

## Bacteriology and Antibiotic Resistance Pattern in Community Acquired Urinary Tract Infection

Extensive use of antibiotics have resulted in development of resistance among most commonly used drugs in community acquired urinary tract infection (UTI). This study was conducted to identify the resistance pattern in community acquired UTI. We collected urine for routine examination and culture from suprapubic urine in all the cases to avoid any contamination. *E. Coli* was the most common organism identified. Among oral antibiotics, there was high degree of resistance to penicillin group and cephalosporin groups. Among parenteral antibiotics, all the cephalosporins were variably resistant except cephalperazone-salbutactum.

**Key Words:** Antibiotic resistance, Cephalosporins, UTI.

Urinary tract infections (UTIs) are often treated with different broad-spectrum antibiotics when one with a narrow spectrum of activity may be appropriate [1,2]. Indian Academy of Pediatrics in its revised update on UTI has recommended cephalosporins in oral and parental forms as the first line of therapy [3].

The resistance pattern of community acquired UTI pathogens has not been studied extensively in India [4]. We conducted this study to compare the frequency and drug resistance pattern in uropathogenes isolated from children of < 5yrs with community acquired UTIs in Jamshedpur, India and to compare the treatment modalities with the recommendation of IAP. Detailed history and complete clinical examination was carried out. The urine specimen was collected in sterile tube through suprapubic approach for investigation. Enrolled cases were grouped under two age groups; upto 2 years, and above 2 years. The Ethics Committee approved the study.

64 children with urine culture positive cases were analyzed. In children less than 2 years, the most common symptoms were fever, diarrhea, and excessive cry. In children between 2 to 5 years of age the most common complaints were fever, dysuria and pain abdomen. *E. Coli* was the most common organism followed by *Klebsiella*, *Proteus* and *Pseudomonas*. *E. coli* was most commonly sensitive to nitrofurantoin, followed by levofloxacin, ofloxacin and azithromycin. High degree of resistance was seen for penicillin and cephalosporin groups of drugs. Among parenteral antibiotics, the most sensitive antibiotic was aminoglycosides (amikacin and gentamicin) and high degree of resistance was seen for cephalosporins. Detailed drug sensitivity is shown in **Table I**.

The evolution of resistance among antibiotic is not a new phenomenon. The high degree of resistance needs to

**TABLE I** ANTIBIOTIC RESISTANCE PATTERN IN CHILDHOOD UTI

Antibiotics	<i>E Coli</i> (49)	<i>Klebsiella</i> (5)	Others (10)	P- Value
Amoxicillin	48 (98%)	4 (80%)	10 (100%)	0.074
Augmentin	43 (88%)	3 (60%)	4 (40%)	0.002
Cephalexin	42 (85.8%)	3 (60%)	10 (100%)	0.110
Ciprofloxacin	31 (63.3%)	2 (40%)	6 (60%)	0.596
Norfloxacin	41 (83.7%)	1 (20%)	7 (70%)	0.005
Ofloxacin	13 (26.6%)	0	7 (70%)	0.112
Sepran	37 (75.6%)	3 (60%)	9 (90%)	0.406
Azithromycin	14 (28.6%)	0	3 (30%)	0.373
Levofloxacin	3 (6.2%)	0	4 (40%)	0.005
Nitrofurantoin	0	1 (20%)	4 (40%)	0.000
Amikacin (iv)	10 (21.4%)	0 (0%)	3 (30%)	0.396
Ceftazidime (iv)	30 (61.3%)	2 (40%)	9 (90%)	0.114
Cefuroxime (iv)	33 (67.4%)	2 (40%)	8 (80%)	0.298
Gentamicin (iv)	8 (16.4%)	0 (0%)	4 (40%)	0.116
Magnex (iv)	10 (21.4%)	0 (0%)	3 (30%)	0.396
Imipenem (iv)	20 (41.9%)	2 (40%)	8 (80%)	0.073
Meropenem (iv)	19 (38.8%)	1 (20%)	7 (70%)	0.110
Cefotaxime (iv)	36 (73.5%)	3 (60%)	7 (70%)	0.807
Ceftriaxone (iv)	36 (73.5%)	2 (40%)	9 (90%)	0.118
Pipzo (iv)	21 (42.2%)	0 (0%)	4 (40%)	0.173

be reviewed in the light of our report as cephalosporins are among the highly prescribed drugs over the counter. This adds to inadequate treatment, high degree of resistance and increased cost of treatment [5]

**Contributors:** All the authors designed, contributed and approved the study.

**Funding:** Tata Motors; **Competing interests:** None stated.

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