

Effect of dose dependent oral inoculation of *Pasteurella multocida* type B: 2 in mice: molecular detection and histopathological evaluation

ABSTRACT

Haemorrhagic septicaemia (HS) is an important disease of cattle and buffaloes worldwide, caused by *Pasteurella multocida* type B: 2 and type E. Here, we evaluated the clinical signs, gross and histopathological changes as well as molecular detection of *P. multocida* in various organs of mice following oral inoculation with graded doses of the bacterium. A total of 32 healthy mice were divided into four groups of 8 mice each where each group was inoculated orally with 0.4ml of *P. multocida* type B: 2 at the dose of 10^3 (Group 1), 10^5 (Group 2) and 10^7 (Group 3) colony forming unit (CFU) respectively, while Group 4 served as a control. Post-mortem examination was conducted and gross lesions were observed. Tissue samples were collected for molecular detection and histo-pathological processing. All mice from the challenged groups showed almost no significant ($P>0.05$) clinical signs. Evidently, the severity of histo-pathological lesions in various organs was significantly high in groups 2 and 3. Through polymerase chain reaction detection (PCR), *P. multocida* type B: 2 was detected in all the experimental groups. Overall, the oral inoculation of mice at different doses of *P. multocida* type B: 2 results in clinical signs and histopathological lesions of haemorrhagic septicaemia infection.

Keyword: Haemorrhagic septicaemia; *Pasteurella multocida* type B; Mice; Histopathology; Lesions; Polymerase chain reaction (PCR); Dose dependent