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Non-molecular and molecular tests for detection of cryptosporidiosis in children in Duhok city, Kurdistan region, Iraq

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The study was performed to detect the oocytes of *Cryptosporidium* in children in Duhok city, Kurdistan region of Iraq by examining 332 stool samples of children using Modified Ziehl Neelsen Method (MZN). A total of 122 stool samples from children were randomly chosen were examined to detect *Cryptosporidium* by ELISA and conventional PCR test. By MZN, the prevalence of *Cryptosporidium* oocytes was 66.95% in children; 44.68% in immunocompromised (ICM) and 22.27% in immunocompetent (ICT) children. Among ICT children, the prevalence rate was highest among less than one year of age (39.34%) in diarrheic group, while in non-diarrheic group, the prevalence rate was highest among 1-4 years age (28.57%). Among ICM children, the relations were non-significant among ages. Out of the 122 stool samples of children of which 26 (21.31%), 30 (24.59%) and 48 (39.34%) were positive by MZN, ELISA and PCR, respectively. In diarrheic children, the highest prevalence rate was among those who were less than one year old by MZN and ELISA, while it was among 9-12 year old by PCR. In non-diarrheic children, the highest prevalence rate was among less than one year old by MZN and ELISA, while it was among 1-4 year by PCR. This study indicates that asymptomatic infection is common and could be detected by PCR among different age groups of children. In present study, the results of sequences analyzing of PCR products showed identical to the *Cryptosporidium* sequences in the GenBank, therefore PCR can be used as a specific and sensitive tool for diagnosis of *Cryptosporidium*. In this study, ELISA was more sensitive and specific than MZN which were 82.5% and 90.91% respectively. Also PCR was more sensitive and specific than MZN which were 97.5% and 73.82% respectively.

Biography

Adel T M Al-Saeed is a Professor in Molecular Parasitology. He has his expertise in teaching medical parasitology undergraduate and post graduate students for more than 30 years. He has supervised MSc and PhD students.

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