

Short communication

SURVEY FOR ANTIBODIES TO NEWCASTLE DISEASE VIRUS IN CATTLE EGRETS, PIGEONS AND NIGERIAN LAUGHING DOVES

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Antibodies to Newcastle disease virus (NDV) were detected in 20% of 15 serum samples of cattle egrets (Ardeola ibis), 16.7% 30 sera samples of Nigerian laughing doves (Streptopelia senegalensis) and none from sera of 30 pigeons (Columba livia) screened for antibodies to NDV using haemagglutination-inhibition (HI) test.

Keywords: Newcastle disease virus, antibody, pigeons, cattle egrets, doves

Newcastle disease is a virus disease of birds characterised by variable combinations of gastro-enteritis, respiratory distress and nervous signs (Durojaiye and Owoade, 1990). All birds are susceptible but the disease is more severe in chickens and turkeys and less severe in ducks and pigeons (Munjeri, 1996). NDV has been recovered from wild ducks, shaps, cormorants and gannets under circumstances suggesting that these seabirds are a source of infection for domestic fowls (Spalatin and Hanson, 1975). In Nigeria, the virus has been isolated from natural infection in captive African grey parrot (*Psittacus erithracus*) – by Onunkwo and Momoh (1980). Serological evidence of the disease has been demonstrated in Canadian geese (*Branta canadensis*) by Palmer and Trainer (1970). Spalatin and Hanson (1975) also detected NDV antibodies in wild ducks and domestic geese. Kaleta and Baldauf (1988) concluded that in addition to the domestic avian species, natural or experimental infection with NDV has been demonstrated in at least 236 species from 27 of the 50 orders of birds.

The objective of this study was to detect the presence, if any of NDV antibodies in cattle egrets, Nigerian laughing doves and pigeons in order to ascertain whether these birds could be reservoirs of NDV for domestic poultry.

MATERIALS AND METHODS*Collection of Sera*

Migrant cattle egrets were live-trapped at the University of Ibadan Teaching and Research farm while Nigerian laughing doves were live-trapped on the University of Ibadan campus. The pigeons were trapped at the University of Ibadan zoological garden. The blood samples after being drawn from the jugular veins, were allowed to clot, the sera were removed and heat-inactivated at 56° C for 30 minutes and then frozen at – 70° C until tested.

Serological Procedure

The LaSota strain of NDV was used as the antigen for the HI test using 4 haemagglutinating units. Sera from all the birds were tested for NDV-HI antibodies as described in the methods for examining poultry biologics (National Academy of Sciences, 1971).

RESULTS

The result of HI test on the sera is shown in Fig. 1. Out of the 15 sera samples screened for NDV antibodies in cattle egrets, a total of 3 representing 20% were positive for NDV-HI antibodies (Figure 1). 5 out of 30 sera samples (16.7%) were positive for the same antibody in Nigerian laughing doves. None of the sera sample from pigeons was positive for antibodies to NDV.

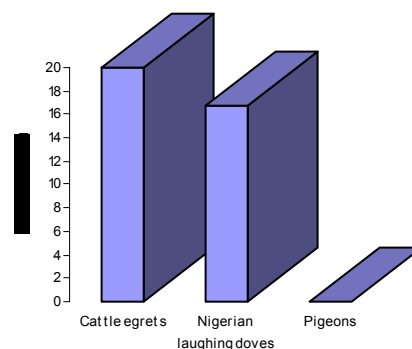


Figure 1
Prevalence of the NDV antibodies in the three avian species studied

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DISCUSSION

There was serological evidence of NDV antibodies in cattle egrets and Nigerian laughing doves but none in pigeons. This might be due to occasional visits of these birds to the poultry premises where they could have contracted the virus from materials from poultry houses on the University of Ibadan Teaching and Research farm. So, there is the possibility of transmission of NDV among these species of birds.

Pigeons and doves are among a group of domesticated birds that were primarily affected by the third panzootic of ND which apparently arose in the Middle East in the late 1970s (Kaleta *et al.*, 1985). The disease spread to all parts of the world, largely as a result of contact between birds at races and shows and the large international trade in such birds (Biancifiori and Fioroni, 1983). Although there was no serological evidence of ND in pigeons in this work, the spread of ND to chickens from pigeons has occurred in several countries including Great Britain where 20 outbreaks in unvaccinated chickens occurred in 1984 as a result of feed that had been contaminated by infected pigeons (Alexander *et al.*, 1984). No similar occurrence of ND in cattle egrets has been reported. Further work on the isolation of NDV from these avian species is advocated.

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