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CONCURRENT HAEMOPROTOZOAN AND ENDOPARASITIC INFECTION IN GOATS

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Abstract: A small goat farm consisting of eight adult goats was reported with inappetance, dullness and unable to stand for the past four days. Clinical examination of the dull animals revealed blanched conjunctival mucous membrane, swollen pre-scapular lymph nodes, rectal temperature of 37°C ± 0.5 with severe acariasis in 6 goats. Blood smear examination revealed the presence of *Anaplasma marginale* and *Babesia* spp. in one goat with Hb of 7g %, PCV-22 %, TLC – 10, 500 cells / mm^3 and DLC: N – 45 % and L – 55 %. *Anaplasma marginale* alone was found in the blood smear of another goat. Dung examination revealed that all the goats were positive forova of *Strongyle, Strongyloides* and oocyst of *Coccidia*. The animals were treated with oxytetracycline, diminazeneaceturate and fenbendazole.
Keywords: *Anaplasma marginale*, *Babesia*, Endoparasites, Goats.

Introduction

Ticks and tick borne diseases (TTBDs) spread throughout the world predominantly in tropical and subtropical regions. Common tick-borne diseases mainly are babesiosis, anaplasmosis and theileriosis which have significant economic importance regionally and locally (Ahmed *et al.,*2002). In India Anaplasmosis is considering as the economically important rickettsial diseases affecting goats (PD_ADMAS, 2005) mainly transmitted by the tick *Rhipicephalusmicroplus* (Ghosh and Nagar, 2014). It is an infectious, non-contagious disease characterized by fever, dyspnea, progressive anemia, jaundice, lethargy and anorexia (Razmi*et al*., 2006). The hot and humid climate is very favorable for the growth and enduranceof probable vectors such as ticks and cause infection to predisposed animals (Hossain *et al*., 2006)

Materials and methods

A small goat farm consisting of eight adult goats was reported with inappetance, dullness and unable to stand for the past four days.

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Clinical assessment:

Clinical examination of the dull animals revealed blanched conjunctival mucous membrane, swollen pre-scapular lymph nodes, rectal temperature of 37°C ± 0.5 with severe acariasis in 6 goats.

Laboratory assessment:

Blood smear examination revealed the presence of *Anaplasma marginale* and *Babesia* spp. in one goat with Hb of 7g %, PCV-22 %, TLC – 10, 500 cells / mm^3 and DLC: N – 45 % and L – 55 %. *Anaplasma marginale* alone was found in the blood smear of another goat. Dung examination revealed that all the goats were positive for ova of *Strongyle, Strongyloides* and oocyst of *Coccidia*.

Treatment

The animals were treated with Inj. Oxytetracycline @ 10mg/ kg b.wt. I.V., Inj. Tribivet – 2ml I.M for three days and a single dose of Inj. Diminazeneaceturate@ 3.5mg/kg b.wt. I.M, Tab. Fenbendazole @ 10 mg/kg P.O. Supportive fluid therapy was given with Inj. Dextrose Normal Saline - 50ml I.V and Inj. Ringers Lactate - 50ml I.V for three days.

Result and Discussion

The blood smear was negative for *Anaplasma marginale* and *Babesia* organisms and the fecal sample was negative for the presence of any ova/oocyst, after two weeks of treatment. The animals showed remarkable improvement with increased appetite and activeness. No recurrence was noticed further.

Anaplasma is a tick born disease and it is transmitted by 20 different species of ticks (Kocan*et al*., 2004), including *Rhipicephalus* spp., *Hyalomma* spp., *Boophilus* spp., *Ixodes* spp. and *Demacentor* spp (Aubry and Geale, 2011). Goat production plays an important role in profitableearnings of rural people in rising countries (Ahmadi *et al*., 2012).

Scanty reports were known in goats due to subclinical character of the disease, it is considered to be of small importance (Akerejola *et al*., 1979). High incidence in goats may be due to increased nomadicmovement for seek out of feed, reproduction and selling (Arunkumar, 2014). Anaplasmosis is largely seen in hot and humid climate (Roger *et al*., 2008). The identification of piroplasm in goat is based on the microscopic examination of blood smears stained by giemsa stain and clinical signs in severe cases. After severe infection, improved animals often maintain subclinical infections, which are microscopically unnoticeable (Calder *et al*., 1996).

Molecular methods, with a high degree of sensitivity and specificity, have been developed to recognize *Anaplasmosis* (Carelli *et al*., 2007). Polymerase chainreaction (PCR) test is considered thegoldstandard for revealing of persistently infected animal with *Anaplasmosis* infection (Torioni *et al.,* 2005). Parasitic gastroenteritis, cause a severe health risk and a control to the productivity of small ruminants due to the associated morbidity, death, expenditure of management and control measures (Nwosu *et al*., 2007).

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Fig. 1 Small Goat farm

Fig. 2 Blanched conjunctival mucous membrane

Fig. 3 Ticks present inside the ear

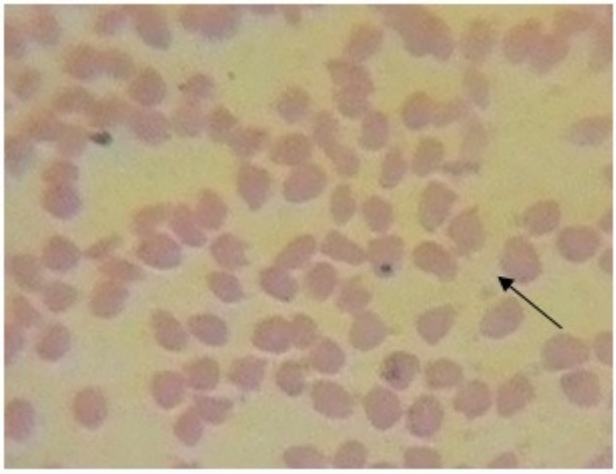

Fig. 4 *Anaplasma marginale* inside the RBC (100 x)