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Comparison of Pathogenicity of Four Commercial IBD Intermediate Live Vaccines in Broilers

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Abstract

This study was designed to investigate four commercial intermediate live vaccines against infectious bursal disease (IBD). One hundred and fifty, 1-day-old ROSS broiler chicks divided randomly into 5 groups. Each group was consisted of 30 birds. The birds were vaccinated with an intermediate IBD vaccines namely A,B,C, and D vaccines at 14 days of age via intracrop route except group 5 which was acted as control unvaccinated group. Following vaccinations, different parameters were used in this investigation including; clinical signs and gross lesions, lymphoid organs indices and histopathological changes. The result indicated that no clinical signs and gross lesions were observed on vaccinated birds. Significant increase ($P<0.05$) in bursal index at 17th day of age in group 4, whereas a significant reduction ($P<0.05$) at 28th days of age has been noticed which indicated bursal atrophy as compared with control and other vaccinated groups. Spleen index revealed significant reduction ($P<0.05$) at 28th days of age in the same group as compared with control and other vaccinated groups throughout the experiment. Thymus index revealed significant reduction ($P<0.05$) in group1 at 28th days of age as compared with control and other vaccinated groups. Histological examination of bursa of Fabrics (BF), spleen and thymus revealed that all type of vaccines induced different degree of alterations in these organs. The organs in group1, 2 and 4 showed similar degree of changes which characterized by an edema and degeneration in the medullary area of bursal follicles. Spleen of groups1 and 2 showed follicular necrosis and sinusoidal congestion, whereas that of group 4 showed hydropic degeneration in the epithelial layer. Thymus in group1, 2, 4 exhibited congestion and hemorrhage in the medulla with lymphocytic depletion. Bursa of group 3 showed thickened capsule whereas spleen showed hydropic degeneration in the epithelial layer of the blood vessels, whereas the thymus changes represented by focal area of hemorrhage. Study of the pathogenicity of four commercial IBD vaccines showed considerable variation in their pathogenicity. In conclusion, vaccine D proved to be more pathogenic than A, B, and C vaccines. This was supported by bursal, spleen and thymus reduction and bursal score indices.

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