

INFECTIOUS BOVINE KERATOCONJUNCTIVITIS IN A BUFFALO-CLINICAL AND THERAPEUTIC ASPECTS

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ABSTRACT

Infectious keratoconjunctivitis is a highly contagious ocular infection affecting domestic and wild ruminants transmitted by flies. The condition is caused by various bacteria and is characterized by epiphora, conjunctival inflammation, pigmental areas on the cornea, photophobia, blepharospasm and corneal ulcerations (Thakur *et al.*, 1996; Busch and Belton, 1988; Mishra *et al.*, 1995). Published literature on various aspects of clinical cases of infectious keratoconjunctivitis is very scant in India. Hence, the present paper puts on record some clinicopathological and therapeutic aspects of infectious keratoconjunctivitis in buffaloes.

Keywords: keratoconjunctivitis, clinicopathology, therapeutic aspects, buffalo

HISTORY AND OBSERVATIONS

The cases which were reported to the clinic with the history of excessive lacrimation, corneal opacity, photophobia, corneal ulcers, partial to complete blindness over a period of 2-4 days. Close clinical observations revealed severe conjunctivitis, corneal edema, thickened cornea, whitish yellow opacity on center of cornea, followed by corneal ulceration, mucopurulent ocular discharges. The affected eyes were either unilateral or bilateral. The clinical parameters were within the normal limits with no change in appetite or defecation.

Samples were collected using separate premoistened sterile swabs by inserting into the conjunctival fornix, gently rolled and then inoculated into nutrient broth, transferred to specific agar and

onto sabourauds dextrose agar (SDA) for bacterial and fungal isolation. Further sampling using a sterile dry swab was also done, smeared over a glass slide and then stained with gram and geimsa stains for bacterial and fungal organisms.

RESULTS AND DISCUSSION

The affected buffaloes were randomly divided into two groups of six each and each group was given specific drugs in order to assess the efficacy of the drugs. The buffaloes of Group 1 were treated with Oxytetracycline 10 mg/kg bwt, I/V along with SAID Meloxicam 0.5 mg/kg bwt. Gentamicin eye drops were advised for topical application. In the affected buffaloes of Group 2 were treated with the same drugs but instead of Oxytetracycline, Ciprofloxacin (5 mg/kg bwt) was selected as parenteral antibiotic.

The culture of the swabs revealed the growth of organisms on the specific media like Mannitol Salt Agar which confirmed the *Staphylococcus aureus* (10 cases) and in some cases the cultures are obtained on EMB agar which confirmed *Escherichia coli* (2 cases). However, sampling on SDA did not reveal any growth even after 7-10 days of inoculation, which confirmed that was no fungi. Of the six buffaloes in Group 1, four responded well to the therapy given showing alleviation of clinical signs from day 2 with complete regression of lesions by day 5 whereas, in the two animals with severe corneal ulceration and fibrosis, it took 10 days for complete regression of lesions. However, all the affected animals regained their normal vision. Animals of Group 2, which were treated with parenteral ciprofloxacin, started showing

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regression of signs from day 2, and it took 7 days for complete disappearance and to regain normal vision.

The therapeutic efficacy is assessed based on the time taken for complete recovery. Thus, the therapeutic efficacy of Ciprofloxacin was slightly higher than that of the Oxytetracycline in these cases.

The clinical manifestations reported in the present cases were in accordance with Mishra *et al.* (1995) in cattle Busch and Belton (1988) in goats. Egwu *et al.*, (1989) and Akerstedt and Hofshagem (2004) isolated *Staphylococcus* from ovine infectious keratitis and Scham and Mohammed (1995) isolated *Staphylococcus* and *E. coli* from infected calves and showed that they were the predominant organisms responsible for infectious keratoconjunctivitis. They further reported that *Staphylococcus* occurred more frequently and severely than mildly affected eyes. Various scientists suggested different medical treatment alternatives. Chadli (1992) reported 92.5% recovery rate with a

single injection of Oxytetracycline long acting. Intramuscular injection of long acting Oxytetracycline (20 mg/kg.wt) followed by a second injection 72 h after the initial injection establishes therapeutic levels of the drug in surface ocular tissues and decreases the duration of clinical signs. Subconjunctival injection of long acting Oxytetracycline drug is not recommended because injection results in profound chemosis, blepharodema and conjunctival necrosis. However, gentamycin (20 mg). Penicillin (5000000 iu) and ampicillin (50 mg) can also be injected subconjunctivally initially. The treatment regimen with parenteral Oxytetracycline in combination with topical tetracycline (Busch and Belton, 1988), subconjunctival penicillin (Hill *et al.*, 1986), topical furazolidone (George *et al.*, 1988) were also reported earlier with varied efficacy. Whereas, Thakur *et al.*, (1996) showed that parenteral enrofloxacin (5 mg/kg) for 3-5 days in addition to gentamycin eyedrops was very efficacious in treating caprine and bovine infectious kerato conjunctivitis.



Figure. Corneal ulceration in a buffalo with infectious kerato conjunctivitis.

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