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Management of chronic respiratory disease (CRD) outbreak in an organized native chicken farm

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Abstract
Chronic respiratory disease (CRD) is a highly contagious and economically important disease of poultry caused by *Mycoplasma gallisepticum*. The present study reports the outbreak of CRD in an organized native chicken fqarm of 1000 flock size. Based on the clinical signs and post mortem examination the affliction was tentatively diagnosed as chronic respiratory disease. Tracheal swab was collected from clinically affected birds and were sent for diagnosis based on culture and isolation of the organism and PCR at Central University Laboratory, Tamil Nadu Veterinary and Animal Sciences University. The birds were treated with Inj. Tylosin tartrate and Inj. oxyetracyclin followed by Tetracylin orally for 3 days. The farmer was advised to maintain proper bio-security measures and adequate ventilation.

Keywords: CRD, poultry, post mortem, diagnosis, management

Introduction
CRD is one of the most economically important diseases of chicken caused by *Mycoplasma gallisepticum*. The major economic losses of CRD were mainly due to high morbidity, mortality, carcass condemnation, decreased egg production, reduced hatchability rates, altered feed efficiency and weight gain (Gondal *et al*., 2015; Karthik *et al*., 2018) [2, 3]. *Mycoplasma gallisepticum* (MG), a cell wall less bacteria is responsible for CRD which is characterized by coughing, respiratory rales, nasal discharge, infra orbital sinusitis and air sacculitis. The organism mostly colonizes in the respiratory tract and multiplies in the trachea, lung and air sacs The disease has been recorded in layers and breeders causing embryo mortality and also drops in egg production. All age group chickens and turkeys are susceptible to MG but young birds are considered to be affected severely than old birds. Both horizontal and vertical transmission has been documented in MG infection. n India sero diagnosis of MG has been reported at various time frames from various states. Earlier studies show 58.18% sero positivity in Wayanad district of Kerala, India while 53.40% sero positivity was recorded in Namakkal district of Tamil Nadu, India. Recent sero prevalence study conducted in seven states of India showed an overall prevalence of 32.06%, of which highest prevalence was noted in Telangana (50%) while Karnataka state had lowest prevalence (20%) (Surajit et al., 2016) [8]. The report showed that a higher incidence of CRD was observed in summer followed by winter and rainy season (Yunus *et al*., 2009) [10] whereas Sultana *et al*. (2012) [7] and Bahatti *et al*. (2013) [1] observed higher cases in winter. Diagnosis is made based on history, clinical signs and symptoms, post mortem findings (Karthik *et al*., 2018) [3]. The present study documents clinical signs, postmortem and followed by isolation and molecular confirmation of MG in an organized native poultry farm. Limited literature was available for the medical management of CRD in poultry, thus the present case is recorded.

Case history and clinical observations
An organized farm with a flock strength of 1000 native birds (7 weeks old) was reported to have respiratory problems like nasal discharge, swelling of the infra orbital sinus and respiratory rales. Mortality 15% and morbidity of 50% was reported. Postmortem was carried out on ten dead birds with similar clinical signs at Veterinary University Training and Research Centre, Perambalur, Tamil Nadu Veterinary and Animal Sciences University. Gross lesions like sinusitis, conjunctivitis, tracheitis with yellow cheesy material in trachea, air sacculitis with cheesy material and pneumonia were noted. The post mortem lesions include hemorrhagic spots in the tracheal rings; presence of mucous in the tracheal lumen in some affected birds, and as a complication, fibrinous pericarditis and fibrinous perihepatitis were

also observed Tracheal swab and air sac swab were collected in ice. Piece of Trachea and lung tissue were collected in ice for isolation and further molecular studies. Samples were processed for bacteriological and mycoplasma isolation and molecular identification by standard procedures as per Karthik *et al*., 2018 [3], at Central University Laboratory, TANUVAS.

Treatment

The birds were treated with Inj. Tylosin tartrate @ 10mg/kg and inj. Oxytetracyclin – Long acting @ 10 mg/kg on day one (diluted with saline) sub-cutaneously followed by oral application of Tetracyclin @ 10 mg/kg via. Drinking water for 5 days. Vitamin and Mineral supplements were provided to the birds during the entire treatment period. The birds showed signs of improvement following three days of treatment and eventually recovered after one week. The owner was further advised to isolate the sick and suspected birds from the flock, maintain proper ventilation, avoid dusty conditions inside the shed, reduce overcrowding of birds and maintain strict biosecurity measures in and around the farm premises.

Results and Discussion

Based on case history, clinical symptoms, gross lesions of PM findings, the case was tentatively diagnosed as CRD. In the present case, all birds in the flock were affected along with the mortality of five birds. CRD is a disease of poultry with high morbidity (50%) and low mortality (5%) (Karthik *et al*., 2018) [3]. The clinical symptoms shown in the case are similar to those reported by Gondal *et al*. (2015) [2]. Overcrowding of birds, poor hygiene and less ventilation in the shed may predispose the birds to CRD. Similar findings also suggested that cold weather, poor air quality or crowding, concurrent infections, and some live virus vaccinations are responsible for the transmission of CRD (Ley and Yoder, 2008) [5]. The gross lesion findings were tracheitis, perihepatitis and pericarditis which were in agreement with the findings of Rajkumar *et al.* (2017) [6]. Maintaining strict biosecurity measures, providing proper ventilation with an adequate spacing of the birds, etc., along with the administration of antimicrobial drugs improved the condition of birds. Previously researchers were also reported that antibiotic may either respond or not according to the condition of the status of birds (Kuniyasu *et al*., 1967; Uchida *et al*., 1986) [4, 9]. As CRD is one of the most commonly occurring diseases in almost any flock especially maintained under poor conditions, good hygienic practices can prevent the occurrence of diseases and economic loss on the farm.

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