

Prevalence and Characterization of *Listeria monocytogenes* Isolated From Iranian Food

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Background & Objectives: *Listeria monocytogenes* is an opportunistic intracellular pathogen that has become an important cause of human infections worldwide. In recent years, epidemiological and laboratory investigations revealed that contaminated food is an important factor in transmission of bacteria to humans. With a recent increased consumption of Ready- to Eat and heat-to-eat food products, *Listeria monocytogenes* has emerged as a significant foodborne pathogen causing serious illness in infants, pregnant women, elderly and immunosuppressed individuals, with symptoms ranging from septicemia, meningitis, encephalitis and abortions to occasional death. Multiple key virulence factors such as hemolysin, phosphatidylinositol specific phospholipase A are important in *Listeria monocytogenes* pathogenesis.

Methods: In this study, a total of 130 food samples including cheese, cream, kashk, sausage, beef and chicken concentrate were collected during December 2009 and May 2011 from different supermarkets in Tehran and Azarbayjan (Iran). Bacterial strains were identified by standard microbiological and biochemical Methods and antibiotic resistance of isolated strains was evaluated. PCR Methods was done to amplify two gene fragments, a 1590 bp for hly and a 954 bp for plc-A genes respectively.

Results: *Listeria monocytogenes* was found in 4 food samples (3.1%) studied. Among food samples, *Listeria monocytogenes* was isolated from cheese, chicken and beef meat concentrate samples but sausage, cream and kashk samples had no bacteria. Both bands of 1590 and 954 bp amplified for hly and plc-A genes respectively, were detected by PCR in all of isolated strains. Penicillin resistance was seen in 2 (50%) of isolated bacteria.

Conclusion: Our results showed that food isolates like clinical isolates could be invasive and all of them consist of both hly and plc-A genes. Since pregnant women are at high risk for listeriosis (17 times more than normal non-pregnant women), educational and preventive programs for this group and other high risk groups for listeriosis are essential. These programs should organize in 2 fields: education of food industry personnel about hygienic preparing and packaging of food ingredients and awareness of pregnant women about avoidance of unpasteurized cheese and Ready-to-Eat food consumption.

Keywords: *Listeria monocytogenes*; Food; Iran