

ISOLATION AND CHARACTERIZATION OF ADHERENT-INVASIVE *ESCHERICHIA COLI* IN CROHN'S DISEASE PATIENTS IN BRAZIL

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Crohn's disease (CD) is an inflammatory bowel disease (IBD) characterized by chronic inflammation of the intestine in humans. The etiology of CD remains unknown, however, the most common hypothesis is that chronic inflammation results from an abnormal inflammatory response against intestinal microbiota in a genetically susceptible host. Several studies have demonstrated that the intestinal mucosa of CD patients is abnormally colonized by adherent-invasive *Escherichia coli* (AIEC) strains. However, to date, no studies have focused on the involvement of such *E. coli* strains in CD patients in Brazil. The aim of this study was to isolate and characterize the *E. coli* strains associated from intestinal mucosa in CD patients in Brazil. Biopsies were performed on 35 subjects: 10 CD patients in active phase, 15 CD patients in remission phase and 10 controls (without intestinal disease). Although the difference was not significant, the colonization level of the ileal mucosa by adherent bacteria is higher in CD patients than in the control group. Among 270 isolates strains, 241 were identified as *E. coli* strains. Mark from different phylogenetic groups of *E. coli* was carried out by PCR. In controls patients, 47.9% of the strains belong to group A, 2.1% in the B1 group, 6.3 % in the B2 group and 43.7% in group D. In CD patients, 36.8% of the strains belong to group A, 30% in the B1 group, 10.9% in the B2 group and 22.3% in group D. In CD patients, a difference between the classification of *E. coli* strains was observed related to disease activity, especially among groups B2 and D. The adhesion and invasion ability of *E. coli* strains isolated were determined using human intestinal epithelial cells (I-407) and we observed that 96.9% of the isolated strains from CD patients are not invasive. All strains with the capacity of invasion were selected to analyze its ability to survive and multiply in human macrophages (THP-1), and we observed that 76.19% of the selected strains can survive and multiply within human macrophages. This preliminary study on a small cohort of Brazilian CD patients suggests that the ileal mucosa of CD patients in Brazil is weakly colonized by *E. coli* strains having adherent and invasive properties.

Keywords: Inflammatory bowel disease, Crohn's disease, *Escherichia coli*