ASSOCIATION OF MYCOBACTERIA OF HUMAN AND ANIMAL ORIGIN WITH THE PATHOGENESIS OF SARCOIDOSIS AND CROHN'S DISEASE

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Sarcoidosis and Crohn's disease are currently viewed as two pathologic conditions of unknown etiology that consist the consequence of a chronic immunological response associated with a genetic susceptibility and exposure to specific environmental or transmissible agents. The broad application of the polymerase chain reaction to the detection of mycobacteria provided substantial evidence to support the association of these pathogens with the causation of both diseases. Although these were in some cases consistent with the results obtained by culture, animal studies, or even small-scale clinical trials, findings were generally considered conflicting and effectively remained to this day inconclusive.

Therefore the aim of this study was to exploit the implication of mycobacteria to the etiology of sarcoidosis and Crohn's disease based on a common methodology that would rely on molecular diagnostic tests calibrated by intra-laboratory evaluation, case-control studies with patients from around Europe, and laboratory animal experiments.

Our results indicate that sarcoidosis and Crohn's disease can be attributed to an imbalanced immune response triggered to genetically susceptible individuals after exposure to *Mycobacterium tuberculosis* complex and *Mycobacterium avium* subspecies *paratuberculosis* (MAP) respectively. These often produce distinct typing patterns from those isolated from animals and food of animal origin, which indicates that zoonotic association cannot be proved in all cases although human exposure to MAP through these sources is definitely broad. Genetic susceptibility of the patients is associated with impaired ability of these individuals to deal with intracellular parasites and plays an important role to disease pathogenesis since in most cases the mycobacterial isolates are characterized by low viability and infectivity. However in those cases that mycobacteria were detected, in-situ hybridization proved that their role to the generation of infection was active. Anti-tubercular therapy administered to a small number of these patients with poor response to long-term corticosteroid treatment resulted to marked improvement of their condition.