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Research Paper

A Retrospective Study on Mortality Pattern of Poultry in Wayanad District of Kerala

Veterinary Science

KEYWORDS : mortality pattern, poultry, Wayanad, Kerala

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ABSTRACT

Poultry production in Kerala has seen marked growth for the last few years. Out of total poultry holding, 93.5 per cent is with marginal farmers and only 4.55 per cent remains with the small scale farmers. A retrospective study was conducted in the Department of Veterinary Pathology and the data has been analyzed for a period of three years from 2010 to 2013. The birds registered for postmortem examination included mainly chicken (broiler and layers), ducks (Mallard and Muscovy), quail, turkey and emu. Disease conditions were diagnosed based on case history, clinical symptoms, necropsy findings and laboratory investigations including bacteriological, parasitological and histopathological examinations

INTRODUCTION

Recently many farmers have resorted to poultry farming and the demand for poultry meat is increasing day by day in the state. Because of the geographical proximity to the states of Karnataka and Tamilnadu, very often birds are being transported from these states to Wayanad. So obviously they carry many diseases also along with them. It is necessary to understand the mortality pattern in poultry to reduce huge economic loss for farmers by taking suitable preventive measures time and again. But such studies on mortality of birds have been rarely conducted. Since many emerging diseases have been reported in animals it is equally important to study the disease pattern in birds in a biologically diverse area like Wayanad.

MATERIALS AND METHODS

The study was conducted in the Department of Veterinary Pathology and the data was analyzed for a period of three years from September 2010 to September 2013. The carcasses were brought by individual farmers from nearby area and recognized farms. Standard postmortem techniques were carried out and respective tissues were collected for bacteriological, parasitological and histopathological examination and results were recorded.

RESULTS AND DISCUSSION

There were different types of birds registered including chicken (layer and broiler), duck (Mallard and Muscovy), quail (Japanese quail) and emu. Out of 331 carcasses examined, most of them were chicken (272n). This included layers (187n) broilers (92n) and brooders below 10 days (83n). Totally there were 42 ducks out of which there were Muscovy ducks (4n) and Mallard ducks (38n). The other birds included Japanese quails (4n), turkeys (3n) and emu (3n).

Disease conditions were diagnosed based on case history, clinical symptoms, necropsy findings and laboratory investigations including bacteriological, parasitological and histopathological examinations (Fig 1). Etiological analysis showed that the highest mortality was caused by bacterial diseases (22.05%). The common bacterial diseases identified were colibacillosis, salmonellosis, and pasteurellosis. Though all age groups were affected, mostly birds of 1-2 months of age group were more affected by bacterial diseases.

The lesions identified in colibacillosis were air sacculitis, fibrinous pericarditis, and perihepatitis. Similar findings were documented in Kalinga brown chicken (Bonia et al, 2012). Salmonellosis was diagnosed in chicken with severe omphalitis, peritonitis and salpingitis. Hossain and Islam (2004) had described Salmonellosis in chicken and the conditions mentioned were pullorum disease, fowl typhoid and fowl paratyphoid.

Birds died with mycoplasmosis were showing lesions of caseous material in airsacs, pneumonia and congestion in visceral organs. Pasteurellosis in chicken and duck was presented with hemorrhagic tracheitis, pneumonia and epicardial hemorrhage. Prasanna *et al.* (2009) in a study conducted in Kerala described pasteurellosis as a major cause of death in water fowls. Fowl cholera caused by P. multocia was a serious problem in layers as reported by Choudhury *et al.*, (1985).

The incidence of fungal disease was fairly more in this district and aspergillosis was seen in 18.43 % of birds in which 93. 55 % of the affected birds were found to be in the brooding stage. The birds showed miliary type of yellowish nodules in the lungs and airsacs and pneumonia. Among the ducks necropsied (42n), 71% were affected by aflatoxocicosis a mycotoxin produced by aspergillus group of fungi.

Coccidiosis was the main protozoan disease (12.08%) seen in all age group of birds in which 12.05 % were in the brooding stage. The disease is caused Eimeria sp. The affected birds showed ruffled feathers and blood tinged feces. The pathognomonic lesions in coccidiosis was hemorrhagic enteritis.

As the diagnostic tests did not involve any virological tests, the conditions were identified based on pathognomonic gross lesions and histopathological findings. The total number of birds died due to viral diseases were 29 (8.76%). These included Infectious bursal disease, (IBD), avian leucosis complex (ALD) and Ranikhet disease (RD).

Metabolic disease is another important condition seen especially in broilers (16.01%). This included ascites (43.5%) and gout (8.9%). The lesion encountered were yellow, gelatinous fluid accumulated in abdomen, hydro pericardium, right ventricular dilatation, enlarged and pale liver. (Fig. 2).This was first described as hydropericarium hepatitis syndrome in Bangladesh (Rahman *et al.,* 2001). Gout is a condition seen in birds with deposition of uric acid in the visceral organs and joints. It appeared as chalky white deposit in the pericardium, airsacs and ureters.

The mortality in young chicks below 10 days of age were due to respiratory problems, omphalitis coccidiosis and other conditions due to management problems such as caking of litter materials , light intensity etc. (Fig 3). The carcasses of turkey and emu brought were very few (3 n each) and the main lesion identified was inflammation of intestine.

There were miscellaneous conditions recorded such as egg

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bound condition (1.21%), cannibalism (6.04%), stress (4.53%) and other conditions including nutritional deficiency (6.34%). Egg bound condition is a disorder in which egg is lodged in vagina that cannot be laid. It is considered to be due to inflammation of oviduct (salpingitis), partial paralysis of muscle of oviduct or production of a large egg that is difficult to lay (Uddin *et al.*, 2011). Cannibalism was recognized as feather pulling, vent and head pecking followed by hemorrhages. The main predisposing causes leading to cannibalism were light intensity, stocking density, vitamin and mineral deficiency, insufficient feeder or drinker space and irritation from external parasites (Rahman and Samad, 2003).

The data collected indicated that the diseases identified in poultry in Wayanad district included both infectious and noninfectious. Some of these could be prevented by proper vaccination schedule. The most significant finding from this study shows that more than half of the diseases (69.18%) encountered in poultry could be controlled by proper feeding, housing, brooding and other management practices. There are certain unidentified factors such as high altitude and climatic variations very particular to Wayanad district that can predispose birds to diseases which require detailed investigations.

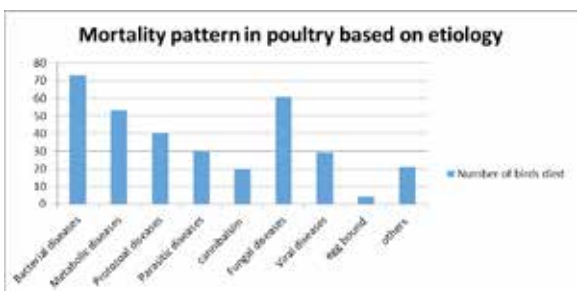

Figure 1. Mortality pattern in poultry based on the etiological factors

Figure 2. Ascites and hydropericardium in a broiler bird

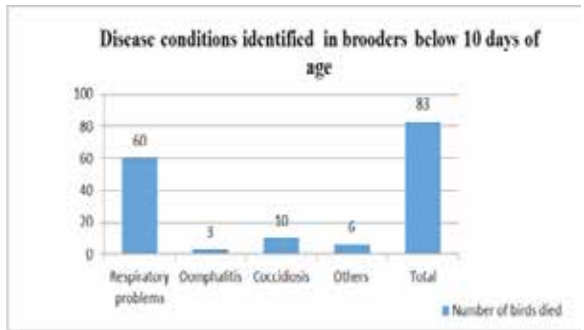

Figure 3. Disease conditions identified in brooders below 10 days

CONCLUSION

Since Wayanad district of Kerala is geographically connected two adjacent states often birds are transported in between these states and carry many tarnsboundary diseases. Since the single major cause of economic loss in poultry industry is by disease outbreak, it is necessary to understand the mortality pattern in poultry. Awareness of this will help to reduce huge financial loss for farmers by taking suitable preventive measures time and again.

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