

Pathogenicity of fowl adenovirus serotype 8B isolates of Malaysia in specific pathogen free chicken

ABSTRACT

Highly pathogenic Fowl Adenovirus (FAdV) is a causative agent of Inclusion Body Hepatitis (IBH) in poultry. It causes mortality and poor performance of the affected chickens. It was objectives of the study to determine pathogenicity of FAdV serotype 8b isolates of Malaysia in Specific Pathogen Free (SPF) chickens. The virus isolates namely, UPM11134 and UPM11142 were obtained from IBH outbreaks in broiler chicken farms and characterized as FAdV serotype 8b. The liver samples of affected chickens were prepared and inoculated into SPF embryonated chicken eggs via. Chorioallantoic Membrane (CAM) route. The liver of embryos was subsequently harvested for preparation of virus inoculum. The 36 days old SPF chicks were divided into 3 groups namely groups A-C. Each group was further divided into sacrificed and mortality groups. Chickens in groups A and B were inoculated with UPM11134 and UPM11142 FAdV isolates, respectively, via. intraperitoneal route at day old. All chicken in group C remained uninoculated and acted as the control group. The chicken were monitored for any clinical abnormalities throughout the trial. Gross lesions were recorded on necropsy and samples of liver and gizzard were collected and fixed in 10% buffered formalin for histological examination. The study showed 100 and 91% mortality of SPF chickens in groups A and B, respectively, at day 4 post inoculation (pi). Clinical signs of IBH such as depression, weakness, ruffled feathers and diarrhea were recorded within 12-24 h prior to death. On necropsy, hydropericardium with pale, friable and petechial haemorrhages of liver were recorded. Hepatitis with areas of hepatic necrosis and haemorrhages and presence of numerous basophilic Intranuclear Inclusion Bodies (INIB) in degenerated hepatocytes were recorded in all chickens in groups A and B, whilst INIB were also observed in glandular epithelium of gizzard in group A. All chicks in group C remained normal throughout the trial. It was concluded that Malaysian FAdV serotype 8b isolates are highly pathogenic in SPF chickens and acted as the primary agent of IBH.

Keyword: Fowl Adenovirus (FAdV); Inclusion Body Hepatitis (IBH); Specific Pathogen Free (SPF) chicken; Intranuclear Inclusion Bodies (INIB); UPM11134