TITLE: IMMUNOLOGICAL AND HISTOPATHOLOGICAL CHARACTERIZATION OF CUTANEOUS CANDIDIASIS.

AUTHORS: CAMPOIS, T.G.[1]; ZUCOLOTO, A.Z. [1]; DE ALMEIDA ARAUJO, E.J. [1]; SVIDIZINSKI, T.I. [2]; ALMEIDA, R.S. [1]; DA SILVA QUIRINO, G.F. [1]; HARANO, R.M. [1]; CONCHON-COSTA, I. [1]; FELIPE, I. [1]

INSTITUTION: [1]UNIVERSIDADE ESTADUAL DE LONDRINA, LONDRINA, PR (DEPARTMENT OF MICROBIOLOGY, CENTER FOR BIOLOGICAL SCIENCES, RODOVIA CELSO GARCIA CID KM 380 - 86057-970) [2] UNIVERSDADE ESTADUAL DE MARINGÁ, MARINGÁ, PR (AV. COLOMBO, 5790.)

ABSTRACT:
Chronic mucocutaneous candidiasis constitutes a heterogeneous group of syndromes, characterized by non-invasive infection of the skin, nails and mucosal membranes by the fungus *Candida spp*. Although symptoms are heterogeneous, in all cases there is a reduction in protective cytokines, favouring the development of disease. The normal role of cytokines in skin lesions is not well understood. The present study aimed to investigate the progression of disease, understand specific cellular and molecular components involved in immunity to *Candida albicans* and determine the balance between pro- and anti-inflammatory cytokines over the course of cutaneous infection in immunocompetent mice. BALB/c mice (five per group) were inoculated with 56106 *C. albicans* pseudohyphae in the deep dermis of the paw and analysed over 1–14 days post-infection. The contralateral paws were used for negative controls. Haematoxylin and eosin staining of skin sections during *C. albicans* infection was performed to analyse structural modifications to the epidermis such as hyperplasia, and infiltration of neutrophils and fibroblasts in the dermis. The cytokine populations were determined by capture ELISA using popliteal lymph node tissue. Pro-inflammatory cytokines (IL-6, TNF-a, IL-12, IFN-c and IL-17) were detected at significant levels during the initial phase of cutaneous infection and correlated with the rapid elimination of *C. albicans*. Anti-inflammatory cytokines (IL-13, IL-4, IL-10 and transforming growth factor-b) were detected on day 4 post-infection, and prevented exacerbation of inflammation and participated in healing oflesions. Thus, a balance between pro- and anti-inflammatory cytokines was fundamental for the resolution of infection. Importantly, these findings broaden our understanding of the imune mechanisms involved in chronic cutaneous candidiasis.

Keywords: *C. albicans*, Cutaneous candidiasis, Pro- and anti-inflammatory cytokines.

Development Agency: Fundação Araucária e Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (CAPES).