

Bangladesh sees high rates of drug resistance to urinary tract infection

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Organisms causing urinary tract infections (UTI) are increasingly proving to be ineffective or showing resistance to drugs that are used to kill the germs. This phenomenon has been increasing worldwide, especially to commonly used antimicrobials (drugs) in children.

In a recent study in Bangladesh, scientists warn that [urinary tract](#) pathogens are developing resistance to [antibiotics](#) and they highly recommend sensitivity tests before prescribing any antibiotic.

The study, titled 'Etiology and Antimicrobial Susceptibility Patterns of Urinary Tract Infection done at Dhaka Shishu (children) hospital', published in the Northern International Medical College Journal suggests understanding the local vulnerability pattern of the pathogens. The article is hosted on the INASP-supported Bangladesh Journals Online (BanglaJOL) platform.

The study found that there is great risk of [drug](#) resistance if antibiotics are prescribed without sensitivity or laboratory culture tests. The principal investigator of the research, Dr Md Atiqul Islam, of Dhaka Shishu Hospital, the largest children's hospital (DSH) in the Bangladesh capital says, "Ideally urine culture sensitivity patterns should be done before prescribing any antibiotic in treating urinary tract infection (UTI)."

Dr. Islam, who notes that the UTI is common and can be fatal, says, "Most of the UTIs do not allow sufficient time as patients in majority

cases do not want to wait for such a test that takes up to 72 hours."

He explains, "Physicians prescribe antibiotics on physical examination of a patient based on clinical conditions and local micro-organism sensitivity pattern. Antibiotics are prescribed to prevent any deterioration in the condition that may result in serious complications, and thus we prescribe antibiotics."

The seven-month study done in 2016 at DSH evaluated a total of 147 culture-positive UTI patients for the laboratory analysis. In this case, [urine samples](#) of the patients were collected. Out of the total, 147 urine samples showed positive or had bacteria of different types grown. The bacteria colony counts of these samples were identified, and the profile of antibiotic susceptibility was recorded.

Among 147 culture-positive UTI patients, Escherichia coli (E-coli) was found as the most prevalent in 103 (70%) infected children.

The study revealed that the most effective drugs found against urinary isolates was Imepenum, (97.27%), followed by Colistin (94.55%), Meropenum (93.87%) and Amikacin (91.83%).

Professor Dr. B H Nazma Yasmeen, one of the co-authors of the study and also Head of the Department of Paediatrics at the Northern International Medical College in Dhaka, says, "Periodic evaluation of antimicrobial activity of different antibiotics is essential as the pattern of antibiotic sensitivity may vary over periods."

The study strongly recommended that there is a great need for antimicrobial resistance surveillance at the local, national, and international levels. The scientists suggest that there is a need for laboratory analysis of the commonly used drugs that are prescribed to treat UTI in children.

The laboratory test would evaluate effectiveness of the drugs in certain localities (geographic areas) to know in advance which suitable effective drugs to prescribe before delaying treatment.

The effect of resistant microorganism is obvious in hospitals and other healthcare facilities, when infections caused by the drug-resistant microorganism, the study points out. This results in a prolonged infectivity with related mortality especially among immune compromised [patients](#).

More information: Etiology and antimicrobial susceptibility pattern of bacterial pathogens from urinary tract infection. *Nepal Med Coll J.* 2012 Jun;14(2):129-32. www.ncbi.nlm.nih.gov/pubmed/23671963

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