

**TITLE:** DIARRHEIOGENIC *Escherichia coli* IN PATIENTS WITH HIV/ AIDS IN PORTO VELHO, RONDÔNIA STATE, WESTERN BRAZILIAN AMAZON

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**ABSTRACT**

In patients with HIV/AIDS, *Escherichia coli* has been associated with chronic infection as a consequence of several virulence factors. A decreased CD4<sup>+</sup> T-cell count does not occur in the plasma but rather in the gastrointestinal tract, the greatest target of HIV, enabling opportunistic infections. Within this context, the objective of this study was to conduct genotypic characterization of diarrheagenic *E. coli* isolated from patients with HIV/AIDS living in Porto Velho, state of Rondônia, Brazil. In this observational study, of cross-sectional design, patients were selected from inpatient and outpatient services, in referral centers for care of HIV/AIDS. The sample included 207 patients whose socioeconomic, clinical, and diagnostic features were assessed, with molecular emphasis on *E. coli*. Additionally, 25.6% (53/207) had not completed middle school, 41.7% (86/207) earned minimum wage, and 86% (169/207) had no access to wastewater treatment system at home. Regarding clinical variables, the CD4<sup>+</sup> T-cell count was <50 cells/mm<sup>3</sup> in 25.6% of patients (n = 53/207). Viral load was 50–100,000 copies/mL in 28.5% (n = 59/207), and 28% (n = 58/207) reported not using highly active antiretroviral therapy (HAART). Over half of the sample (58.94%, n = 122/207) tested positive for *E. coli*. A total of 260 colonies suggestive of *E. coli* were analyzed in these 122 samples: 13.08% (n = 34/260) were positive for enteroaggregative *E. coli* (*pic* and/or *aggR* genes), 6.15% (n = 16/260) for enteropathogenic *E. coli* (*bfpB* and/or *escV*), 4.62% (n = 12/260) for diffusely adherent *E. coli* (1845 *daaE*) and 1.15% (n = 3/260) for enteroinvasive *E. coli* (*invE*). Regarding cell adherence patterns, 10.77% (n = 28/260) exhibited an aggregative pattern. Localized adherence was observed in 11.15% (n = 29/260), and diffuse adherence in 18.46% (n = 48/260). Antimicrobial susceptibility performed on the diarrheagenic *E. coli*-positive specimens of 104 patients showed that 82.69% (n = 86/104) had ampicillin-resistant *E. coli*, 75.96% (n = 79/104) had sulfamethoxazole/trimethoprim-resistant *E. coli*, and 54.81% (n = 57/104) had tetracycline (TET)-resistant *E. coli*. Overall, 67.31% (n = 70/104) were multidrug-resistant. The regular use of antiretroviral drugs and clinical and immunological monitoring of patients with HIV/AIDS can improve their quality of life.

**Keywords:** Diarrheagenic *E. coli*; HIV/AIDS; Multidrug-resistant

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