



ISSN (E): 2277- 7695  
ISSN (P): 2349-8242  
NAAS Rating: 5.03  
TPI 2020; SP-9(8): 42-43  
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[www.thepharmajournal.com](http://www.thepharmajournal.com)  
Received: 03-06-2020  
Accepted: 06-07-2020

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## Therapeutic management of leptospirosis in a goat: A case report

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### Abstract

A three year old female goat was presented with a history of swollen right teat and reddish discolouration of milk. On clinical examination, the animal had pyrexia and haemagalactia from right teat. Haematological examination revealed severe leukocytosis with mild anaemia. The goat was diagnosed with leptospirosis due to *Leptospira interrogans* serovar Canicola and treated accordingly. The animal recovered uneventfully.

**Keywords:** Benzyl penicillin, goat, haemagalactia, leptospirosis, right teat

### 1. Introduction

Leptospirosis is a widespread zoonotic disease. Sub clinically infected farm animals and rodents can act as a source of this infection. Goats are considered less susceptible to leptospirosis than other domestic farm animal species. The disease is seen as both acute and chronic forms in goats with common clinical signs of pyrexia, anorexia, depression and in severe cases, with jaundice and haemorrhagic syndromes [1]. The chronic form results in impaired fertility, neonatal deaths, abortions and decreased milk production leading to heavy economic loss [2]. Chronic form is more common than acute form with abortions and reduced milk production. The disease usually goes unnoticed in small ruminants as most of the time it runs in subclinical form. In goats serovars of *Leptospira interrogans* are the common agents which cause the disease. This article deals with a case presented at our private clinic, Hoo's N Paws, Ponnani, Malappuram district of Kerala caused by *Leptospira interrogans* serovar Canicola.

### 2. Case history and Observations

A three year old female goat was presented with a history of anorexia, swollen right teat and reddish discolouration of milk. The animal kidded 25 days before and two kids were apparently healthy. On clinical examination, the animal had a temperature of 105.6 °F with a congested mucous membrane. Right teat was swollen, painful to touch and haemagalactia could be observed. The left teat was apparently normal and milk was normal in colour and consistency. The disease was tentatively diagnosed as mastitis from the clinical signs and milk sample was sent for culture and sensitivity test. Haematological examination revealed leucocytosis with anaemia. Culture and sensitivity test of milk sample revealed gram negative bacilli which are sensitive to gentamicin, tetracycline and cotrimoxazole.

### 3. Treatment and Discussion

The animal was treated with combinations of gentamicin and cotrimoxazole for five days. Since a favourable treatment response was not observed, serum sample was subjected to microscopic agglutination test (MAT) and found positive for *Leptospira interrogans* serovar Canicola at 1: 200 dilutions. Antibiotic was changed to Benzyl penicillin on 6<sup>th</sup> day at a dose rate of 40,000 IU/kg intravenously twice daily for the next 10 days along with supportive intravenous fluid administration. Animal started to take feed and water and the clinical signs reduced by 4 days. Discharged the animal and continued treatment orally with doxycycline at 10 mg/kg body weight for another two weeks. After two weeks, the animal became normal and an uneventful recovery could be observed.

Caprines are less susceptible to leptospirosis. In the present case, the etiological agent of the disease was *Leptospira interrogans* serovar Canicola. The infection is mainly caused by the incidental serovars of a particular region. The variation in the presence of serovars might be

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due to their habitation and no species specificity could be observed in their distribution [3]. Initially infection with *Leptospira* organism causes bacteremia and septicaemia and then subsequent localisation of organisms in the kidney leading to leptospiruria. Transplacental migration of bacteria may cause abortion in the second half of pregnancy. Fever (104-106°F), anorexia, depression, tachycardia, icterus of mucous membrane, petechial haemorrhages on the conjunctiva and reddish brown urine are the main clinical signs observed in the disease. It is one of the major infectious diseases affecting the reproductive performance of dairy goats [2]. Here in this the animal had kidded 25 days before and milk production was drastically reduced with a change in consistency and colour. Once infected, the animal sheds leptospire in the environment and act as continuous source of infection to other animals and humans [4]. In acute leptospirosis, the affected animals without treatment may die within 2-3 days. A multifaceted management regimen including vaccination and antibiotic therapy is ideal for the control and treatment of leptospirosis in ruminants [5].

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**Fig 1:** Reddish discolouration of milk from swollen right teat



**Fig 2:** Swollen right teat with normal left one

#### 4. Conclusion

In the present case, leptospirosis in a female goat and its successful management with antibiotics along with supportive therapy is documented. Antibiotic therapy with benzyl penicillin successfully helped to manage the case without complications. It can be concluded that proper diagnosis, treatment, supportive care can save a goat's life and bring back its normal milk production.

#### 5. References

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