

Cytokines (IL 1 β and IL 6) responses in non-pregnant does infected with *Corynebacterium pseudotuberculosis* following intradermal route of infection in chronic state

Abstract

Corynebacterium pseudotuberculosis is the causative agent of caseous lymphadenitis (CLA) which commonly affects sheep and goats. The disease remains as a major disease causing economic loss to the small ruminant industries. There is little information related to responses of interleukin-1 β and interleukin-6 in the chronic states. This study was designed to determine the serum concentrations of interleukin-1 β and interleukin-6 (pg/mL) in non-pregnant does experimentally inoculated with *Corynebacterium pseudotuberculosis* via intradermal route in chronic form. Eighteen non-pregnant healthy Katjang does aged 2 years old were divided randomly into two groups. The control and the treatment groups consist of nine does each and were kept for 3 months. The control group was inoculated with PBS solution while the treatment group was inoculated intradermally with *C. pseudotuberculosis*. Serum samples were collected every 3 days (72 hours) for 3 months (2064 hours). The present study showed significant increase in IL-1 β (278 ± 19.19 pg/mL) after 1 day (24 hours) of post infection ($p < 0.0001$) which decreased sharply (98.31 ± 19.19 pg/mL) after 5 days (120 hours) of post infection ($p = 0.9293$) and attained a significant concentration (217.43 ± 19.19 pg/mL) after 3 months (2064 hours) of post infection ($p < 0.0048$) in does challenged with *C. pseudotuberculosis* compared to the control group. In contrast, the concentration of IL-6 increased significantly ($p < 0.0001$) to (56.43 ± 1.98 pg/mL) in 2 months (1392 hours) of post infection and then decreased significantly ($p < 0.0001$) to concentration of (22.18 ± 1.98 pg/mL) in 3 months (2064 hours) compared to the control group. In conclusion, the present study indicate that the importunity of *C. pseudotuberculosis* is associated with persistently high concentrations of IL-1 β and low concentration of IL-6 which, when interpreted, could severely contribute to pathological vicissitudes and injury of organs and tissues in the chronic stage of *C. pseudotuberculosis* infections.

Keyword: *Corynebacterium pseudotuberculosis*; Chronic form; Interleukin-1 β ; Interleukin-6; Non-Pregnant does; Intradermal route