

Ultrastructural pathology of the upper respiratory tract of rabbits experimentally infected with *Pasteurella multocida* A:3

ABSTRACT

Twenty-four 8 to 9 week-old *Pasteurella multocida*-free rabbits were divided into three equal groups, the first group was pretreated with hydrocortisone and inoculated intranasally with *Pasteurella multocida* serotype A:3. The second group was inoculated intranasally with *P. multocida* without hydrocortisone treatment. The third group was inoculated with phosphate buffered saline only and used as a control group. *Pasteurella multocida* was isolated from the nasal cavity of all infected rabbits in group 1 and 2 and from the trachea of seven rabbits in group 1 and five rabbits in group 2. This study was conducted to observe the ultrastructural changes of the upper respiratory tract of hydrocortisone treated and non-treated rabbits infected with *P. multocida* serotype A:3. The ultrastructural changes detected in infected rabbits were ciliary destruction and deciliation of the ciliated epithelial cells, cellular swelling, goblet cell hyperplasia and endothelial cell damage. *Pasteurella multocida* was observed attached to the degenerated cilia, microvilli and mucus. *Pasteurella multocida* infection was associated with inflammatory responses, which may have caused tissue damage. It is possible that hydrocortisone modulates the severity of infection as an immune suppressor and an inhibitor of goblet cell secretion.