

The Rate of HEP-2 Cellular Invasion of *Salmonella* Serogroups in Diarrhea Patients

Soltan Dallal, MM.(PhD)

Professor of microbiology, Food Microbiology Research Center, Tehran University of Medical Sciences. Tehran, Iran

Rahimi Forushani, A. (PhD)

Associated Professor of Biostatistic, School of Public Health, Tehran University of Medical Sciences. Tehran, Iran

SharifiYazdi, M K. (PhD)

Professor of Microbiology, Zoonotic Research Centre, Department of Laboratory Sciences, School of Para Medicine, Tehran University of Medical Sciences. Tehran, Iran.

Rastegar Lari, A. (PhD)

Professor of microbiology, Department of Laboratory, school of Paramedical Sciences, Tehran University of Medical Sciences. Tehran, Iran

Nikmanesh, B.(MSc)

PhD student of parasitology, Tehran University of Medical Sciences, Tehran, Iran

Aminharati, F.(MSc)

MSc of Mycology, Department of Pathobiology, School of Public Health, Tehran University of Medical Sciences. Tehran, Iran

Corresponding Author:

SoltanDallal, MM.

Email:

soltanirad34@yahoo.com

Received: 27 Nov 2011

Revised: 07 Nov 2012

Background and Objective: Gastroenteritis is one of the most common forms of Salmonellosis, which is a worldwide problem. The invasive characteristic of intestinal bacteria is one of their pathogenicity mechanisms, which can be easily investigated by cell culture technique. In this study, the invasive characteristic of some *Salmonella* serogroup was investigated by using HEP-2 cell.

Material and Methods: The rectal soaps were prepared from 280 diarrhea patients referred to Imam Khomeyni and children medical centres, 140 with bloody diarrhea and 140 with watery diarrhea as a comparison group. The rectal soaps were obtained from the patients before taking any antibiotics, and 140 rectal specimens were taken from healthy people as a control group. All the samples were inoculated in differential and selective media, like Hektoen and Xylose lysine deoxycholate (XLD) agar. After incubation at 37°C for 24 hours, the colonies were examined and identified by conventional biochemical and serological tests. Using HEP-2, cellular invasion characteristic of *Salmonella* serogroups was assessed. Moreover, the antibiotic resistance patterns were performed according to clinical and laboratory standards institute (CLSI).

Results: Of all tested samples, 35(8.3%) are *Salmonella* strains. The frequency of *Salmonella* is reported for bloody diarrhea (5.2%), watery diarrhea (1.7%) and control group (1.4%). The most abundant serogroups with invasive characteristic, using HEP-2 cell culture, are serogroup B (62.9%) and D (17.2%).

Conclusion: The results obtained in this study show that the majority of *Salmonella isolates* are without invasive characteristic.

Key words: *Salmonella*, Diarrhea, cell invasion, cell culture

This paper should be cited as: SoltanDallal MM, RahimiForushani A, SharifiYazdi K, Rastegar Lari A, Nikmanesh B, Aminharati F. [The Rate of HEP-2 Cellular Invasion of *Salmonella* Serogroups in Diarrhea Patients]. MLJ. 2013; 7(1):