

Chlamydial Proteins Found in Bovine Conjunctival Biopsies

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Summary

Bovine infectious keratoconjunctivitis, commonly known as pinkeye, is estimated to occur in nearly half of all herds in the United States and affects at least 3% of all beef cattle¹. Pinkeye has several etiologies and predisposing factors. *Moraxella bovis* is considered to be the most prevalent bacterial cause of pinkeye and infectious bovine rhinotracheitis is one of the more common viruses incriminated. Adenoviruses², mycoplasma^{3,4}, *Brahmella* (*Neisseria*)⁵, *Listeria*⁶, and *Rickettsia*⁷ have also been recovered from clinical cases of pinkeye. *Neisseria* is reported to be a factor only if the cornea or conjunctiva is already injured or infected by other agents⁷. *Rickettsia* will only produce this condition if injected into the anterior chamber of the eye⁷. Chlamydia has been found in the conjunctivae of sheep in some outbreaks of pinkeye and is reported to be spread by contact⁸. In a study in Czechoslovakia, Dym⁹ isolated chlamydia from conjunctival scrapings of a bovine animal showing signs of pinkeye⁶. It has been shown that if psittacoid bodies are placed on the conjunctiva of susceptible cattle, acute conjunctivitis occurs⁶. Also, when material from infected eyes of cattle was placed on the conjunctiva of uninfected animals, the majority became infected. However, if this material was cultured on special bacteriological media that is required for the growth of *Moraxella bovis* and placed on the conjunctiva of uninfected animals, considerably fewer cattle develop pinkeye⁶.

Because of the chronic or reoccurring lesions in some pinkeye cases and the lack of a definitive diagnosis, some producers and veterinarians have asked about chlamydia

as a possible etiology. Laboratory attempts to identify the causative agent are often disappointing at best. Also, chlamydia is not routinely investigated in bovine eye problems. Chlamydia (being an obligate intracellular bacteria) requires biopsies, scrapings, or swabs containing epithelial cells for proper testing. To evaluate the possibility of chlamydia involvement in bovine pinkeye, veterinary practices in each of the four corners and central Kansas were requested to send conjunctival biopsy samples from pinkeye cases. A total of 47 samples from cattle showing clinical signs of pinkeye were received--representing samples from 35 different herds throughout the state of Kansas. Using a monoclonal antibody enzyme-linked immunosorbent assay (ELISA) to a specific outer membrane protein (unpublished data), chlamydial proteins were found in 7 (14.89%) of the samples.

The positive samples were further confirmed by inoculating sample supernatants into embryonated chicken eggs and observation of Gimenez stained elementary bodies in yolk sac impression smears. It is not the authors' contention, at this time, to incriminate chlamydia as a major pinkeye etiology. However, based on the results of this survey, it appears that further work needs to be done. Both clinically positive and negative cattle should be tested to determine the significance of these findings. Also, Koch's postulates should be satisfied. Only then can we completely evaluate chlamydial involvement in bovine pinkeye.

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1 gram vial—Reconstitute with 20 mL Sterile Water for Injection or Bacteriostatic Water for Injection. Each mL of the resulting solution contains ceftiofur sodium equivalent to 50 mg ceftiofur.

4 gram vial—Reconstitute with 80 mL Sterile Water for Injection or Bacteriostatic Water for Injection. Each mL of the resulting solution contains ceftiofur sodium equivalent to 50 mg ceftiofur.

Reconstituted product should be used within 12 hours if stored at controlled room temperature or within 7 days if stored in a refrigerator (see STORAGE CONDITIONS).

NAXCEL should be administered by intramuscular injection to cattle at the dosage of 0.5 to 1.0 mg ceftiofur per pound of body weight (1-2 mL reconstituted sterile solution per 100 lb body weight). Selection of dosage (0.5 to 1.0 mg/lb) should be based on the practitioner's judgment of severity of disease, (i.e., extent of elevated body temperature, depressed physical appearance, increased respiratory rate, coughing and/or loss of appetite). Treatment should be repeated every 24 hours for a total of three treatments. Additional treatments may be given on days four and five for animals which do not show a satisfactory response (not recovered) after the initial three treatments.

CONTRAINDICATIONS

As with all drugs, the use of NAXCEL Sterile Powder is contraindicated in animals previously found to be hypersensitive to the drug.

RESIDUE WARNINGS

Neither a pre-slaughter drug withdrawal interval nor a milk discard time is required when this product is used according to label indications, dosage, and route of administration. Use of dosages in excess of those indicated or routes of administration other than recommended may result in illegal residues in tissues and/or in milk.

**NOT FOR HUMAN USE
KEEP OUT OF REACH OF CHILDREN**

ADVERSE REACTIONS

The use of NAXCEL Sterile Powder may result in some signs of immediate and transient local pain to the animal.

STORAGE CONDITIONS

Store unreconstituted product in a refrigerator 2°-8° C (36°-46° F).

Store reconstituted product either in a refrigerator 2°-8° C (36°-46° F) for up to 7 days or at controlled room temperature 15°-30° C (59°-86° F) for up to 12 hours.

Reconstituted NAXCEL can be frozen for up to 8 weeks without loss in potency or other chemical properties. Carefully thaw the frozen material under warm to hot running water, gently swirling the container to accelerate thawing. The frozen material may also be thawed at room temperature.

Protect from light. Color of the cake may vary from off-white to a tan color. Color does not affect potency.

HOW SUPPLIED

NAXCEL Sterile Powder is available in the following package sizes:

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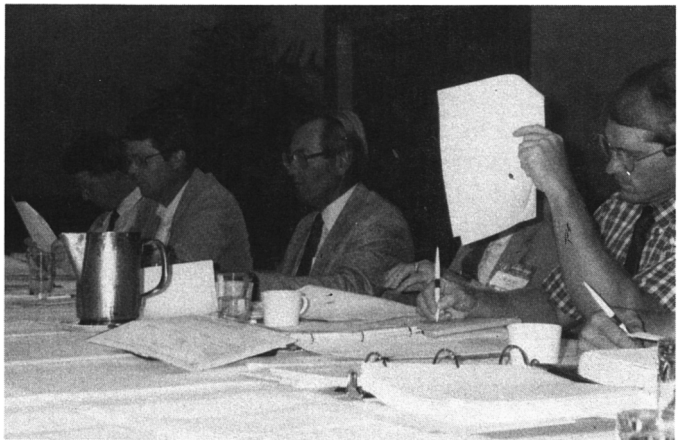
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