GENETIC AND PATHOTYPIC CHARACTERIZATION OF STRAINS OF INFECTIONOUS BURSAL DISEASE VIRUS

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Infectious bursal disease is an acute, highly contagious viral infection causing immunosuppression in young chicken. Genetic analysis of the genome of this virus will give greater insights into the molecular differentiation of strains belonging to the same serogroup. Pathotypic characterization on the other hand aids in detecting the virulence of the infecting strains as classical, variant, virulent and highly virulent. In the present study infectious bursal disease virus (IBDV) was isolated from field samples from various districts in and around Tamil Nadu and propagated in embryonated chicken eggs. 18 strains were isolated. After a series of passages the antigen was prepared in bulk and purified. Viral proteins of IBDV were characterized by polyacrylamide gel electrophoresis (PAGE) and western blotting. Genetic characterization was carried out by nested PCR, RFLP, cloning and sequencing. Eight strains showing variation in phylogenetic analysis were selected and subjected to pathotypic characterization. The mortality rate, antigen detection and bursa body weight ratio was estimated. All the pathotyped isolates had bursal scores of 3 and above on 8th day post inoculation. However the scores for vaccine group was below 2. In paraffin embedded sections of the infected bursal tissue characteristic lesions such as lymphoid depletion, necrosis, granulation, cyst formation and mononuclear cell infiltration within the follicles was noticed. The study on the genetic and pathotypic characterization of IBD virus will be a useful tool in future for the identification of virulence markers for vaccine development.