Abstract

Amebic dysentery, one of notifiable parasitic diseases in Taiwan, is caused by the protozoan Entamoeba histolytica. E. histolytica resides mostly in the intestinal tract of human host. It may further invade the tissue and cause severe colitis and abscess. The clinical diagnosis of intestinal amebiasis mainly relies on the microscopic examination of E. histolytica cysts and/or trophozoites in the fecal specimen. However, the amebiasis specialist meeting held by WHO/PAHO/UNESCO in 1997 claimed that the original ？H？HE. histolytica？H？H cysts/trophozoites observed under microscopic examination are indeed composed of at least two species of protozoa: E. histolytica and E. dispar. The former one is pathogenic and may cause severe disease. Treatment, control and prevention measures should be taken. The latter one is merely commensal ameba residing in the human intestinal tract. In this project, we have developed a diagnosis system for the differentiation of E. histolytica from E. dispar based on the sequence variation and multiple copies of small ribosomal RNA genes. Fecal specimens were collected from the alien workers health examination in a Taipei Municipal Hospital. Out of 1,972 specimens, 128 (6.5%) samples were screened as ELISA positive, indicating E. histolytica/dispar infection. These positive samples were further analyzed. E. histolytica II ELISA test, which could specifically detect E. histolytica and the results showed that E. histolytica were detected in 19 (14.8%) specimens. On the other hand, E. histolytica/dispar cysts or trophozoites were detected in 12 (9.3%) specimens by microscope examination followed by PVA fixation and Trichome stain. Using nested PCR with specific probes for E. histolytica and E. dispar, 31 (24.2%) samples were positive, with 12 E. histolytica positive, 25 E. dispar positive and 6 mixed infection. The sensitivity of each assay was evaluated by spiking the cultured protozoa into regular stool. The specificity of nested PCR method was examined using restrict enzyme digestion mapping of PCR products. Meanwhile, 823-bp products out of first PCR amplification were sequenced and compared with those of standard strain. In conclusion, a differential diagnostic method using nested PCR is suggested for the detection of E. histolytica in clinical specimen.

Keywords：Entamoeba；differential diagnosis；polymerase chain reaction