The Detection of Fimbrial encoding Genes in E. coli Strains Isolated from Patients with Urinary Tract Infection

Abstract

Background and objectives: The ability of adherence to the surface of host cell is very critical in the colonization of microbial pathogens. It has been revealed that E.coli strains that infect urinary tracts have different Fimbria such as I, S, P, FIC, Dr, and fimbrial adhesions.

Material and Methods: In this study, 363 urine samples were obtained from patients with Urinary Tract Infections referred to clinical laboratories in Western areas of Tehran, 2008-2010. By using biochemical tests, 200 samples were confirmed to be E.coli. First, DNA was extracted by boiling method and then the presence of fimbria fim, sfa, pap, foc, and afa genes tested by PCR.

Results: of 200 samples, the frequency of fimbria fim, sfa, pap, foc, and afa genes are 188 (%94), 34 (%17), 20 (%10), 61 (%31) and 71 (%35.5), respectively.

Conclusion: The results show that fim and sfa are the most fimbrial genes of E.coli isolated from urine samples. This information can be valuable in etiology of urinary tract infection (UTI), UTI administration, and vaccine production.

Key words: Urinary tract infection, fimbria, Bacterial, Escherichia coli (UPEC)