

ESVP/ECVP Poster Abstracts

Large animals

LOCAL ASSESSMENT OF THE IMMUNOHISTOCHEMICAL EXPRESSION OF FOXP3+ REGULATORY T LYMPHOCYTES IN THE DIFFERENT PATHOLOGICAL FORMS ASSOCIATED WITH BOVINE PARATUBERCULOSIS

D. Zapico, J. Espinosa, M. Criado, M. Fernández, M.C. Ferreras, J. Benavides and V. Perez

Department of Animal Health-Instituto de Ganadería de Montaña, University of León-CSIC, León, Spain

Introduction: *Mycobacterium avium* subsp. paratuberculosis infected animals show a variety of granulomatous lesions: focal forms, restricted to the gut-associated lymphoid tissue (GALT), related to latency and resistance, or diffuse lesions, with abundant (multibacillary) or scant (paucibacillary) bacteria, seen in clinical stages. Factors that determine the response to infection are not fully understood. Regulatory T cells (Foxp3+) might play an important role in the inflammatory response in paratuberculosis. The aim of this work was to quantitatively evaluate Foxp3+ T cell numbers in the different types of lesions, using immunohistochemistry.

Materials and Methods: Intestinal samples of twenty cows showing the different pathological forms of paratuberculosis were evaluated: uninfected controls ($n = 5$), focal lesions ($n = 5$), diffuse paucibacillary ($n = 5$) and diffuse multibacillary ($n = 5$) forms. Foxp3+ lymphocyte distribution was assessed by differential cell count in intestinal lamina propria (LP), GALT and mesenteric lymph node (MLN).

Results: A significant increase in the number of Foxp3+ T cells was observed in all infected animals. The increase was more pronounced in the group with focal lesions, where the highest number of positive cells appeared in the GALT, followed by MLN and LP. No specific distribution pattern was observed within the granulomatous lesions in any of the groups.

Conclusions: The presence of higher numbers of Foxp3+ T cells in the GALT of cows with focal forms suggests their participation in the containment of lesions at lymphoid tissue level, favouring infection latency and resistance, preventing the exacerbated inflammatory response that characterises the diffuse forms.

