PREVALENCE OF INFECTIOUS BRONCHITIS IN THE ORGANIZED POULTRY FARMS OF KERALA

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ABSTRACT

A seroprevalence study for Infectious Bronchitis virus in the poultry population of Kerala was conducted employing ELISA. Nine organized farms under government sector were screened. Isolation was attempted in suggestive outbreaks on samples brought to the institute for routine post mortem. A seroprevalence of 44.2 percent was observed in the study. Co-occurrence of IBV antibodies and *Salmonella* antibodies was a consistent observation. Concomitant infections in field outbreaks complicated clinical pathological profile. The study indicated high prevalence of IB in Kerala and stressed the need for isolating local strain.

Key words: Infectious bronchitis, Seroprevalence

INTRODUCTION

Infectious Bronchitis(IB)is an acute ,highly contagious viral disease of major economic importance in chicken as it causes poor weight gain, reduced feed efficiency, declined egg quality and mortality The disease has been recognized as an important disease of growers and layers causing serious lossesin India. The disease is widely prevalent in most of the southern states (Johnson *et al*., 1998). Chandranaik *et al*., (2005) reported an IB outbreak in a layer flock in a government farm at Chathamangalam in Kerala. However there is no evidence of a prevalence study conducted in the state. In the present study, an attempt is made to assess the prevalence of IB antibodies in the poultry population of Kerala and also place on record the concurrence of IB infection and Salmonellosis in layer birds, a consistent observation in this study.

MATERIALS AND METHODS

During the study period of two years, a total number of 1092 random serum samples collected from 364 unvaccinated flocks of selected nine organized government poultry farms distributed throughout Kerala were tested for the presence of IBV antibodies employing ELISA (*M/s Synbiotics Co., US, ProFlokIBV ELISA kit*). Suggestive outbreaks were investigated in detail and virus isolation was attempted on embryonated chicken eggs.

RESULTS AND DISCUSSION

In the study 483 (44.2 percent) samples were seropositive on ELISA (Fig 1) indicating a high prevalence in the state. Prevalence rate in the individual farms varied from 26.8 percent to 85.8 percent. As the poultry farms in Kerala do not practice vaccination against IB, the prevalence rate observed in the study could be taken as a true reflection of infection prevailing in the state. Incidence rate in this study was higher when compared to two similar earlier studies conducted in the neighbouring state of Tamilnadu where 19.4 percent and 21.3 percent

seropositivity were observed (Johnson *et al.,* 1998). However, in eighty turkey serum samples tested, no reactors were found. In an experimental study in turkey, aerosol inoculation of IBV produced no clinical response (Saif, 2003).

Co occurrence of IBV antibodies and *Salmonella* antibodies was a consistent observation in this study. On testing 125 samples from five *Salmonella* affected flocks, 83.2 percent were positive for both pullorum antibodies and IBV antibodies. However published literature regarding the co occurrence with *Salmonella* is scanty and hence further studies are necessary for confirmation. IBV has been reported as a component of mixed infection with *Mycoplasma* and *E.coli* (Saif, 2003). Both IB and *Salmonella* being reproductive tract predilectors, possibility of one predisposing the other could not be ruled out. Coexistence of antibodies of respiratory infections like IB, ILT and CRD was reported earlier (Fabricant and Levine, 1962; Springer *et al*., 1974).

Fig.1: Samples seropositive by ELISA

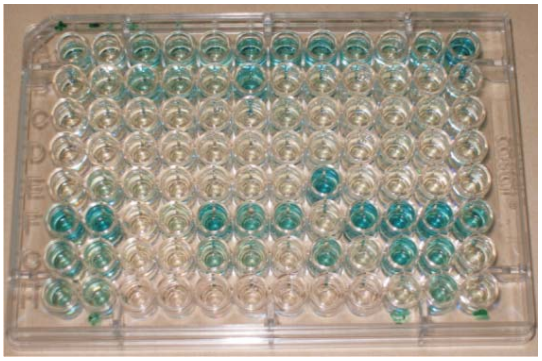
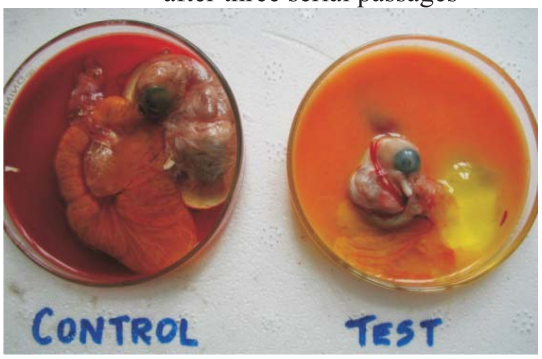


Fig. 2. Dwarf, curled and stunted Embryo after three serial passages



One IB outbreak in chicks was confirmed by virus isolation during the study period out of the four suspected outbreaks investigated, which recorded a mortality of 60 percent. Concomitant infection with *E. coli* and *Coccidia* complicated the clinical pathological findings. The flock was unresponsive to antibiotics. Virus characteristics on 11 day old embryonated chicks were studied. Embryo appeared stunned, dwarf and curled after three serial passages (Fig. 2) but no urolithiasis was observed.

The study indicates IB virus prevalence in the state of Kerala and stress the need for isolating the local strain from different field outbreaks and vaccines prepared from respective strains so that vaccinations become more effective. Though vaccination is not a fool proof method due to constant change of strains (Saif, 2003), considering the economic loss due to production insufficiencies, chick mortality and permanent damage to internal organs, it is the only practical method which can protect the bird from the harmful effects.

Virus isolation was found to be cumbersome as a routine diagnostic test. Rapid tests like ELISA were appeared more applicable for diagnostic purpose.

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