

Determination of Adhesion Virulence Factors of EPEC (eaeA-, BfpA-) Strains

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Background & Objectives: Enteropathogenic *Escherichia coli* (EPEC) is major cause of infantile diarrhea among children less than 5 years old in developed and developing countries. The central mechanism of EPEC pathogenesis is a lesion called ‘attaching and effacing’ (A/E), which is characterized by intimate adherence of bacteria to the intestinal epithelium with a consequent loss in microvillus structure and effacement of the intestinal villi. The eae gene which is located in the ‘locus of enterocyte effacement’ (LEE) pathogenicity island and the bfpA gene, located on a plasmid called the EPEC adherence factor (EAF), have both been used for identification of EPEC and for subdivision of this group of bacteria into typical and atypical strains. On the other hand, there are some strains of *E. coli* that are categorized into EPEC serologically, but are eae-/bfp-. The aim of the present study is to examine existence of toxB (EHEC pO157 plasmid-encoded protein), paa (porcine attaching and effacing lesion-associated protein), lpf (long polar fimbriae) adhesion genes in these strains.

Methods: A total 70 collected strains of EPEC (eaeA-, bfpA-) were used in this study. DNA of strains have extracted by phenol-chloroform methods. Virulence factor genes for *E. coli* strains were detected by polymerase chain reaction of toxB, paa and lpf adhesion genes.

Results: PCR was positive for the toxB gene in 2 of 70 (2.85%) , paa in 3 strains of 70 (4.28%) and lpf in 22 strains of 70 (31.22%). One of the strains was positive for both paa and lpf.

Conclusion: We conclude that EPEC strains that possess the lpf gene are common in EPEC (eaeA-, bfpA-) strains. Further investigation of the virulence properties of these strains are needed to elucidate the role of these virulence factors in diarrhea disease among Iranian children.

Keywords: Enteropathogenic *Escherichia Coli* (EPEC); Diarrhea; Adhesion Virulence Factors