

PREVALENCE OF ANAPLASMOSIS IN GOATS IN RAMANATHAPURAM DISTRICT OF TAMIL NADU

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Abstract: A study was undertaken to assess the prevalence of anaplasmosis infection in goats of Ramanathapuram district of Tamil Nadu for the period from September 2015 to February 2016. Total of 130 blood smears were collected from goats flocks reared in and around Melakidaram village of Ramanathapuram district with the history of dullness, severe dehydration, tick infestation, and anorexia. Clinical examination revealed that all animals were anaemic with pale mucous membrane and watery blood and all animals were highly infested with *Rhipicephalus* species. Blood smears were subjected on Giemsa stained and examined under light microscope. Out of 130 smears, 34 were found to be positive for anaplasmosis with the per cent positivity of 26.15. Age wise prevalence indicated that 8 (19.04%), 21 (28.37%) and 5 (35.71%) goats were found to be positive under less than six months, 6 months to one year and above one year, respectively. All the suspected goats were responded to the treatment with tetracycline @ 20 mg/kg body weight and haematinics. The present study emphasis the stake holders should take appropriate measures to control the tick population and also institute the chemoprophylaxis before onset of monsoon season.

Keywords: Prevalence, Anaplasmosis, Giemsa staining.

INTRODUCTION

Anaplasmosis is considered as one of the top 10 economically important rickettsial diseases affecting ruminants in India (PDADMAS, 2005). Anaplasmosis caused by *Anaplasma* species which is an obligate intraerythrocytic rickettsial organism belonging to the family *Anaplasmataceae* of the order *Rickettsiales* (Dumler et al., 2001) and principally transmitted by *R. microplus* (Ghosh and Nagar, 2014). It is an infectious, non-contagious disease characterized by fever, anaemia, jaundice, lethargy and anorexia (Razmi et al., 2006) and substantial economic impact due to lower weight gains, productivity losses (Matsumoto et al., 2006), reduced fertility, abortions (Garcia-Perez et al., 2003) and case fatalities (Stuen et al., 2003). The hot and humid climate is very conducive for the development and survival

of potential vectors such as ticks and flies and is a constant source of infection to susceptible animals (Chowdhury *et al.*, 2006). Numerous reports were documented in cattle and sheep and scanty reports were documented in goats. Hence, the present study was undertaken to assess the prevalence of anaplasmosis in goats of Ramanathapuram district of Tamil Nadu.

MATERIALS AND METHODS

Goat flocks in and around Melakidaram village of Ramanthapuram district were identified with the history of dullness, severe dehydration, tick infestation, and anorexia for the period from September 2015 to February 2016. Blood smears were randomly collected from 130 goats with clinical signs of anaemic with pale mucous membrane and watery blood and animals were highly infested with *Rhipicephalus* species. Out of 130 smears, 42, 74 and 14 smears were collected from with the age group of less than six months, from 6 months to one year and above one year, respectively. The blood smears were fixed in methanol and subjected to Giemsa staining technique followed by examined under light microscope (Renneker *et al.*, 2013). On microscopical examination, smears having a small dot at the periphery of the red blood cells were taken as positive for anaplasmosis.

RESULTS AND DISCUSSIONS

Caprine anaplasmosis has been widely reported India (Smith and Sherman, 2009), but due to subclinical nature of the disease in goats, it is often considered to be of minor importance (Akerejola *et al.*, 1979). In this study, out of 130 smears examined, 34 were found positive for anaplasmosis with the per cent positivity of 26.15. Ramprabhu *et al.*, (1999) recorded the prevalence of anaplasmosis in southern districts of Tamil Nadu, but northern districts it was low. Age wise prevalence indicated that 8 (19.04%), 21 (28.37%) and 5 (35.71%) goats were found to be positive under less than six months, 6 months to one year and above one year, respectively. But, Arunkumar (2014) concluded that the overall incidence of infection was found to 9.2% and sheep above 2 years of age were highly susceptible for the infection. Higher prevalence in hoggets might be due to increased migratory activity for search of fodder, breeding and marketing. In this study, the incidence was higher during Northeast monsoon and winter seasons. This study concurred with Roger *et al.* (2008) who stated that the anaplasmosis is predominantly seen in animals in autumn and winter seasons. But, Velusamy *et al.* (2014) stated that there is no seasonal influence on anaplasmosis. Long- acting tetracycline preparations at the dose rate of 20 mg/Kg given once a week for two to four weeks has been effective and Imidocarb dipropionate may be useful in caprine anaplasmosis but information on dosage and treatment schedules is limited (Smith

and Sherman, 2009). All the suspected goats under this study were treatment with tetracycline @ 20 mg/kg body weight and haematinics and showed good response.

Conclusions

Small ruminants production play a major role in the rural agrarian economy of India. Goats contribute more than 52 per cent of household's total income towards nutrition and food security of the family of goat keepers. Based on this study, anaplasmosis is prevalent in goats and it is one of the major constrain for fast growing small ruminant industry. Hence, stake holders should take appropriate measures to control the tick population and also institute the chemoprophylactic measures before onset of monsoon season. This study through light on further research work on caprine anaplasmosis in this region for effective containment of the disease.

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