



ISSN (E): 2277- 7695
ISSN (P): 2349-8242
NAAS Rating 2017: 5.03
TPI 2017; 6(12): 451-452
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www.thepharmajournal.com
Received: 20-10-2017
Accepted: 21-11-2017

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Infectious bovine keratoconjunctivitis and its successful therapeutic management a case report

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Abstract

The present study describe the infectious bovine kerato conjunctivitis in a four months old 100 kg weighing HF cross calf having the clinical sign of anorexia, excessive production of tear and following overflow of tears onto the face. The calf was administered with oxytetracycline LA (10mg/kg body weight) once in 3days alternate basis for 3 weeks. ciprofloxacin eye drops @ 10 drops thrice a day at regular basis for 3 weeks, subconjunctival dexamethasone 0.2ml alternative day and vitamin supplements was given 5 ml intramuscularly and following this treatment the lesion was gradually subsided.

Keywords: Holstin Freisian (HF), Infectious bovine keratoconjunctivitis (IBK), (IM) Intramuscular, (SC) Subcutaneous

Introduction

Infectious bovine keratoconjunctivitis (IBK) is one of the most common diseases of cattle mostly caused by gram negative bacterium known as *Moraxella bovis* (Barner *et al.*,1952) [3] and occasionally by *Moraxella boviculi* (Angelos *et al.*,2007) [1]. Susceptibility for pinkeye varies between breeds, even though most susceptible breeds are Herefords, Jerseys and Friesian (Wilcox, 1968, Webber and Selby, 1981, Snowden *et al.*, 2005) [18, 16, 14]. Other reasons are young animals (Hughes *et al.*, 1970) [8], or ultraviolet (UV) light (sunlight) exposure, high fly population, nutritional deficiencies (Vitamin A, Copper and Selenium), animals with poor host immune system due to Infectious Bovine Rhinotracheitis (IBR) virus, harsh climate, eye irritation or injury during grazing ury to the eye (Baptista *et al.*1970), lacking of eye pigment (Frisch *et al.*, 1975) [5]. Transmission of *M. bovis* is generally by animal handlers or by fomites (equipment or hands that can carry the disease) or direct contact with the discharges of eye or nose of infected animals and or by mechanical vectors (Brown *et al.*,1972) [4]. This disease having economic importance due to poor thrift in affected animals and their financial losses owing to reduction in their weight gain. (www.ca.uky.edu 2012)

Since almost 60 years of research being concluded that various route (intramuscular, subcutaneous, subconjunctival, and topical) of antibiotic administration is effective for the treatment of pink eye disease but till now no treatment protocol is being standardised (O'Connor *et al.*, 2006; Funk *et al.*, 2009) [10, 6]. Effective control of pink eye can be done by use of a specific antimicrobial therapy along with proper, manage mental approach including commercial and autogenous vaccines. The present report puts on record a case of IBK in a HF cross dairy calf and its successful therapeutic management by selective antimicrobial therapy in an organised dairy farm.

Case report

A 4months old HF cross calf (weighing 100kg) was presented with the clinical sign of anorexia, tearing, overflow of tears onto the face, rapid blinking and squinting shade. Anamnesis revealed that herd was neither vaccinated against IBK nor against BHV-1, and annually large number of animal usually presented with the similar symptoms of clinical IBK case. Animals are maintained congested place and this is helping to flare up the disease among calves. Animals are maintained with calf starter (mixed with ground corn grain, soy bean pellet, wheat bran, dicalcic phosphate, sodium chloride and a vitamin-mineral supplement) which are spread on the floor. On close examination of eye revealed that the eye was become cloudy or opaque with central corneal ulceration (a circular pit develops in the center of the eye), swelling and redness of the tissues suggestive of IBK (.fig 1) Oxytetracycline (long acting) intramuscular injection (@ 10mg/kg body weight) as given 10 ml intramuscular 3 days alternatively for 3 weeks along with vitamin supplement 5ml intramuscularly (Pepcid C®)

once in a week, topical application of ciprofloxacin eyedrop 10 drops thrice daily was given for 10 days and subconjunctival dexamethasone 0.2 ml given in alternate day. Gradually the lesion subsided and the calf returned to normal condition. (fig 2)

Result and discussion

Systemic antimicrobial therapy has been recommended as to target *M bovis* located within lacrimal glands and nasal passages. Drugs administered systemically may enter the eye via the tear film or through the perilimbal or intraocular circulation. Generally, lipophilic drugs achieve higher intracorneal and intraocular concentrations and are more effective at penetrating the blood: tear barrier than hydrophilic drugs (Slatter *et al* 1982.)^[11, 12] Elimination of *M bovis* in calves with IBK has been demonstrated following parenteral treatment with oxytetracycline (Smith *et al* 1985 and Starke *et al.*,2007)^[13, 15].

Topical administration of antimicrobial formulations has been recommended as a potentially cost-effective and less labour intensive method for treatment of IBK. (George *et al* 1990)^[7]. Topical ointments can achieve an increased 'contact' time due to increased viscosity and sustained release of drug from small droplets that settle into the inferior cul-de-sac after application as it is a gram negative organism the selective antimicrobial therapy was ciprofloxacin.

Subconjunctival administration of antimicrobials (Kibar *et al* 2006)^[9] aims to reduce treatment costs and total dosages of drug while achieving higher ocular drug concentrations (George *et al* 1990)^[7]. Subconjunctival injections probably lead to some direct diffusion across the sclera and choroid; alternatively, the drug may gradually leak from the injection site, entering the tear film and eventually the eye via the cornea as if it were applied topically (Slatter *et al* 1982)^[11, 12].



Fig 1



Fig 2

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