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Review Article

INFECTIOUS BURSAL DISEASE IN POULTRY: A REVIEW ON INFLUENCE OF BREED, SEX, AGE AND SEASONAL VARIATION ON THE DISEASE INCIDENCE

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ABSTRACT

Infectious bursal disease (IBD) is an acute, highly contagious disease of chicken caused by virus belonging to family Birnaviridae and classified as Avibirna virus. Young chickens in the age group of 3-6 weeks are severely affected. The virus is non-enveloped hexagonal, 60 nm in diameter with icosahedral symmetry. The genome consists of two molecules of double stranded (ds) RNA designated as segments A and B. The virus is resistant to acidic pH and lipid solvents. It is stable and can persist for nearly four months in deep litter and for 7 weeks in feed. It is transmitted through direct and indirect contacts. The virus attacks immature B-lymphocytes in lymphoid follicles of bursa. In this infection, B-cell dependent immunosuppression is responsible for vaccination failures.

Keywords: Chickens, Immunity, Infectious bursal disease, Virus.

INTRODUCTION

The main lesions of IBD are generally found in the bursa of fabricus. At present, this disease is reported throughout the globe. It is an economically important disease causing 100% morbidity. Mortality may even reach up to 90% in susceptible flock. Poultry industry suffers from huge economic losses due to IBD. The loss is attributed to high mortality, immunosuppression and condemnation of the carcasses¹. The present study was carried out to determine the incidence of occurrence of IBD in different poultry farms situated in and around Ranchi (India) and to analyze the effects of this disease on different breeds, age groups and sexes of chicken along with its seasonal variations of occurrence.

Serological survey studies on disease incidence

The overall incidence of IBD among chickens was estimated by Choudhary et al.². The incidence was significantly higher among chickens of organized poultry farms as compared to the private farms.

The incidence of IBD was higher among commercial broiler chickens than in local chicken breeds indicating the local chicken breeds being more resistant to the infection.

Agar Gel Precipitation Test is employed as the serological test for determination of incidences of IBD which is also

recommended by Office of International des Epizooties (OIE). Several workers like Seevaseelan and Balachandran³ and Kumar et al.⁴ have reported the highest prevalence of precipitating antibodies against IBD in broiler chickens which supports the present study. In an investigation carried out by Choudhary et al.², the seroepidemiological investigations conducted on randomized collected serum samples from eight poultry farms revealed that an overall incidence of precipitating antibodies to IBDV was 33.90%. Gupta et al.⁵ and Reddy and Koteeswaran⁶ also reported seroprevalence of IBD.

Influence of physiological factors on disease incidence

The age-wise incidence of IBD remains significantly higher during 4-7 weeks of age. There has been observed a decrease in incidence of IBD with increasing age. The incidence of IBD is higher among chickens during monsoon season as compared to winter². A higher incidence or increased amount of precipitating antibodies against IBDV is evident in male cockerel as compared to females. Ray and Sarkar⁷ observed an increased incidence and seroprevalence of IBD during 4-7 weeks age. Casgrove⁸ and Meroz⁹ also reported their findings on incidence of IBD having an influence on sex of the chicks.

CONCLUSION

It can be concluded that IBD is a very much prevalent infection in poultry population of Ranchi, India which causes severe economic losses to poultry farm owners and requires stringent control measures through effective vaccination policy.

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