Case Report: Treatment of Canary Pox with Orally Administration of Acyclovir

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Abstract: Objective: In this study, the effects of acyclovir on treatment of canary pox were examined. Two Canaries (one live & one dead) were referred to Avian Medicine Clinic. At post mortem examination, pox like lesions were observed in mouth, pharynx, larynx and upper part of trachea. In examination of the live bird, clinical signs such as depression, dyspnea, gasping were seen. Acyclovir is phosphorylated by viral thymidine kinase and inhibits viral DNA polymerase. The live bird was treated with acyclovir and was inspected every day. Methods: The live canary was treated with acyclovir at 80 mg/kg each 6hr/day orally for 10 days and was inspected every day. Results: The appetite of bird was improved gradually. After 10 days, all of clinical signs and gross lesion were disappear. Conclusions: Canary pox will be treated by acyclovir at 80 mg/kg each 6hr/day orally for 10 days.

Key words: Canary, acyclovir, diphtheritic pox.

1. Introduction

Avian pox is a common viral disease of domestic and wild birds [1, 2]. Avian pox has been reported in various birds, including ostrich [3], quail [4], grackles [5], racing pigeon [6], red-tailed hawk [7], prey [8], and cherrug falcon [9], for example. Two hundred and thirty-two bird species in 23 orders from approximately 9000 bird species have been reported to have acquired a natural poxvirus infection. Avian poxviruses infect birds of both sexes and all ages. The course of the disease in the individual bird takes three to five weeks. Affected young birds are retarded in growth, laying birds experience a drop in egg production. Birds of all ages that have oral or respiratory system involvement have difficulty eating and breathing. Among companion birds, avian poxvirus infections most often occur in Amazon parrots and in large aviaries of canaries. Canaries are highly susceptible to canary poxvirus but show resistance to turkey, fowl, and pigeon poxviruses [10]. Avian pox occurs frequently in domestic poultry, pigeons, and canaries. Avian pox is a large DNA virus. Four closely related strains have been identified: fowl pox virus (chickens), turkey pox virus, pigeon pox virus, and canary pox virus. Birds that survive avian pox infection usually have durable immunity against reinfection with the same virus [11]. It is a slow-spreading disease. Clinical signs in naturally infected birds depend on various factors including virus virulence, host susceptibility, distribution and type of lesions as well as other factors. Two forms of manifestations can be distinguished. The cutaneous form, characterised by nodular proliferative skin lesions on the nonfeathered parts of the body, and the diphtheritic form, which leads to fibrino-necrotic and proliferative lesions in the mucous membrane of the pharynx, esophagus and the upper respiratory tract. A systemic form with high mortality rates is frequently seen in canaries. Cutaneous lesions may occur as papules, pustules, or crusty scabs, depending on the stage of the infection. Diphtheritic lesions are yellow, caseous plaques that are usually found in the mouth or pharynx but may be present in the esophagus, trachea, sinuses, conjunctiva, or larynx. Large cytoplasmic viral inclusions (Bollinger's bodies) are frequently

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present in infected epithelial cells [12]. Acyclovir is synthetic nucleoside analogs of deoxyguanosine, whose antiviral activities are restricted to herpes viruses. Acyclovir is monophosphorylated by viral thymidine kinase 200 times faster than by the similar mammalian enzyme, which contributes to its good selective toxicity and high therapeutic index. Pharmacokinetic data are available for human patients. Acyclovir is available as a topical, oral, and intravenous preparation. Orally administered acyclovir at 80 mg/kg 24 hours after herpes virus infection in Quaker parakeets was shown to be more effective in preventing death than either low or high dose (40 or 250 mg/kg) intramuscular injections. At the highest dose tested, acyclovir toxicity, as seen by local muscular necrosis, was thought to contribute to bird mortality. Acyclovir has been shown to decrease mortality in psittacine birds with herpesviral infections if the drug is administered prior to onset of clinical signs [13]. The purpose of this study was to evaluate the effects of acyclovir on treatment of canary pox.

2. Case Report

During June 2008, two 4-6 months old canaries (one live & one dead) were referred to Avian Medicine Clinic. The live canary had severe respiratory distress with open-mouthed gasping and rales. Excessive lacrimation and conjunctivitis were noted. In dead specimen, upon necropsy, proliferative lesions were observed at the opening to the trachea, and a thick, yellow caseous exudate adhered to the lesions. These lesions extended down the trachea for various distances but were limited to the upper quarter and the exudate had occluded the lumen to the trachea. No external proliferative lesions commonly seen with canary pox were observed in any of these specimens. The live canary was treated with acyclovir at 80 mg/kg each 6 hr/day orally for 10 days and was inspected every day. The appetite of bird was improved gradually. After 10 days, all of clinical signs and gross lesion were disappear. It seems canary pox will be treated by acyclovir at 80 mg/kg each 6 hr/day orally for 10 days.

References


