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Poster Session II

Molecular diagnostics of parasites

MOLECULAR CHARACTERIZATION OF HUMAN ISOLATES OF GIARDIA LAMBLIA FROM SOUTH-WEST OF THE ISLAMIC REPUBLIC OF IRAN USING PCR – RFLP METHOD

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Objectives: *Giardia lamblia* is one of the most prevalent enteropathogenic microorganisms of human all over the world, including Iran . We carried out the study to determine the genetic diversities of *G. duodenalis* isolates collected from subjects who were infected by the parasite and investigate the correlation of socio-demographic factors and clinical manifestations of giardiasis with the parasite's assemblages in Chaharmahal va Bakhtiyari province of Iran.

Methods: Eighty nine *Giardia*-positive stool samples collected from subjects who visited the clinical laboratories of the province health centers during April 2011- March 2012 for health check-ups were included in this study. The parasite's cysts were isolated and purified from the stool samples by 85% M sucrose method. The genomic DNA of the cysts was extracted using QIAamp DNA Stool Minikit (QIAGEN Company) according to the instructions of the manufacturer. The PCR-RFLP assay, targeting the glutamate dehydro-genase (*gdh*) and triose phosphate isomerase (*tpi*) genes, was applied to differentiate assemblages of the parasites. The size of DNA amplicons were determined by a 8% polyacrylamide gel electrophoresis and silver nitrate staining. The SPSS software ver. 16 was used for analyzing data.

Results: The results of PCR using TPI gene showed that out of eighty nine samples , 43 (48.3%) were positive for the 148 bp-*tpi* amplicon only, implying assemblage A , 36 (40.4%) were positive for the 81-bp *tpi* amplicon only, implying assemblage B and the remaining 10 samples (11.3%) were positive for both *tpi* gene amplicons, indicating the presence of a mixed population of these two assemblages (Tables 3,4). The results of PCR-RFLP assay using *gdh* gene (432 bp amplicon) also showed the sub-assemblages A_I, A_{II} , B_{III} , B_{IV} and A_{II}+B_{III} combined of *G.lamblia* among infected subjects. The study showed a significant correlation between *G. duodenalis* assemblage A and diarrhea , abdominal discomfort and loss of appetite in the subjects ($p < 0.05$).

Conclusion: Our findings conformed to the notion that in this region only the assemblages A and B were contagious for humans. Although , the prevalence of assemblage A was almost equal to assemblage B, but among the clinical presentations of giardiasis diarrhea was associated with the assemblage A of the parasite .