Frequency of Shiga –toxin producing E.coli (STEC) in patients with hemorrhagic colitis referring to Tehran hospitals

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Abstract

Background&Objective: Shiga-toxin producing E. coli (STEC) belonging to several different O serotypes are one of the etiological agent of diarrhea. The STEC strains are considered as an etiological agent for enteritis after non-typhoidal salmonellosis and Campylobacter. They have also been associated closely with the hemolytic uremic syndrome (HUS) and hemorrhagic colitis(HC). The aim of this study was to determine of the frequency of STEC in patients with hemorrhagic colitis referring to Tehran hospitals.

Materials&Methods: From March to September 2004, 70 patients with hemorrhagic colitis (Case)an 70 patients with diarrhea (Control) were included in this study. The stx gene was detected by PCR and was used for the determination of STEC strains. Slide agglutination with specific antisera used to detect O serogroup. Polymerase chain reaction- restriction fragment length polymorphism (PCR-RFLP) analysis of the flagellin gene (fliC) was performed for determining their flagellar antigen (H).

Results: Two samples (2.9%) from Hemorrhagic colitis cases and 12 samples (17.1 %) from diarrheal cases were positive for STEC. There was no significant correlation between STEC and Hemorrhagic colitis but there was a significant correlation between STEC and diarrhea ($p<0.05$). STEC isolates O142:H48 serotype was from hemorrhagic colitis cases and O126:H47, O126:H6, O26:H4 and O111:H23 serotypes were from diarrheal cases. These serotypes were not reported in hemorrhagic colitis cases.

Conclusion: Our data showed that there was no significant correlation between STEC and hemorrhagic colitis. This could be explained since serotype responsible for hemorrhagic colitis i.e. O157:H7 serotype is not present in Iran.

Key Words: STEC, Hemorrhagic colitis, PCR, Serotyping, O157:H7