

Hemorrhagic and clotting abnormalities in infectious bursal disease in specific-pathogen-free chicks

ABSTRACT

Investigation to know the hemorrhagic and clotting mechanisms in very virulent (vv) infectious bursal disease virus (IBDV) infection of Malaysian isolate was carried out in chicks. One-hundred-ten, 32-day-old Specific-pathogen-free chicks were divided into IBD and control groups, each consisting 55 chicks. The IBD group was inoculated orally with 0.1 mL/chick of inoculums containing vvIBDV isolate with a titre of 10^8 EID₅₀/mL, while the other group served as controls. Four chicks each in IBD and control groups were sacrificed at 1, 3, 6 and 12 hours and days 1, 2, 3 and 4 post-infection (pi). Blood samples were collected for thrombocyte count and coagulation tests prior to necropsy. On necropsy gross lesions were recorded. The IBDV infected chicks showed clinical signs of acute disease starting day 2 pi. At days 3 and 4 pi significant ($p < 0.05$) thrombocytopenia and prolonged activated partial thromboplastin time (APTT), prothrombin time (PT) and whole blood recalcification time (WBRT) were recorded corresponding to the occurrence of higher frequency of hemorrhage in the bursa of Fabricius, thigh muscle and mucosal junction between proventriculus and gizzard, which indicate the presence of clotting deficiency. Hence, it was concluded that the vvIBDV of Malaysia isolates caused clotting abnormality that are consistent with the pathogenesis of the disease and it appears that this abnormality in vvIBDV infection could be due to thrombocytopenia and/or coagulation factors deficiencies, or both.

Keyword: SPF chicks; VvIBDV; Hemorrhage; Clotting abnormalities; Coagulation deficiencies