

Therapeutic management of cutaneous form of pox in pigeons with azithromycin

Abstract

Avian pox is one of the most commonly reported infectious and contagious diseases of the birds. Cutaneous form of avian pox was recorded in a flock of pigeons in YSR Kadapa district of Andhra Pradesh, India. Greyish nodular eruptions like lesions were noticed over the beak, around eyes, over the legs and peri-cloacal region. Effected pigeons were randomly selected, separated into two groups and pigeons under group I was treated with azithromycin @20mg/kg body weight twice in a day for 12 days and group II as control. Pigeons under group I showed, disappearance of the skin lesions by the 10-12 days and no changes were noticed in the control group of birds.

Keywords: pigeon pox, azithromycin, vitamins, birds, species

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Introduction

Domestic pigeons are ubiquitous in nature and used as pets in India. Pigeons can be affected with different external, internal parasites and viral diseases.¹ Among the different cutaneous viral infections in birds, cutaneous form of pox is most common and reported in most of the avian species. Avian pox presents in birds into two forms including cutaneous and diphtheritic forms. Cutaneous or dry form is characterised by presence of the nodular skin lesions over the feather free areas while diphtheritic or wet form is characterised by the involvement of digestive and upper respiratory tracts.² Azithromycin is an antibiotic which will act against the gram positive, gram negative and anaerobic bacteria. Present communication reports about the therapeutic management of cutaneous form of pox in pigeons with azithromycin.

Materials and methods

Out of 72 pigeons in a flock, four were presented to the Veterinary Clinical Complex, College of Veterinary Science, Proddatur with history of skin lesions. Pigeons showed the blepharitis, conjunctivitis, ocular discharges and cutaneous lesions over the beak, head, on the legs including digits and peri-cloacal region (Figure 1) (Figure 2) (Figure 3) (Figure 4A). Lesions were small, focal, nodular greyish to white scab and condition was diagnosed as cutaneous form of pox.^{3,4}



Figure 1 Presence of peri-orbital lesions.



Figure 2 Presence of the lesions over the head.



Figure 3 Presence of lesions at peri-cloacal region.



Figure 4 (A) Before therapy - Presence of lesions over the legs.

Treatment and discussion

Pigeons with cutaneous form of pox were randomly divided into two groups and group I were treated with azithromycin (n=26) and group II placebo treatment (n=6). Azithromycin (20mg/kg body weight) was administered orally twice in a day, oral multi-vitamin supplementation syrup, liver tonic for two weeks and skin lesions were applied with povidone iodine ointment. Pigeons under the control group (II) were treated with nutritional supplementation alone. Improvement of the clinical condition was started by disappearance of the skin lesions; scab and complete remission of the cutaneous lesions were noticed after 10 to 12 days of therapy (Figure 4B). Out of 24 birds, 3 were died in the group I and 5 were died out of 6 birds in the group II. Details of the clinical improvement were mentioned in the Table 1 and Figure 5.



Figure 4 (B) After therapy – Disappearance of the lesions over the legs.

Table 1 Showing the number of birds with the lesions after treatment.

Parameter	Group I (n= 26)			Group II (n= 6)		
	0 th day	6 th day	12 th day	0 th day	6 th day	12 th day
Papules	23/26	10/26	1/26	4/6	6/6	6/6
Crust	24/26	18/26	2/26	5/6	6/6	6/6
Discharges	21/26	10/26	0/26	3/6	6/6	6/6
Dullness	15/26	13/26	1/26	4/6	5/6	6/6

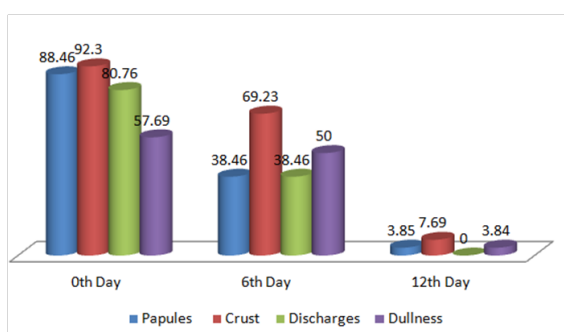


Figure 5 Graphical representation of the clinical response in Group I treated with azithromycin.

Avian pox is one of the important infectious diseases distributed worldwide which can effects the different types of avian species including pigeons. Avian pox transmitted by the direct transmission,

contact with contaminated objects, vector and aerosol transmission. Most birds infected with pox virus are mildly affected and rarely die; but mortality may increase due to inanition associated with lesions in the respiratory cavities.⁴ Development of the dermatological lesions due to external parasites appeared as scales, crust formation and these external parasites will act as vectors. But, cutaneous lesions in the pox will be more common over the featherless parts of the skin.⁵ Diagnosis of the cutaneous form of pox is usually accomplished by the clinical manifestations, histopathological evaluation and confirmation by the molecular characterization of pox virus by using PCR and real-time PCR techniques in the samples from skin lesions. Prognosis of the disease varies according to the immunity levels of individual birds, type of secondary bacterial infection and development of the sepsis during the course of the disease.⁶

Azithromycin is a nitrogen containing macrolide which had the both anti-inflammatory and immune-modulatory properties and directly influences phagocyte and lymphocyte function as well as chemotaxis.⁷ In the present study, observed signs were specific to the cutaneous form of pox and lesions are absent in the respiratory tract which indicates there is only cutaneous form of pox. In the present study, birds were treated with azithromycin to control the secondary bacterial infections as well as to increase the immunity.

Conclusion

Azithromycin was efficient in the treatment of cutaneous form of pox in pigeons along with the nutritional supplementation.

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Conflict of interest

The authors declare there is no conflict of interest.

References

- Sivajothi S, Sudhakara RB. A study on the gastro intestinal parasites of domestic pigeons in YSR Kadapa district in Andhra Pradesh, India. *JDVAR*. 2015;2(6):00057.
- Khan A, Yousaf A, Khan MZ, et al. Cutaneous form of pox infection among captive peafowl (*Pavocristatus*) chicks. *Avian Pathol*. 2009;38(1):65–70.
- Joshi S, Mudasar M, Sharma D, et al. Histopathological study of cutaneous form of Avipox virus infection in Jungle crow (*Corvusmacrorhynchos*). *Vet World*. 2012;5(10):628–630.
- Greenacre CB. Viral diseases of companion birds. *Vet Clin North Am Exot Anim Pract*. 2005;(8):85–105.
- Sivajothi S, Reddy BS. Lousicidal effect of deltamethrin in domestic pigeons. *J Parasit Dis*. 2016;40(3):838–839.
- Catroxo MHB, Pongiluppi T, Melo NA, et al. Identification of poxvirus under transmission electron microscopy during outbreak period in wild birds in Sao Paulo, Brazil. *International Journal of Morphology*. 2009;27(2):577–585.
- Wakita H, Tokura Y, Furukawa F, et al. The macrolide antibiotic, roxithromycin suppresses IFN γ -mediated immunological functions of cultured normal human keratinocytes. *Biological and Pharmaceutical Bulletin*. 1996;19(2):224–227.