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Original Article

Serotypes of Enteropathogenic Escherichia coli Isolated from Children Under 5 Years of Age

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Abstract:

Background: The purpose of this study was to find out the frequency of different serotypes of enteropathogenic *Escherichia coli* (EPEC) among healthy/diarrheal cases.

Methods: A total of 191 strains, 111 from diarrheal and 80 from asymptomatic persons were examined. Determination of the EPEC serogroups was performed by agglutination tests using polyvalent and monovalent O antiserum. PCR-RFLP analysis of the flagellin-encoding (*fliC*) gene and agglutination tests using polyvalent and monovalent sera against H antigens (H1 to H 56) according to the instructions of the manufacturer was performed.

Results: Seventeen (8.9%) strains were non-motile and untypable with conventional serotyping method that showed as H⁻. Forty-three *fliC* restriction patterns were found for motile and non-motile serotypes. Each motile sero-type was characterized by one or two *fliC* specific restriction patterns. O142:H48 (6.8%), O86:H48 (6.3%), O111:H21 (4.7%) and O127:H21 (4.2%) were the most prevalent serotypes, and O55:H12/45, O86:H48, O127:H21, O142: H48, O126:H48 and O126:H19 serotypes were the most frequently agents in diarrheal cases, compared to asymptomatic children ($P < 0.05$). There were common EPEC serotypes in diarrheal and asymptomatic children, however some serotypes either found only in diarrheal cases or isolated from asymptomatic persons.

Conclusion: Some serotypes were isolated more frequently from diarrheal cases than asymptomatic persons. The conventional serological method using antisera is the basis for the H typing system in *E-coli*, but it is impossible to serotype non-motile bacteria. PCR-RFLP analysis of *fliC* gene is a practical method in identifying the H variant in motile and non-motile EPEC serotypes and is useful for epidemiological studies.

Keywords:

Epidemiology , *EPEC Serotypes* , *fliC gene* , *PCR-RFLP* , *Diarrhea*

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