

THE IMPACT OF INCLUSION BODY HEPATITIS (IBH) VIRUS ON IMMUNE ORGANS (BURSA OF FABRICIUS, SPLEEN, AND THYMUS) OF BROILER CHICKENS IN SRI LANKA

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Inclusion Body Hepatitis (IBH) is caused by Fowl adenoviruses (FAdVs) of Family *Adenoviridae*. FAdV-D (serotypes 2, 3, 9 and 11) and FAdV-E (serotypes 6, 7, 8a and 8b) are the causative agents of IBH. It is an acute disease affecting 3-7 weeks-old broiler chickens. The liver is the main organ affected by IBH. The focus of this study was to determine whether there was a significant lymphoid depletion in immune organs affected by IBH using a scoring system. Livers and immune organs (bursa of Fabricius, spleen and thymus) of broilers were collected during postmortem examinations from broiler farms in Central, Western and North-Western Provinces of Sri Lanka (3, 5 and 18 flocks respectively). Six normal/IBH-free broilers who died due to transportation stress were collected from broiler processing plants as controls. Processed organs were stained with hematoxylin and eosin for histopathological study. Livers with large basophilic intra-nuclear inclusion bodies in hepatocytes with hepatocellular degeneration and necrosis were confirmed as IBH. In the normal group, the above mentioned histopathological changes were not detected. Lymphoid depletion was detected by the reductions in the number of lymphoid follicles and the reduction in the germinal centres' size. Statistical analysis was done using the Mann-Whitney test to compare the lymphoid depletion of IBH-positive cases with the normal group, and a *P* value < 0.05 was considered significant. The results showed a significant lymphoid depletion in IBH cases compared to the normal group (*p* value for bursa of Fabricius-0.0387, spleen < 0.0001 and thymus -0.0021). Although similar studies have been conducted for Specific Pathogen Free (SPF) birds in other countries, this was the first study conducted in Sri Lanka to detect the lymphoid depletion of commercial broilers under natural infection. The study concluded that IBH significantly reduces the immunity of commercial broilers.

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