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Acta Medica Iranica
2009;47(4) : 30-36

Original Article

Genetic Characterization of *Cryptosporidium* spp. among Children with Diarrhea in Tehran and Qazvin Provinces, Iran

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Received: May 1,2008
Accept : September 1,2008
Available online: September 30,2008

Abstract:

Background: *Cryptosporidium* is an intracellular apicomplexan parasite that infects a wide range of vertebrates including humans. Cryptosporidiosis is a major cause of diarrhea in children with and without human immunodeficiency virus (HIV) infection in developing countries. More recently, the molecular methods for identification of morphologically indistinguishable species have been developed. The aim of this study was to determine the characterization of various species of this coccidian among children with diarrhea by using molecular methods.

Methods: Fecal samples were collected from 1263 children with diarrhea who referred to Pediatrics Medical Centers in Qazvin and Tehran, two central provinces of Iran. Initial identification of *Cryptosporidium* was carried out by Zeihl-Neelsen acid-fast staining method of stool samples. DNA was extracted from positive microscopically samples and were subjected to a two step nested PCR-RFLP based on SSU-rRNA gene.

Results: Out of 1263 collected samples, 31 (2.5%) were found to be contained *Cryptosporidium* oocysts. RFLP analysis showed that 80.6% of the positive isolates were *Cryptosporidium parvum*, 16.1% *C. hominis* and 3.2% had mix infection pattern of both C. *parvum* and *C. hominis*.

Conclusion: Our results showed that the zoonotic pattern of transmission is predominant and has considerable significance in epidemiology of cryptosporidiosis in the study areas.

Keywords:

Cryptosporidum , *Genotyping* , *SSU-rRNA* , *Children* , *Diarrhea*

TUMS ID: 11863

Full Text HTML Full Text PDF 412 KB