

Responses of haptoglobin and serum amyloid A in goats inoculated intradermally with *C. pseudotuberculosis* and mycolic acid extract immunogen

ABSTRACT

Haptoglobin (Hp) and Serum Amyloid A (SAA) are a group of blood proteins whose concentrations in animals can be influenced by infection, inflammation, surgical trauma or stress. *Corynebacterium pseudotuberculosis* is the causative agent of caseous lymphadenitis (CLA), and Mycolic acid is a virulent factor extracted from *C. pseudotuberculosis*. There is a dearth of sufficient evidence on the clinical implication of MAs on the responses of Hp and SAA in goats. Therefore, this study was conducted to evaluate the potential effects of Mycolic acid (MAs) and *C. pseudotuberculosis* on the responses of Hp and SAA in female goats. A total of 12 healthy female goats was divided into three groups; A, B and C each comprising of 4 goats and managed for a period of three months. Group (A) was inoculated with 2 mL of sterile phosphate buffered saline (as a negative control group) intradermally, while group (B) and (C) were inoculated intradermally with 2 ml each of mycolic acid and $1109 \times$ cfu of active *C. pseudotuberculosis* respectively. The result of the study showed that the Hp concentration in goats inoculated with *C. pseudotuberculosis* was significantly increased up to 7-fold (1.17 ± 0.17 ng/L) while MAs showed a 3-fold increased (0.83 ± 0.01 ng/L) compared with the control. Whereas SAA concentration in *C. pseudotuberculosis* and MAs groups showed a significant 3-fold (17.85 ± 0.91 pg/mL) and 2-fold (10.97 ± 0.71 pg/mL) increased compared with the control. This study concludes that inoculation of *C. pseudotuberculosis* and MAs have significant effects on Hp and SAA levels, which indicates that MAs could have a role in the pathogenesis of caseous lymphadenitis.

Keyword: *C. pseudotuberculosis*; Mycolic acid; Haptoglobin; Serum amyloid A; Goats