Occurrence of enteric parasitic infections among HIV-infected individuals and its relation to CD4 T-cell counts with a special emphasis on coccidian parasites at a tertiary care centre in South India

Chinnambedu Ravichandran Swathirajan, Ramachandran Vignesh, Ambrose Pradeep, Pachamuthu Balakrishnan

Abstract
Diarrhoea is one of the major complications occurring in over 90% of HIV-infected individuals in developing countries. Coccidian group of parasites, being opportunistic pathogens, have been implicated as the most common causative agents of diarrhoea among HIV-infected population.

Aims: The aim was to study the magnitude of parasitic diarrhoea with special context to coccidian parasitic infections in HIV-infected individuals and their association with the patient's immunological status measured by CD4 T-cell counts. Settings and Design: This investigation was performed between January 2002 and December 2014 at a tertiary HIV care centre in Chennai, South India. Materials and Methods: Stool samples were collected and microscopically observed for parasites using direct, formal-ether-concentrated wet mounts and modified acid-fast staining for coccidian parasites. CD4 T-cell counts were done by FACScount. Statistical Analysis Used: All statistical analyses were performed using GraphPad Prism software, version 5.0, and $P < 0.05$ was considered statistically significant. Results: Coccidian parasitic infection accounted for about 23.4% of parasitic infections, and of these, *Cryptosporidium* spp., followed by *Cystoisospora belli* was observed to be the most common cause of diarrhoea (88.8%), followed by *Cystoisospora* spp. (9.9%) and *Cyclospora* spp. (1.3%). Trend analysis of coccidian aetiology during the study period revealed a significant rise in the positivity of *C. belli* and *Cryptosporidium* spp. ($P = 0.001$). Among the HIV patients with CD4+ T-cell counts <200 cells/µL, *Cryptosporidium* infection was most common (90%), followed by infection with *C. belli* (61.4%). Conclusions: Coccidian parasites continue to be the most common aetiological agent of diarrhoea among patients with HIV. The increasing trend of positivity of both cystoisosporiasis and cryptosporidiosis over the study period and the high positivity of cryptosporidiosis in patients with lower CD4+ T-cell counts are issues of serious concern. The findings call for the need for the early diagnosis of coccidian parasites and appropriate intervention among HIV-infected patients.

Keywords: Coccidian parasitic infection, HIV, parasitic diarrhea

DOI: 10.4103/ijmm.IJMM_16_164