Dear Editor,

Entamoeba histolytica, the causative agent of intestinal amoebiasis affects more than 50 million people worldwide. Amoebiasis is considered to be the most common parasitic infection particularly in the tropics and sub-tropics.[1] It is the second leading cause of the death from parasitic diseases worldwide.[2] Humans are the primary reservoir and infection happens to be by ingestion of mature quadri-nucleate cyst through contaminated food and water.[3] Treatment and management of infection with E. histolytica has been considerably affected since 90% of the infected individuals remain asymptomatic. Clinical diagnosis of amoebiasis also remains elusive in most of the cases due to contrasting illness course in different communities, varied clinical presentations and unavailability of infrastructures in the developing countries.

Difficulty In the diagnosis of amoebiasis is due to the presence of other harmless commensals such as Entamoeba dispar as reported by Brumpt in 1925 and other noninvasive amoebae such as Entamoeba moshkovski, E. poleki, E. coli, and E. hartmani.[4-7]

The laboratory diagnosis of E. histolytica currently relies on the direct microscopic identification of the parasite. Other methods of diagnosis include the culture, using Boek and Drbohlav’s biphasic amoebic medium, isoenzyme assay using different zymodemes, stool ELISA on monoclonal antibodies to galactose specific adhesin, rapid indirect haemagglutination assay (IHA) to detect serum antiamoebic antibodies and polymerase chain reaction (PCR) nested multiplex PCR targeting 16s like rRNA gene, realine PCR, single round PCR, and PCR-RFLP (restriction fragment length polymorphism).[8-12]

Of the available diagnostic techniques, the microscopic detection of the morphological forms of the parasite in stool samples is often used in developing countries. Limitation of the microscopic detection is that it is insensitive to differentiate between pathogenic strains of entamoeba from other nonpathogenic amoebae. Diagnosis by culture, though, is much sensitive and specific, is laborious and time consuming which may require several weeks. Amoebic culture can also show false negative results which can be accounted to either delay in processing or probably antiamoebic therapy prior to stool collection. ELISA using monoclonal antibodies (MAbs) directed against pathogen specific epitopes of the galactose adhesin means to diagnose amoebiasis. Detection of antibodies to E. histolytica in patients by using indirect haemagglutination assay (IHA) may fail to distinguish past from present infection.

Results of several studies on detection and differentiation of E. histolytica, E. dispar, E. moshkovski and other harmless amoebae in clinical specimen using PCR showed the potential use of molecular methods in the diagnosis of amoebiasis.[13] A recent study which involved 218 stool samples has demonstrated the use and role of PCR in differentially diagnosing pathogenic E. histolytica (51) from morphologically resembling non-pathogenic E. dispar (39),[14] which otherwise by conventional microscopy cannot be differentiated. Shih-yu Liang et al. in their study have evaluated 130 fecal specimens and showed that molecular methods have 100% specificity towards differential identification of E. histolytica and other nonpathogenic amoebae.[15] Significance and advantages of DNA based techniques over other methods in identifying the parasites, quantify and provide important information on formulating and implementing the parasite control programmes in both human and animal is highlighted in a recent article by Hunt PW.[14] Diagnosis of amoebiasis is usually performed on clinical grounds alone in most of the endemic countries having limited resources. Microscopic methods, though are cost-effective require well-trained laboratory personnel. This has remarkably affected the estimates of global prevalence of amoebiasis due to E. histolytica. The prevalence and the true epidemiology of amoebiasis are still unclear. Previous studies showing high rates of infection with E. histolytica may not be true as studies reported that E. dispar is about 10 times more common.[15]

The focus should now be on recent developments in the diagnosis and management of amoebiasis. With advance in the laboratory techniques that can differentiate pathogenic E. histolytica from other nonpathogenic amoebae studies must be encouraged to estimate the true prevalence of E. histolytica infection.

Clinicians and microbiologists must focus on specific diagnosis of E. histolytica infection by employing the advanced diagnostic tools, thereby avoiding unnecessary and unwarranted chemotherapy.

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References


Access this article online

Quick Response Code: www.amhsr.org

DOI: 10.4103/2141-9248.105679

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