

TITLE

Mycobacterium avium subspecies *paratuberculosis* and Crohn's disease: a characterization of the interaction with the various aspects of the disease

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SUMMARY

Crohn's disease (CD) is a chronic and eventually granulomatous inflammatory bowel disease of unknown etiology and cure. *Mycobacterium avium* subspecies *paratuberculosis* (MAP), the etiologic agent of paratuberculosis, is also isolated in samples from human patients with intestinal diseases. Paratuberculosis, a chronic granulomatous enteritis, is characterized by diarrhea, weight loss, that affects ruminants which eliminates the agent via feces and milk, and veiling it to humans. The involvement of MAP in the pathogenesis of CD and other intestinal diseases is unclear and studies to clarify the presence and role of the agent and its relationship with variables involved in the development and evolution of the condition are relevant. The aim of the study was to analyze immunological, socioepidemiological, biochemical and therapeutic variables that may be associated with the presence of MAP. Sampling was of convenience, random and the population of origin were patients of the Alpha Institute of Gastroenterology (IAG) of the Hospital das Clínicas of the Universidade Federal de Minas Gerais (HC-UFMG). Blood samples were collected from 21 patients with CD, of whom six were in activity and 15 were in remission, eight patients with ulcerative colitis (RCU) and 10 control patients. The samples were submitted to real-time PCR for MAP, analyzes of oxidative stress and other variables. These results were submitted to statistical analysis to identify the interaction between the variables and the presence of MAP. Of the sampled population, MAP was detected in 10 (26.3%) of the 38 patients, seven (70%) had CD, 2 (20%) had RCU and one (10%) control. MAP was found more frequently among patients with CD, in which its presence accompanied the relevant increase of the polymorphonuclear cells, and significant alterations in the production of catalase and GST. This study is part of the global initiative "One Health" which proposes the integration of human, animal and environmental health.

Keywords: oxidative stress, paratuberculosis, inflammatory bowel disease, inflammation

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