Abstract:

The pathogenicity of infectious bursal disease virus varies from mild to very severe. The severity of the disease depends on the virus pathotype and breed of chicken affected, among other factors. Indigenous chicken ecotypes in Africa are generally known to be resistant to diseases. This study was performed to determine the pathogenicity of local IBDV isolates (E42, E19, E7 and E9) in indigenous chickens in Kenya. The chickens were inoculated intra-ocularly with 10^4 EID_{50} of virus. Pathogenicity was determined using the following:
(1)Symptomatic index scores, on an ascending scale of 0 (no signs) to 3 (most severe signs), (2) Histopathological lesion scores of the Bursa of Fabricius, thymus, spleen, caecal tonsils and Harderian gland, and (3) Bursal index, thymic index and splenic index scores, based on organ to body weight scores. **Results:** All isolates caused severe clinical disease, high mortality rates and severe pathological lesions, as observed with very virulent IBDV pathotypes. The mortality rates were as follows: E 42 – 16.7%, E19 – 27.8%, E7 – 61.1% and E9 – 66.7%. The main symptomatic index scores were highest on days 3 and 4 post-inoculation. The highest scores were 2.4 (isolate E9; day4), 2.2 (isolates E9 and E7; day 4 for both) and 1.6 (isolate E42; day 3). The most damaged organ was the Bursa of Fabricius, followed by the spleen, thymus and caecal tonsils, with a minimal effect on the Harderian gland in all isolates. The organ index scores did not vary significantly between isolates ($p = 0.05$). **Conclusion**: Indigenous chickens developed severe disease when infected with Kenyan IBDV strains. Phemotypically, all strains belonged to the very virulent pathotype.