Microbial Susceptibility, Virulence Factors and Plasmid Profiles of Uropathogenic Escherichia coli Strains Isolated from Children in Jahrom, Iran

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Background & Objectives: Urinary tract infections (UTIs), including cystitis and pyelonephritis, are the most common infectious diseases in childhood. *Escherichia coli* accounts for as much as 90% of the community- acquired and 50% of the nosocomial UTIs. Therefore, Identification of *E. coli* strains is important for both clinical and epidemiological implications. Understanding antibiotic resistance patterns and molecular characterization of plasmids and other genetic elements is also epidemiologically useful.

Methods: To characterize uropathogenic strains of *E. coli* we studied 96 *E. coli* strains recovered from urine samples of children aged from 1 month to 14 years with community-acquired urinary tract infection in Jahrom, Iran, for their drug sensitivity and plasmid profiles.

Results: Drug sensitivity of the isolates was 19.8%, 75.5%, 80.4%, 84.6%, 91.4%, 96.8%, 96.8% and 100% to ampicilin, nalidixic acid, cefixime, gentamycin, ciprofloxacin, nitrofurantoin, amikacin and imipenem, respectively. Totally 76 isolates harbored plasmids with an average of 5.5 plasmids (range from 1-10) in each strain. Plasmid profiling could distinguish 22 different *E. coli* genotypes in all isolates with a range of similarities from 50% to 100%.

Conclusion: These data mandate local monitoring of drug resistance and its consideration in empirical therapy of *E. coli* infections. Plasmid analysis of representative *E. coli* isolates also demonstrates the presence of a wide range of plasmid sizes, with no consistent relationship between plasmid profiles and resistance phenotypes. Plasmid profiles distinguished more strains than did the antimicrobial susceptibility pattern.

Keywords: *Escherichia coli;* Uropathogen; Children