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An advanced uracil DNA glycosylase-supplemented loop-mediated isothermal amplification (UDG-LAMP) technique used in the sensitive and specific detection of Cryptosporidium spp. in AIDS patients

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The rapid and accurate detection of Cryptosporidium spp. is critically important for the prevention and timely treatment of cryptosporidiosis in AIDS patients (APs). This study was conducted to examine a UDG-LAMP technique for the first time to diagnose cryptosporidiosis in APs. After collecting demographic and clinical data, three stool samples were collected from the participants (120 volunteering APs). The microscopic examination of stained smears using the acid-fast method and the UDG-LAMP assay were performed for each sample. 10% of APs were infected with Cryptosporidium spp. The number of detected cryptosporidiosis cases using the acid-fast staining and UDG-LAMP methods were significantly different ($P<0.001$). Diarrhea and weight loss were found to be significantly associated with cryptosporidiosis in patients ($P<0.05$). The pretreatment of LAMP reagents with UDG successfully eliminated the likelihood of product re-amplification remaining from previous reactions. The UDG-LAMP technique could detect cryptosporidiosis in APs with high sensitivity and rapidity without carryover contamination.

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