

Pathogenicity of salmonella enteritidis phage types 3A and 35 after experimental infection of white leg horn chicks.

ABSTRACT

Out of 155 newly hatched SPF White Leghorn chicks, five chicks were randomly separated to confirm the SPF status of the chicks before inoculation. The remaining 150 chicks were divided into six groups. The three sacrificed groups (A, B and C) of 30 chicks each and their respective three mortality groups (MA, MB and MC) of 20 chicks each. The chicks in groups A and MA, and in groups B and MB were challenged orally with 0.1mL containing 107 cfu of SE phage type 3A (UPM-0541) and SE phage type 35 (UPM-0525), respectively. The uninoculated groups C and MC served as negative controls. Pathogenicity of *Salmonella enteritidis* (S. Enteritidis) phage types (PTs) 3A and 35 infections was determined through inoculation orally with (0.1mL/chick) 107 colony forming units (cfu). Clinical signs and mortality were observed for 21 days post inoculation (pi). Body weights, bacterial isolation, gross lesions and histological lesions were recorded on days 1, 3, 5, 7, 14 and 21 pi. The inoculated chicks in A and B groups showed clinical signs of depression, anorexia, ruffled feathers, vent pasting and diarrhea starting from day 1 pi. Lifting of wings from thorax was observed in group A only at day 5 and 7 pi. The chicks in MA and MB groups that died during experiment showed all the clinical signs before death. There was no significant difference ($p > 0.05$) in body weight gain among the inoculated and the control groups. The growth index value (0.035) for all the groups remained increased. The mortality caused by SE PT3A and PT35 was 10% and 5%, respectively. About 20-10% inoculated sacrificed and all the dead birds showed gross lesions of enlarged livers, fibrinous perihepatitis and pericarditis which was supported by histopathology. The *Salmonella* was isolated from the cultured samples of chicks inoculated with SE PT3A and SE PT35 throughout the experiment period with the individual variation of chicks and samples. It was concluded that newly hatched SPF chicks are susceptible to PT3A and PT35 infections. These phage types are mild to moderately pathogenic for SPF chicks.

Keyword: *Salmonella enteritidis*; SE PT3A; SE PT35; SPF chicks; Colony forming units.