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Investigation of disease and its medical management in a goat farm

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Abstract

A field study was undertaken on 30 ailing goats from a goat farm referred to Veterinary Clinical Complex, Namakkal, to find out the incidence of disease through history and thorough clinical examinations. The clinical signs *viz.*, nasal discharge, abdominal distension and watery diarrhea were observed in most of the animals. The rectal temperature, pulse and respiratory rates of all animals were recorded. The blood smear was collected for microbiological analysis and nasal swabs and fecal sample were taken for RT-PCR analysis to detect suspected PPR Infection. The post mortem of dead kids was conducted. The blood smear examination does not revealed any kind of microorganisms of pathological significance. The RT-PCR results showed negative result for the PPR infection. The post mortem report revealed the intestinal lumens were packed with numerous tapeworms. Based on the results, it was concluded that the symptoms and clinical signs were due to debility caused by severe tapeworm infestation. The kaolin powder was administered till the recovery from enteritis in goats and fenbendazole and praziquantel dewormer suspension was given to all goats in the farm and other oral solutions comprising of antistress, liver tonic and multivitamin syrup were administered for a week till recovery.

Keywords: Goat, PPR disease, RT-PCR, Tapeworms infestation, Medical Management

Introduction

Health management is an important and integral part in goat farming. To improve the productivity of goats, general health management through regular vaccination and deworming, is essential. The parasite infections are commonly occurred in goats if dewormers are not administered, regularly. Sheep and goats routinely consume pasture mites while grazing and when a mite with a fully developed larva is eaten, the tapeworm larva will complete its development to the adult stage in the small ruminant small intestine (Elliott, 1984) [3]. It takes about six weeks for a mature tapeworm to form and start shedding segments containing eggs. Infection is far more common and apparent in lambs and kids than in adult sheep and goats (Taylor, *et al.*, 2007) [4]. Animals develop an immune response to tapeworms that may not completely prevent infection, but will limit the number and size of tapeworms. The enterotoxemia caused by *Clostridium* bacteria may occur more often in animals with heavy tapeworm infection (Thomas *et al.*, 1956) [5]. Possibly *Moniezia* tapeworm infestation in goats could lead to increased rates of bacterial disease. Hence the present study was conducted in a goat farm to find out the possible causes of infection for the sudden report of heavy morbidity and mortality in goats through molecular diagnosis and further medical management practices.

Materials and Methods

A study on thirty non-descript goats brought to Veterinary Clinical Complex, Namakkal hospital with the history of reduced feed intake, nasal discharge, abdominal distension and watery diarrhoea was conducted in a goat farm located at N. Kosavampatty of Namakkal district. The owner informed most of the goats in the farm were affected with the same symptoms. Hence a disease investigation was conducted in the farm and the team collected the past and present history and examined the animals and noted the disease symptoms.

The nasal and fecal swabs were collected and submitted for PCR analysis (Ashraf *et al.*, 2016) [1] at Centralized Clinical Laboratory, Department of Veterinary Microbiology, Veterinary College and Research Institute, Namakkal. The dead kid was taken for postmortem analysis at Department of Veterinary Pathology, Veterinary College and Research Institute, Namakkal. Heart blood swab and lung swab (Chhabra *et al.*, 2017) were collected for laboratory examination during post mortem. The oral solutions comprising of appetizers, vitamins and minerals were given to all sick animals for immediate management. Also kaolin powder was given to all sick animals. The glutaraldehyde disinfectant solution (2.4%) was sprayed over the entire area of flock.

Results and Discussion

The history reveals that the disease noted after heavy rain in their location for the past few days. Nasal discharge, watery diarrhea, reduced feed intake were noticed in sick animals. In all sick animals the conjunctival mucous membrane were pink and moist and rectal temperature, pulse and respiratory rates were in the range of $39.8^{\circ}\text{C} \pm 0.20$, $95/\text{minute} \pm 0.30$ and $36/\text{minute} \pm 0.20$, respectively. Mortality of one or two kids occurred daily in the farm since last two days. The nasal and fecal swab samples tested in RT-PCR (Figure 1) showed negative result for Peste des Petits Ruminants (PPR) disease.

The post mortem report revealed that the external examination did not show any abnormalities. The internal examination of subcutaneous tissue was pale in colour and the intestinal lumens were packed with numerous tapeworms. Intestinal contents were scanty and mixed with mucus. Small and large intestine and abomasum mucosa showed moderate congestion. In the rumen, reticulum and omasum no abnormality were detected. Bacterial antigens and PPR antigen could not be detected by culture and PCR. The blood smear examination does not revealed any kind of microorganisms of pathological significance.

Based on the symptoms, clinical signs, microbiology and pathological analysis the case was diagnosed as debility conditions caused by tapeworm infestation. The fenbendazole and praziquantel dewormer suspension was given to all goats in the farm. The kaolin powder was administered orally to all affected animals till recovery. Also the oral solutions comprising of appetizers, vitamins and minerals were prepared and given to the owner for regular administration for a week. Other oral solutions comprising of appetizers, vitamins and minerals were administered for a week till recovery and suitable manage mental practices were recommended.

The feeding regimen was advised to change based on the availability of fodders. Since, the episode of death is due to the amicable environment for the growth of parasites where goats were regularly allowed for grazing. The proper care for healthy and hygienic management of goats with proper space requirement was instructed to avoid further mortality and spread of infections. Alternative area has been advised for rearing the remaining stocks of 30 goats with antistress, livertonic and multivitamin syrup @ 2-4 mL/animal/day for five to seven days.

Conclusion

Based on the disease investigation findings, the case was diagnosed as debility caused by severe tapeworm infestation

in goats. Since, the nasal and fecal swab samples tested in RT-PCR rule out the possibility of PPR disease. Also, bacterial antigens could not be detected by culture and the blood smear examination does not detect any microorganisms. The medical manage mental practices like regular provision of dewormers along with antistress and liver tonics were prescribed to prevent morbidity and mortality in future.

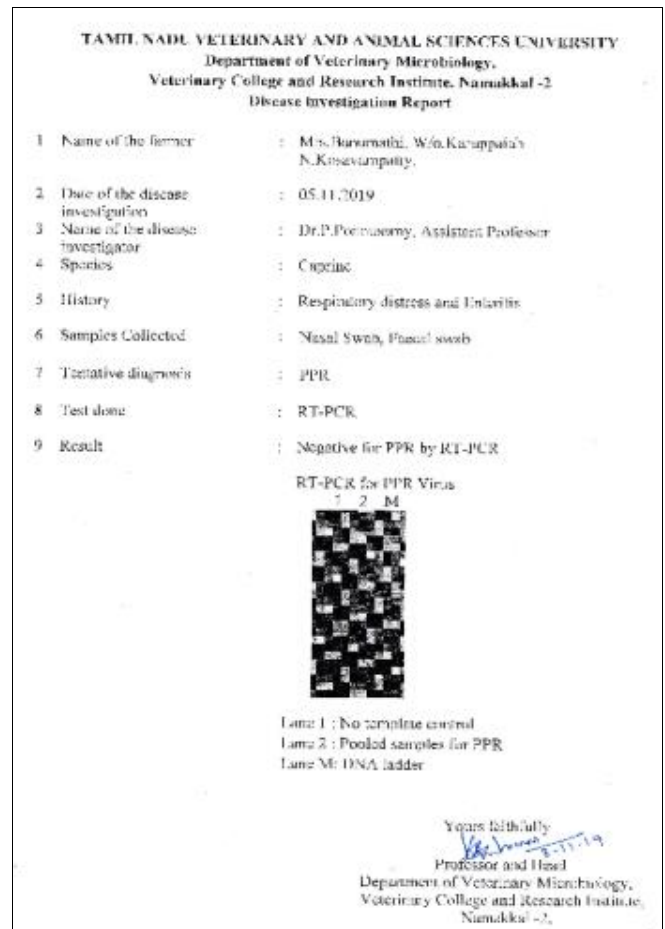


Fig 1: The results of RT-PCR for the detection of Peste des Petits Ruminants (PPR) disease in goats

Conflict of Interest

Not available

Financial Support

Not available

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