SHORT COMMUNICATION

SEROLOGICAL SURVEY OF INFECTIOUS BURSAL DISEASE ANTIBODY IN LOCAL CHICKEN

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ABSTRACT

Serological evidence for infectious bursal disease virus antibody in local chicken in Ago-Iwoye area of Ogun State was detected using agar gel precipitation test. 51 out of the 98 sera samples tested were positive for precipitating antibody against infectious bursal disease.

Key words: Infectious bursal disease, precipitating antibody, Local chicken.

INTRODUCTION

Infectious bursal disease (IBD) also known as Gumboro disease is an acute contagious virus disease of chicken which was first described by Cosgrove (1962). The disease was first reported in Nigeria by Ojo *et al.* (1973). It is characterised by the inflammation and destruction of lymphoid cells in the bursa of Fabricius of affected birds. It usually affects 3-7 weeks old chicken but infection of birds as old as 20 weeks have been reported (Durojaiye *et al.*, 1984). It is one of the diseases hampering poultry production in Nigeria, hence vaccination is practised, but the use of vaccines to control IBD have produced variable results and many cases of vaccine failures have occurred (Durojaiye *et al.*, 1985).

In the case of local birds, they are kept on extensive system, without vaccination against infection and without much attention to their management. It is therefore considered necessary to check for evidence of infection and the level of immunity of the birds.

MATERIALS AND METHODS

Blood samples were obtained from 98 indigenous or local birds which were kept under extensive system and with no history of vaccination. Each bird was bled from the

jugular vein and marked to avoid repeated capture. Sera were collected and stored at 2°C until tested.

Positive control serum was obtained from chicken which had received three successive doses of IBD vaccine over a period of 17 days. The chicken were bled seven days after the last inoculation and the sera was tested for precipitating antibody using IBD bursal antigen obtained from the National Veterinary Research Institute, Vom. Negative control serum was obtained from sera of unimmunised chicken that tested negative for precipitating antibody against infectious bursal disease. The virus antigen was obtained from the bursa of Fabricius of an infected bird. The bursa of Fabricius was diluted 1:1 (w/v) with phosphate buffered saline (PBS) and homogenised in a manual tissue homogeniser. The resulting homogenate was frozen and thawed three times, it was clarified by centrifugation at 2,000 rev/min for 10 minutes. The supernatant fluid was stored at -2°C until used as antigen. The agar gel precipitation test was used as described by Cullen and Wyeth (1975) on individual sera. The 1% agar was prepared in barbitone acetate buffer and incubation was carried out at 25°C in a humid chamber. The plates were observed for precipitin lines after 24 hours.

RESULTS AND DISCUSSION

Out of the 98 sera samples tested for IBD antibody, (52%) were positive. Precipitin lines were observed by 24 hours. 48% of the total number of sera tested produced no precipitin lines and were therefore negative for IBD antibody.

The detection of precipitin lines indicates the presence of antibody against infectious bursal disease in local chicken. This shows

that the birds were at a time exposed to the infectious bursal disease agent. The result of this survey suggests that IBD virus is wide spread in domestic fowls, as earlier documented by Nawathe *et al* (1978). Since the chicken were free ranging, they were exposed to contaminated feeds, polluted water and poor management which might be sources of contact. There is also the possibility of contact with infected poultry houses or rodents from such poultry houses, which may be involved in transmission and persistence of IBD agent. Moreso, when contaminated building could remain infective for many days and hygienic measures have not been found successful in eradicating the disease (Benton *et al.*, 1967).

The local chicken might be harbouring the virus unnoticed and may therefore act as an agent in spreading the disease, especially in areas where chickens and guineafowls are sometimes reared together under free range system (Abdul *et al.*, 1985). This may also be one of the complicating factors in the control of the disease in Nigeria.

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