OCCURRENCE OF SUB ACUTE FOWL CHOLERA IN A BROILER FLOCK

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Fowl cholera (avian pasturellosis) is an economically important and highly contagious disease of chicken and other birds, caused by the bacterium Pasteurella multocida, a small Gram negative bipolar rod. Pasturellosis is a common problem in turkeys and chicken over 16 weeks of age. However there are limited reports on the occurrence of fowl cholera in broiler chickens. Hence the present paper report the pathological features and in vitro drug sensitivity of the P. multocida isolates isolated from a spontaneous fowl cholera outbreak in a broiler flock.

Dead birds from a broiler farm with the capacity of 3000 birds were brought for postmortem examination with a history of 15 per cent morbidity and 3 per cent mortality within a period of three days and a cumulative mortality of 4 per cent in a period of 6 days. Age group of the flock was 33 days. One week before this incidence, the farm owner treated the birds for coccidiosis, even then the mortality continued. Hence, the dead birds were brought to Avian Disease Laboratory, Namakkal for further diagnosis. The birds were maintained on deep litter and protected against Newcastle and Infectious bursal diseases. Clinical signs reported by the owner were ruffled feathers, fever, anorexia, depression, lethargy, mucus discharge from the mouth and mucoid diarrhea in a few affected birds. The farmer submitted nine dead birds for postmortem examination. All of them were subjected to detailed postmortem examination and the gross lesions were recorded.

Swab from heart blood and liver were collected from nine dead birds and inoculated onto sterile Brain heart infusion (BHI) agar, blood agar (BA) and Mac Conkey’s agar plates and then the plates were incubated at 37°C for 24 hrs. The smear from heart blood and liver impression were stained by Leishman’s staining for typical bipolar organisms. The organisms were identified on the basis of cultural characteristic i.e., colony morphology on BHI agar plates, absence of growth on Mac Conkey’s agar, staining reaction by Grams and Leishman’s staining, motility test and various biochemical tests as described by Barrow and Feltham (1993). The P. multocida isolates were tested for its in vitro antimicrobial sensitivity test against 12 commonly used antimicrobial agents by disc diffusion on Muller – Hinton agar (Quinn et al., 1994).

At necropsy all the submitted birds had generalized carcass congestion. Enlarged and congested liver with multifocal cream-coloured spots measuring 1-2 mm in diameter on parietal surface and that were randomly distributed throughout the parenchyma. Mesenteric blood vessels were congested. Intestinal contents
especially jejunum and ileum showed haemorrhagic exudate with sloughing of mucous membrane. Pericardial sac showed increased amount of serous fluid. Subepicardial fat revealed petechial haemorrhages. Trachea and lungs were congested and contained viscid mucus. Mild enlargements of kidneys with distended tubules were recorded. These findings are in confirmatory with the earlier reports made on chickens (Kamal et al., 1988; Khan et al., 1997).

Leishman staining of the smears from heart blood and liver impression revealed bipolar organisms. All the samples collected from the nine broilers showed growth in BHI and BA plates. The isolates revealed typical morphological and cultural properties i.e., the colonies were small about 1 to 2 mm in diameter, entire, convex and opaque on BHI agar suggestive of *P. multocida*. None of the strains produced hemolysis on blood agar and no growth was observed on MacConkey’s agar plates. Gram’s staining of the smears from culture materials revealed Gram negative coccobacilli. The isolates were non motile. Biochemical tests revealed that all strains were oxidase and catalase positive, urease negative, fermented glucose, mannitol and sucrose while no fermentation with lactose and maltose. Based on the cultural characteristics and biochemical reactions the isolates were identified as *P. multocida*. These results are in agreement with Barrow and Feltham (1993).

In the in vitro drug sensitivity co-trimoxazole was found to be highly effective (89 per cent) followed by enrofloxacin, ciprofloxacin (78 per cent) and oxytetracyclin (67 per cent) where as the norfloxacin, cephoxaxime and cephalaxin were moderately sensitive and the remaining antibiotics (ampicillin, amoxicillin, chloramphenicol, colistin and gentamicin) were resistant. The drug sensitivity pattern in the present study are in concurrence with those of Madhekar et al. (1982) and Ramasastry and Ramarao (1989), where as Shivachandra et al. (2004) observed a strong resistance against Sulfadiazine. These differences in antibiogram pattern may be due the non acquaintance of antibiotic resistance, since broiler birds are not exposed to antibiotics very frequently as that of layer birds.

Accordingly the birds were treated with Sulphamethaxazole and Trimethoprim at the dose rate of 25 mg/kg body weight for five days, administered in drinking water. Clinical signs and mortality associated with fowl cholera were reduced from second day after the commencement of the treatment and birds completely recovered on the 4th day of treatment. The source of infection in present outbreak might be due to carrier status of the healthy birds as reported by Mbuthia et al. (2008) and the earlier coccidiosis infection lowered the resistance in the birds and resulted in fowl choler outbreak.

REFERENCES


