

ESVP/ECVP Poster Abstracts

Large animals

IMMUNOHISTOCHEMICAL STUDY OF THE INFLAMMATORY CELLS PRESENT AT THE INJECTION-SITE GRANULOMAS INDUCED BY TWO DIFFERENT PARATUBERCULOSIS VACCINES

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Introduction: Paratuberculosis vaccines do not protect against infection but avoid the progression to clinical disease in the majority of vaccinated animals. However, the precise mechanisms that operate in vaccination are not fully understood. The aim of this study was to immunohistochemically characterize the inflammatory cells present in the granulomas that appear at the injection site.

Materials and Methods: Tissue samples were obtained, at 75 days post-vaccination, from two groups of 45-day-old lambs immunised with two available different paratuberculosis vaccines: one (n=4) with GUDAIR[®], the other (n=4) with SILIRUM[®]. Immunohistochemical staining of granulomas was carried out using antibodies against a general macrophage marker (Iba1), MHC-II, NRAMP1, M2 (CD204) and M1 (iNOS) macrophages, IL-4 and IL-10, TNF- α and T (CD3), B (CD20) and gd lymphocytes. Immunolabelled cells were counted.

Results: Cells expressing the different markers were all detected in granulomas, regardless of the vaccine employed. A higher number of Iba1, MHC-II, TNF- α and IL-4 positive cells was seen in granulomas induced by SILIRUM[®], with no changes in numbers and distribution of M2 and M1 macrophages or lymphocyte subtypes. The number of cells expressing NRAMP1 was highly variable in samples from animals vaccinated with GUDAIR[®].

Conclusions: Inflammatory infiltrates at the injection site of paratuberculosis vaccines are comprised of macrophages and lymphocytes, with no predominance of any subtype, suggesting that a simultaneous cellular and humoral immune response, with a pro- and anti-inflammatory component, is induced at this point. The higher number of MHC-II expressing cells could suggest better antigen presentation with SILIRUM[®].

