

Abstract

Cyclospora cayetanensis is a protozoan parasite causing gastroenteritis in immunocompetent as well as immunocompromised humans worldwide. Clinical epidemiology and pathogenesis of *Cyclospora* species was studied in 64 wild-trapped *Cercopithecus aethiops* at Institute of Primate Research, Nairobi. The monkeys were screened for *Cyclospora* parasites by conventional microscopy, examination of hot safranin stained faecal slide smears, *Cyclospora* specific antibody responses and molecular characterization of DNA following nested PCR amplification. Efficacy of trimethoprim-sulphamethoxazole therapy for *Cyclospora* positive monkeys was evaluated. Experimental *Cyclospora* infections were established by oral inoculations. Oocyst shedding was used to confirm establishment and duration of infection. Gross and histopathological characteristics were described. The animals remained asymptomatic, *Cyclospora* parasites were identified in 41 (64%) of animals with infections mostly in male adults. Incubation period was 14-17 days, the duration of infection one to two months. A PCR product of 294 base pair was visualized, confirming *Cyclospora* species in the natural and experimental infections. *Cyclospora* specific antibody responses were recorded in positive monkeys. Response to treatment was evaluated by cessation *Cyclospora* oocyst shedding by D17 post-treatment and decreased *Cyclospora* specific antibody levels. Relapse infections occurred in 33% of the treated animals but responded to second TMP-SMX therapy. Pathological findings recorded were moderate haemorrhagic enteritis, parasites vacuoles in the enterocytes, mild lymph node enlargement, lymphocytic infiltrations, focal necrosis and granulomas in the liver. In conclusion, the study demonstrated that African green monkey may offer an appropriate model for study of Cyclosporiasis.