



## Diagnosis of Theileria in Goat and its Effective Therapeutic Management

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**ABSTRACT:** One of the most common tick-borne hemprotozoan diseases in goats is theileriosis, a haemoprotozoan disease cause devastating losses to the livestock industry throughout the world due to loss of productivity and cost of treatment. Theileriosis is mostly spread by ixodid ticks belonging to the genus *Hyalomma* and *Rhipicephalus*. Amale Sirohi goat, eight months old, was brought in Teaching Veterinary Clinical Complex within termandibularoedema, weakness, and inappetence for three days. After a thorough clinical examination, rough body coat, emaciation, prostration, difficulty standing, pyrexia, tachycardia, pale mucous membranes, and swollen lymph nodes were found. The goat's hematobiochemical abnormalities included anaemia, a decreased haematocrit, leucocytosis, hypoproteinaemia, and hypoalbuminemia. Theileriosis infection is confirmed by the presence of Piroplasm in the red blood cells of peripheral blood smears stained with Giemsa. In this case clinical observations, laboratory testing, and blood smear analysis were used to diagnose the cases, and treatment with combined therapy of Buparvaquone and oxytetracycline, along with haematinics and multivitamins, and advised of beet feeding was found effective against Theileriosis.

**Keywords:** Theileria, anaemia, buparvaquone, *Hyalomma*, *Rhipicephalus* and goat.

### INTRODUCTION

Weather and tropical climate is main reasons behind the high prevalence of clinical theileriosis in India (Arun, 2017) and due to lost production and treatment costs, hemoprotozoan illness causes huge losses to the livestock business worldwide (D'Haese *et al.*, 1999). Vector-borne hemoprotozoan infections are among the diseases that especially affect small ruminant animals, and their prevalence limits the efficiency of these systems. Numerous species of *Theileria*, notably *Theileria annulata* and *Theileria ovis*, are responsible for the tick-borne protozoan disease known as "Theileriosis," which affects cattle, sheep, goats, buffaloes, horses, and ungulates in both the wild and in captivity. Muller *et al.* (2015) concluded that buparvaquone is the most effective medication used to treat theileriosis since 1980. The effectiveness of antitheilerial medicine (Buparvaquone), supportive therapy, and hematinic vitamins is discussed in this paper.

**Case report.** A male Sirohi goat, eight months old, was brought in Teaching Veterinary Clinical Complex with a history of prostration and anorexia. Lately rough body coat, emaciation, prostration, jowl edema, lethargy, pyrexia (105°F), tachycardia, pale mucous membrane, and mild lymph node enlargement were all found

during a routine clinical examination. For diagnostic purposes, blood samples were analyzed for the presence of hemoprotozoa and alterations in Hemato-biochemical. The goat's hemato-biochemical abnormalities include anemia, decreased hematocrit, leucocytosis, hypoproteinemia, and hypoalbuminemia (Table 1). When a blood smear was made from peripheral blood, stained with Giemsa stain, and examined under oil immersion (x100), *Theileria* was found in RBCs (Fig. 1). Based on the identification of Piroplasm (parachute, comma-shaped) in the red blood cells of the Giemsa-stained peripheral blood smears by microscopy, the case was classified as theileriosis.

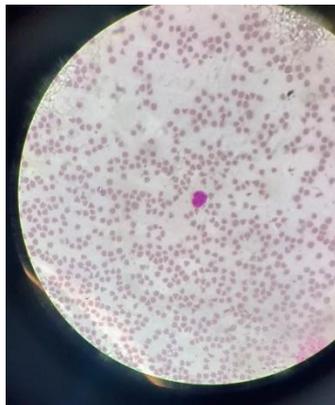
Blood samples were taken for parasitological and hemato-biochemical investigation on days 0 and 10. In this instance, the treatment for theileriosis was administering two intramuscular injections of buparvaquone (Butalex) at a rate of 2.5 mg/kg B.W. deep I/M separated by 48 hours. Oxytetracycline was administered intravenously once daily with NS for five days at a dose of 10 mg/kg body weight. Meloxicam (0.5 mg/kg body weight) was administered subcutaneously once intramuscularly. To improve anaemia, the supportive treatment consists of a 1.5 ml IV ly OD injection of vitamin B complex for five days, followed by two teaspoons of hematinic syrup PO BID

for seven days. The animal's clinical condition steadily improved starting on the second day of treatment, and

after the tenth day, a smooth clinical recovery was observed.

**Table 1: Hemato-biochemical parameters comparison between the 0th day and the 10th day of treatment in a goat with Theileriosis.**

Parameters	0th day	10th day	Normal range (Goat)
Hemoglobin (g/dl)	7.3	10.4	8 – 12
TEC ( $10^6/\text{mm}^3$ )	8.1	9.8	8 – 18
PCV (%)	24.1	39.3	22 – 38
TLC ( $10^3/\text{mm}^3$ )	18.76	12.87	4 – 13
Total serum protein (g/dl)	5.1	6.3	6.0 – 7.9
Albumin (g/dl)	2.03	2.96	2.7 – 3.9



**Fig. 1.** Microscopic view of Theileria, in RBCs of the infected goat.



**Fig. 2.** Post-treatment photo of a goat.

## DISCUSSION

Theileria spp. are spread by ixodid ticks, which are members of the genera *Hyalomma*, *Haemophysalis*, and *Rhiphicephalus*. Theileria infection was established in this goat instance by the presence of comma- and parachute-shaped piroplasm in the red blood cells (RBCs), which Altay *et al.* (2007) also described. Although it is less sensitive than molecular methods like polymerase chain reaction (PCR) for the detection of low levels of parasitaemia in theileriosis-affected animals, still microscopical analysis of stained blood smears can be used as a quick confirmatory diagnostic test for the beginning of curative treatment in animals affected by the disease (Begam *et al.*, 2019).

Significant changes in the haematobiochemical parameters linked to theileriosis in this study include anemia, decreased haematocrit, leucocytosis, hypoalbuminemia, and hypoproteinemia. The affected goat develops intermandibular edema as a result of these alterations. Al-Amery and Hasso (2002). also stated the same. Anaemia in theileriosis is brought on by the immune system destroying erythrocytes infected

with piroplasms, whereas leucocytosis in the early stages of infection is produced by enhanced lymphocyte proliferation. This aligns with the results of Banka *et al.* (2020), who also noted anemia, leucocytosis, and low PCV. They postulated that low microvascular perfusion and organ dysfunction result from variations in the osmolality of circulating blood, which lessen red blood cells' ability to deform under particular pathophysiological circumstances. In small ruminant theileriosis, Al-Fetly (2012) also discovered hypoproteinaemia and hypoalbuminemia. Hypoproteinaemia with notably low albumin levels may be the cause of intermandibular oedema in the afflicted goat in this case study. Since buparvaquone is the preferred medication for treating all forms of theileriosis, oxytetracycline in combination with it is recommended for the effective treatment of theileriosis (Banka *et al.*, 2020). The afflicted goat was therefore treated with supportive therapy in addition to a dosage of oxytetracycline and buparvaquone. Supportive therapy with anti-inflammatory medications and multivitamin preparations, including haematinics, is recommended to improve the animal's anaemia status and reduce the inflammatory process associated with theileriosis (Nagar *et al.*, 2019). Banka *et al.* (2020) similarly followed a similar treatment plan with just minor modifications. Early clinical and laboratory diagnosis linked to early therapeutic intervention of the disease, acarid control, and improvement of the animal's overall nutritional status through adequate concentrate and roughage feeding are the main strategies recommended for effective clinical and preventive management of theileriosis.

## CONCLUSIONS

The findings of this clinical case study showed that a combination treatment of 2.5 mg/kg of buparvaquone and 10 mg/kg of oxytetracycline, resulted in uneventful recovery without any problem, thanks to supportive therapy, which is effective against Theileria and has no negative side effects.

## REFERENCES

- Al-Amery, M. A. Y. & Hasso, S. A. (2002). Laboratory diagnosis of novel species of *Theileria hirci*, *Eimeria caprovina* and *Eimeria pallida* in goats in Iraq. *Small Ruminant Research*, 44(2), 163-166.
- Al-Fetly, D. R. H. (2012). Detection of *Theileria* spp. in blood samples and estimation of haematological and biochemical changes in sheep in Al-Diwaniya

- province. *Kuŧa Journal for Veterinary Medical Sciences*, 3(2), 45-53.
- Altay, K., Aktaŧ, M. & Dumanli, N. (2007). Theileria infections in small ruminants in the east and southeast Anatolia. *Türkiye Parazitoloji Dergisi*, 31(4), 268-271.
- Arun, B. A. (2017). Prevalence and clinico-therapeutic management of theileriosis in buffaloes (doctoral dissertation, Maharashtra Animal and fishery sciences, university).
- Begam, R., Talukdar, S. K., Sarmah, P. C., Bulbul, K. H., Kakati, P., Tamuly, S. & Islam, S. (2022). Molecular and microscopic detection of *Theileria luwenshuni* infection in goats in and around Guwahati of Assam, India. *Biological Rhythm Research*, 53(1), 18-25.
- Banka, P. R., Sivaraman, S., Vijayakumar, G. & Arulmozhi, A. (2020). Successful Therapeutic Management of Theileriosis in a Goat-A Case Report. *International Journal of Current Microbiology and Applied Sciences*, 9(5), 1481-1484.
- D'Haese, L., Penne, K. & Elyn, R. (1999). Economics of theileriosis control in Zambia. *Tropical Medicine & International Health*, 4(9), A49-A57.
- Muller, J., Aguado-Martinez, A., Manser, V., Balmer, V., Winzer, P., Ritler, D. & Hemphill, A. (2015). Buparvaquone is active against *Neospora caninum* in vitro and in experimentally infected mice. *International Journal for Parasitology: Drugs and Drug Resistance*, 5(1), 16-25.
- Nagar, J. K., Gurjar, T., Mali, M. M., Bargujar, J., Meena, O. & Akshay Kumar (2019). Therapeutic management of theileriosis in bovines. *Journal of Entomology and Zoology Studies*, 7(2), 495-497.

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