

Zagazig University (Benha Branch)  
 Fac. Vet. Med., Moshtohor,  
 Surgery Department.  
 Head Dept., G.M. Othman

## INFECTIOUS CAPRINE KERATOCONJUNCTIVITIS

(With 10 Figures)

By

S.F. ISMAIL

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### التهاب القرنية والملتحمة الساري في الماعز

سامي فرغلي

تم في هذه الدراسة تسجيل عدد ٢٨ حيوانا من الماعز كانت تعاني من التهاب القرنية والملتحمة الساري (المعدى) وقد وجد أن معدل الإصابة يمثل ٢٢% من عدد الحيوانات الكلى (٢٨ حيوانا من ١٢٧). وقد أمكن عزل ميكروب الميكوبلازما ميوكويديس من ملتحمة الحيوانات المصابة. وتم علاج جميع الحالات باستخدام التيلوزين تترترات المخصص لعلاج الميكوبلازما، هذا بالإضافة الى العلاج المتبع لاصابات القرنية والملتحمة. هذا وقد استجابت جميع الحالات التي تم علاجها بصورة ناجحة وذلك في خلال أسبوع الى أسبوعين من بداية العلاج.

Animal No.	Sex	Age	Weight (kg)	Height (cm)	Length (cm)	Width (cm)
1	♂	1.5	12.5	100	15	10
2	♀	1.5	12.5	100	15	10
3	♂	1.5	12.5	100	15	10
4	♀	1.5	12.5	100	15	10

## INFECTIOUS CAPRINE KERATOCONJUNCTIVITIS

## SUMMARY

In an outbreak of keratoconjunctivitis in goats, *Mycoplasma mycoides* was isolated. The condition was recorded bilaterally in 28 cases with a morbidity rate about 22% (28 cases out of 127). The newly weaned kids are severely and mostly affected than the adult goats (23 cases and 5 cases, respectively). Tylosin administration for treatment of the affected cases seems to shorten greatly the course of the disease.

## INTRODUCTION

Infectious caprine keratoconjunctivitis is widely spread in goats and has a similar pattern of occurrences to infectious hbovine keratoconjunctivitis in cattle and infectious ovine keratoconjunctivitis in sheep (GELATT, 1981 and SLATTER, 1990). *Mycoplasma* has been associated with keratoconjunctivitis in goats and sheep, and the respective conjunctival isolates were *mycoplasma mycoides* var *capri* and *mycoplasma conjunctiva* var *ovis* (JONAS & ANDERSON, 1969; LANGFORD, 1971 and McCAULEY, SURMAN & ANDERSON, 1971). The disease is an epizootic and may last two months (McCAULEY *et al.*, 1971 and GELATT, 1981).

## MATERIAL and METHODS

During the summer of 1992, an out break of keratoconjunctivitis was recorded in goats. 28 clinical cases were seen to be affected. The condition was subjected to a full study including clinical and bacteriological examinations, diagnosis and treatment (specific and symptomatic).

Keratoconjunctivitis in such affected cases seems to be of infectious in origin. So, isolation of the affected animals into a cleaner enviroment and eradication of the face flies were the first steps to control the disease.

Conjunctival scrapings were taken from the affected cases and inoculated into glass dishes with soft agar medium (pH 7.8) with potassium phosphate added. Culture plates must be sealed with adhesive tape to prevent moisture loss. Incubation is aerobic at 35°C and colony growth is visible in 24 to 48 hours of incubation (After MARMION, 1967).

A loop from the colony growths was streaked on a glass slid and stained by Giemsa or basic carbol fuchsin. Then, the stained glass slide was microscopically examined for



S.F. ISMAIL

identification of the causative microorganism. The characteristics pleomorphic, coccobacillary and ring shaped bodies of mycoplasma mycoides was observed.

The treatment and control of infection in such condition were concised in the following steps:

- 1- Isolation of the affected animals into a cleaner environment
- 2- Eradication of the face flies.
- 3- Tylosin tartarate (specific for treatment of mycoplasma infection) was administrated orally in a dose of 0.5 gm/liter of drinking water twice daily.
- 4- Symptomatic treatment which includes:
  - Washing the conjunctival sac with 2% boric acid solution for flushing and removal of secretions.
  - Hot fomentation to the closed eyeball twice daily (early in the morning and at night).
  - Topical application of atropine sulphate 1% solution to reduce the chance of anterior synechia in suspected cases to be associated with iridocyclitis.
  - Subconjunctival injections of both corticosteroids (Dexa-scheroson ampouls) and broad spectrum antibiotic (Garamycin ampouls) once, day after day.
  - Local application of chloramphenicol eye drops followed by polyspectran eye ointment, 3 times daily.

## RESULTS

Infectious caprine keratoconjunctivitis in the present study was recorded in 28 clinical cases with a morbidity rate about 22% (28 cases out of 127). Bacteriological investigations revealed that the condition was associated by mycoplasma mycoides infection. The flies appears to act as the main vector for transmission of the infection in such outbreak (Fig. 3, 5 & 7). Newly weaned kids are severely and mostly affected than adult goats (23 cases and 5 cases, respectively).

The clinical signs of Keratoconjunctivitis were recorded bilaterally in all affected cases (Fig. 6 & 7). The earliest signs begin with an excess of lacrimation, photophobia and blepharospasm. A corneal haze and faint deep cilliary vessels begin to invade the cornea at the limbus (Fig. 1). In advanced cases, an interstitial keratitis developed with deep vascularization and oedema of the cornea (Fig. 3, 6, 7). In certain cases focal stromal corneal abscesses were recorded and appeared to be associated with the signs of deep (interstitial) keratitis (Fig. 5 & 8).

Affected casses do not respond to the symptomatic treatment alone. Therefore, Tylosin Tartarate (specific for



# INFECTIOUS CAPRINE KERATOCONJUNCTIVITIS

treatment of mycoplasma infection) was administered.

Improvement of the affected cases was observed and the corneas regain their transparency within one to two weeks from the onset of the proper treatment (Fig. 2, 4, 9 & 10).

## DISCUSSION

Infectious caprine keratoconjunctivitis is apparently separate disease in goats and *Mycoplasma mycoides* has been associated with such a condition (JONAS *et al.*, 1969).

All breeds of goats are equally susceptible, although young kids are more severely affected than adults. Newly weaned kids are the most susceptible (SLATTER, 1990).

The statement of GELATT (1981) that, goats affected with infectious caprine keratoconjunctivitis do not usually develop corneal ulcers or hypopyon, is in consequence with our results.

Tylosin seems to shorten greatly the course of the disease (McCAULEY *et al.*, 1971). An improvement of the affected cases and the corneas regain their transparency within one to two weeks from the onset of tylosin administration followed by symptomatic treatment. In spite of this GELATT (1981) stated that a permanent corneal opacity and blindness may occasionally result from the disease.

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S.F. ISMAIL

- fig. 1: An early stage of infectious caprine K.C. in a newly weaned kid. Note: The corneal haze and the ciliary blood vessels begin to invade the cornea at the limbus.



- Fig. 2: The same case in Fig. (1). One week from the onset of treatment.



- Fig. 3: An advanced stage of infectious caprine K.C. in a newly weaned kid. The conjunctiva was injected. Signs of severe degree of deep K. (the characteristic ground glass-like appearance with deep ciliary vascularization).





# INFECTIOUS CAPRINE KERATOCONJUNCTIVITIS

Fig. 4: The same case in Fig. (3), two weeks from the onset of treatment.

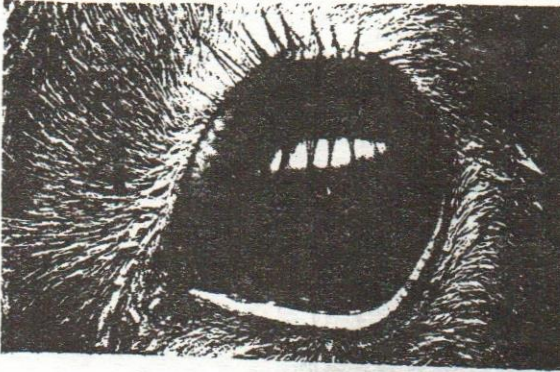
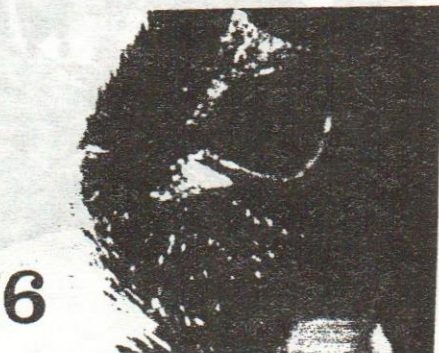


Fig. 5: An advanced stage of infectious caprine K.C. in a newly weaned kid. Note: The conjunctival injection. Central stromal corneal abscess associated with the clinical sings of deep K. The flies were seen to act as a vector for transmission of the infection.



Fig. 6: An advanced stage of I.C.K.C. in L. eye of the same Kid in Fig. (1).



S.F. ISMAIL

Fig. 7: Anadvanced stage of I.C.K.C. in R. eye of the same in Fig. (6).



Fig. 8: Infectious caprin K.C. in adult goat, 10-days after the onset of the clinical signs. Note: The focal stromal corneal abscesses with deep ciliary vascularization.





## INFECTIOUS CAPRINE KERATOCONJUNCTIVITIS

Fig. 9: The same case in Fig. (8) one week from the onset of the treatment.

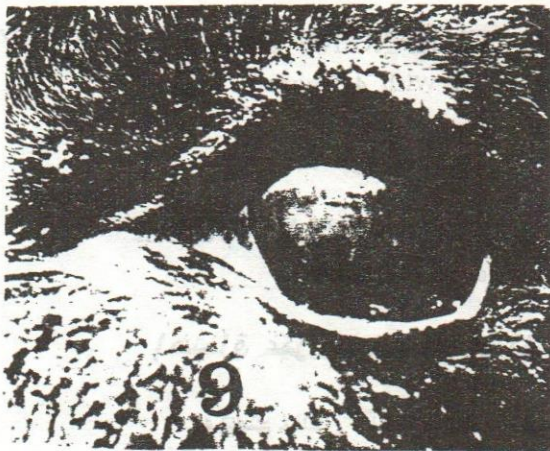


Fig. 10: The same case in Fig. (8 & 9), two weeks from the onset of the treatment.

