drug resistance, not only for UTI, but also for other infections. It is appreciated that many older generations of antimicrobials are regaining their susceptibility to common microbial agents. Clinicians should be very much cautious before choosing and prescribing an antibiotic, while policy makers should make guidelines for common infections depending on local antibiotic sensitivity patterns (available from local microbiology laboratories). Good liaisons between clinicians and microbiologists may be a way to choose antimicrobial agents in UTI and other bacterial infections and help in reducing antibiotic resistance.

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