

Evaluation of Prevalence of Enterotoxigenic *E. Coli* (ETEC) in Children Less than 2 Years Old in Shiraz

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Background & Objectives: Enterotoxigenic *E. coli* (ETEC) is the second largest group of diarrheagenic *E. coli* among weaning infants in developing countries. Studies have shown that, at least children attack 2 to 3 times a year with ETEC during their first ages. The purpose of this study is to assess the prevalence of ETEC strains and virulence genes in children under 2 years in Shiraz.

Methods: In this cross sectional study, total of 285 diarrhea samples were collected from children in Shiraz, in 2010. Diarrheagenic *E. coli* (DEC) strains were isolated by common biochemical analysis. The antibiotic resistance of isolated strains was evaluated using disc diffusion methods. ETEC strains was isolated by presence of stIa, stIb and It genes using real-time multiplex PCR.

Results: Out of total 285 diarrheal samples were tested, 49 (17%) were identified as *E. coli* by biochemical tests. ETEC was found in 7 cases (14/3%) of DEC samples. Of the 7 ETEC isolated strains; It and stIa genes were detect in 4 and 1 samples respectively. Both It and stIa were found in 2 (4%) samples. stIb gene was not detectable in any of the samples. All ETEC strains were susceptible to chloramphenicol, amikacin and nitrofurantoin and resistant to penicillin and macrolides. Multi-drug resistance (MDR) was shown in 89.2% of DEC and 100% of ETEC strains. 71.4%, 14.3% and 14.3% of ETEC strains were resistance to 4, 5 and 9 classes of antibiotics.

Conclusion: The present study revealed a high prevalence of ETEC among DEC strains in children in this region of the world. This type of pathogen should therefore be considered when designing preventive strategies for people living in Iran. Also, the high number of multi-drug resistant isolates gives rise to concern. Regular monitoring of antibiotic resistance seems necessary to improve our guidelines for empirical antibiotic therapy.

Keywords: Enterotoxigenic *E. coli*; Children; Diarrhea; Shiraz