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## Clinical Management of Infectious Bovine Keratoconjunctivitis (IBK) With Ceftriaxone Sodium: A Case Report

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### Abstract:

Infectious bovine keratoconjunctivitis (IBK) is one of the most common eye diseases of cattle with a major economic impact in the world. This disease mainly caused by *Moraxella bovis* (M. bovis) bacteria. This bacterial infection of the eye causes inflammation which may lead to temporary or permanent blindness. Many types of local and systemic antibiotics and anti-inflammatory agents were used in treating the condition. This paper presents the case of infectious bovine keratoconjunctivitis in a four months pregnant lactating Holstein Friesian cow aged 5 years old, 300Kg weighing was presented to the clinic with primary complains of eye problem and inappetence and loss of appetite since five days. Clinical examination findings revealed that the cow was depressed. The most prominent abnormality observed was corneal opacity of the right eye with presence of chemosis of the right conjunctiva with excessive lacrimation. The cow was treated with Intramuscular injection of Ceftrimax (5mg/ kg b.wt) five doses in alternative days. Phenylbutazon (4mg/ kg b.wt) was given intramuscularly once daily for three days as anti-inflammatory and analgesic. Furthermore, Genta-Dex eye drop (Gentamycin and Dexamethasone) was applied twice daily for 2 days.

Conclusion: The prognosis for this case was good as the cow was treated promptly and effectively by Ceftriaxone sodium intramuscularly.

**Keywords:** Infectious Bovine Keratoconjunctivitis (IBK), *Moraxella Bovis* (M. Bovis), Pinkeye, Holstin Freisian (HF).

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## الإدارة السريرية لالتهاب القرنية والملتحمة البقري المعدي (IBK) باستخدام سيفتراكسون الصوديوم: تقرير حالة

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### الملخص

يعد التهاب القرنية والملتحمة البقري المعدي (IBK) أحد أكثر أمراض عيون الماشية شيوعاً وله تأثير اقتصادي كبير في العالم. هذا المرض يسببه بشكل رئيسي بكتيريا الموراكسيلا بوفيس (*M. bovis*). تسبب هذه العدوى البكتيرية للعين التهاباً قد يؤدي إلى العمى المؤقت أو الدائم. تم استخدام أنواع عديدة من المضادات الحيوية الموضعية والجهازية ومضادات الالتهاب في علاج الحالة. يعرض

هذا البحث حالة التهاب القرنية والملتحمة البقري المعدي في بقرة هولستين فريزيان مرضعة حامل في الشهر الرابع تبلغ من العمر 5 سنوات، ووزنها 300 كجم، ابلاغنا المربي في العيادة عن مشكلة في العين وفقدان الشهية منذ خمسة أيام. وأظهرت نتائج الفحص السريري أن البقرة كانت مكتئبة. وكان أبرز ما لوحظ هو عتامة القرنية في العين اليمنى مع وجود كيميائي في الملتحمة اليمنى مع دمغ مفرط. عولجت البقرة بالحقن العضلي سيفتراكسون الصوديوم (5 ملغم/كغم من وزن الجسم) خمس جرعات في أيام متناوبة مع إعطاء الفينايل بوتازون (4 ملغم/كغم من وزن الجسم) في العضل مرة واحدة يومياً لمدة ثلاثة أيام كمضاد للالتهابات ومسكن. علاوة على ذلك، تم تطبيق قطرة العين Genta-Dex (الجنتاميسين والديكساميثازون) مرتين يومياً لمدة يومين.

**الكلمات المفتاحية:** التهاب القرنية والملتحمة البقري المعدي (IBK)، الموراكسيلا البقرية (*M. bovis*)، العين الوردية، هولستين فريزيان (HF).

## Introduction

Infectious bovine keratoconjunctivitis (IBK) highly contagious disease, causes great economic impact such as decreases feed intake, growth retardation, reduction in milk production of dairy cows and decreases in cow's value [4,6,10].

In cows, *M. bovis* infection is the main etiological agent causing pinkeye [7]. This infection causes inflammation of the tissue lining the eyelid, cornea and conjunctiva with ulceration in the center of the cornea which appears as a small white spot. The cornea develops a slightly cloudy grey appearance due to inflammation, either as unilateral or bilateral. Ulceration of the eye in chronic cases may cause temporary or permanent blindness. There are many predisposing factors to the disease such as season, dust, host immunity deficiency, sunlight, breed of cow and eye pigmentation [4,10,12,13]. Transmission of *M. bovis* directly is by direct contact, nasal and ocular discharges, and indirectly by the face fly [2].

## Material and methods

A four months pregnant lactating Holstein Friesian (HF) cow aged 5 years old, weighed about 300Kg was presented to the clinic with primary complains of eye problem and inappetence and loss of appetite five days ago. Clinical examination findings revealed that the cow was depressed. The most prominent abnormality observed was corneal opacity of the right eye with presence of chemosis of the right conjunctiva with excessive lacrimation (Figure 1). Treatment program for this case was as follows, Intramuscular injection of Ceftriaxone sodium (Ceftrimax, 5mg/ kg b.wt, AnVet, Vn) five doses in alternative days. Phenylbutazon (phenyl-Ject, 4mg/ kg b.wt , Adwia, Eg) was given intramuscularly once daily for three days as anti-inflammatory and analgesic. Furthermore, Genta-Dex eye drop (Gentamycin and Dexamethasone) was applied twice daily for 2 days.



**Figure1** Ocular lesions consisting of excessive lacrimation, edema and corneal opacity

## Results and discussion

The prognosis for this case was good because the cow was treated promptly and effectively. Follow up showed that the cow responded well to the medications after one week post treatment as the corneal opacity of the right eye and chemosis had both resolved (Figure 2).



**Figure 2** Resolve of corneal opacity and improvement in lacrimation and vascularization.

It is well known that the keratoconjunctivitis can affect almost all animal species, but cows are more susceptible than other species where it is considered as common manifestation [7]. It was reported in both Herford and Holstein Friesian [4,13]. The goals of IBK treatment to decrease the disease severity, shorten disease duration and improve animal. Systemic and topical antibiotics have been recommended for the treatment of pink eye disease but till now no treatment protocol is being standardized [5,8,11]. Florfenicol and Oxytetracycline have previously been found to be effective in the treatment of IBK in controlled trials [1,5,9]. The auricular drug administration of ceftiofur found to be effective in the treatment and control of naturally occurring IBK [3]. In this report, we diagnosed this case in a Holstein Friesian cow and was treated mainly with Ceftriaxone sodium intramuscular injection which is replaced the use of Oxytetracycline.

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### Conclusion

The prognosis for this case was good as the cow was treated promptly and effectively by Ceftriaxone sodium intramuscularly.

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