Short Communication

Haryana Vet. (April, 2019) 58 (S.I.), 102-103

PREVALENCE OF HAEMOPROTOZOAN INFECTIONS IN CROSSBRED COWS SUFFERING FROM REPRODUCTIVE DISORDERS

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Received : 26.02.2019; Accepted : 05.03.2019

SUMMARY

The present investigation was carried out on 518 cross bred cows suffering from reproductive disorders from different places of Satara, Pune, Sangali and Ahmednagar districts during the years between 2001 and 2014 and a total of 58 (11.19%) cows were positive for subclinical haemoprotozoan infection.The incidence of clinical theilerial cases (60.28 %) was highest followed by subclinical theilerial cases (19.05 %). The incidence of haemoprotozoan diseases with mixed infection were *Theileria* + *Anaplasma* (6.44 %), *Theileria* + *Babesia* (2.55 %) and *Anaplasma* (6.06 %). The *Babesia* and *Trypanosoma* cases reported in the TVCC were 5.40 and 0.18 % respectively. Subclinical theileriosis, babesiosis and theileriosis was confirmed in 53 (10.23%), 3 (0.57 %), and 2(0.38%) animals, respectively. Forty normal cyclical cows were also examined for haemoprotozoan infection by blood smear

Key word : *Babesia,* Haemoprotozoan infection, Reproductive disorders , *Theileria, Trypanosoma*

All the animal diseases have the potential to adversely affect the human health by reducing the quantity / quality of food and other livestock products. A large number of diseases have been incremented to affect the production and reproduction potential of the animal. Protozoan diseases particularly theileriosis imposes considerable restraints on animal reproduction and production. There is a trend towards increased intensification and commercialisation of livestock production particularly in peri-urban areas. The major problems that have direct impact on reproductive performance of dairy cattle are abortion, dystocia, retained placenta, metritis, prolapse (uterine and/or vagina), anoestrus and repeat breeder. This results in considerable economic loss to the dairy industry due to slower uterine involution, prolonged calving interval, increased cost of medication, drop in milk production, reduced calf crop and early depreciation of potentially used cows (Lobago *et al.,* 2006). *Theileria* is responsible for causing theileriosis resulting in death affected animals. It is a potential killer of livestock causing economic losses in term of mortality, morbidity, abortion, infertility reduced milk yield etc. (Kumar *et al.,* 2018).

The study was conducted on 558 cross-bred animals cows in the adjoining area of K.N.P. College of Veterinary Science, Shirwal in Satara, Pune, Sangali and Ahmednagar districts between the year 2001 to 2014, out of which 518 animals were suffering from different reproductive diseases/disorders (Group I) and screening was carried out on the basis of history, clinical examination and subsequently per rectal examinations. A total of 40 normal cycling cows were also selected and kept as control group (Group II). Blood samples were collected aseptically from jugular vein for haematological examination in both the groups. Blood smears were prepared from the tip of ear pinna for the examination of blood protozoan.

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The incidence of clinical theilerial cases 636 (60.28 %) during the year 2001-2014 were highest followed by subclinical theilerial cases 201 (19.05 %). The haemoprotozoan diseases included mixed infections of *Theileria* + *Anaplasma* 68 (6.44 %), *Theileria*+*Babesia* 27 (2.55 %) and *Anaplasma* 64 (6.06 %). The *Babesia* and *Trypanosoma* cases reported in the clinics of the college were 5.40 and 0.18 % respectively (Table 1).

Total 518 cross bred cows were gynaecologically examined, out of these, total 58 (11.19%) cows were positive for subclinical haemoprotozoan infection. Subclinical theileriosis was confirmed in 53 (10.23%) crossed cows. Total cows positive for Babesiosis and Anaplasmosis were 3 (0.57 %) and 2 (0.38%) respectively. However, no case of Trypanosomiasis was recorded amongst the cases positive for subclinical haemoprotozoan infection. Normal cyclic cows were examined and confirmed for haemoprotozoan infection by blood smear. All the 40 normal cyclic cows were selected for the present study were negative for haemoprotozoan infection. Similar observations reported by More (2008) Ugalmugale (2009), Kulkarni (2011), Bhangare (2014) and Kolhi *et al.* (2014).

Bhangare (2014) reported that total 69 (34.5%) cows were positive for subclinical haemoprotozoan infection on the basis of blood smear examination and clinical signs. Out of these, 69 subclinical haemoprotozoan infection positive cows, 66 (95.65%) were positive for *Theileria* spp. and 3 (4.34 %) were positive for babesiosis and none of the cows were positive for anaplasmosis and trypanosomiasis.

Bhure (2015) has also reported that the incidence in infertile buffaloes was 14 % in relation to haemoprotozoan infection. All the haemoprotozoan infected infertile buffaloes were positive for *Theileria*. Al-Mahmud (2015) reported the prevalence of theileriosis and babesiosis in cattle in Sirajganj district of Bangladesh and during one year

Table 1 :
Prevalence of subclinical haemoprotozoan infection in crossbred cows with reproductive disorders.

Sr. No.	Name of subclinical haemoprotozoan infection (n=518)	No. of subclinical haemoprotozoan infection positive cases	% subclinical haemoprotozoan infectionitive cases
1	*Theileria* spp.	53	10.23
2	*Babesia* spp.	3	0.57
3	*Anaplasma* spp.	2	0.38
4	*Trypanosoma* spp.	0	0
	Total	58	11.19

of study period, a total of 395 cattle were examined, 23 and 8 were found to be infected with *Theileria* spp. and *Babesia* spp., respectively. The overall prevalence of theileriosis and babesiosis in cattle were recorded as 5.82% and 2.27% respectively. The highest prevalence of theileriosis (7.25%) and babesiosis (3.10%) was reported in the older cattle (>3 years of age) and the higher prevalence was observed in female (6.66% and 2.59%, respectively) than male (4.0% and 1.60% respectively). All crossbred cattle showed higher prevalence than local cattle. Similar observations about the prevalence of haemoprotozoan infection in cattle from Nagpur by blood smear examination was recorded earlier by Shinde (2002) andthe incidence of *Theileria annulata* was 4.33%. A total of 155 cattle were examined and 34 (21.93%) were found to be positive for *Theileria annulata* infection, as reported by Khatun, (2013). Raghorte (2005) recorded 29.57% prevalence of *Theileria annulata* in cattle from Nagpur region. Shinde (2002) reported overall prevalence of 4.75% of *T. annulata* in bovines from Nagpur. Theileriosis in the cross-bred cows with reproductive disorders was highest amongst all haemoprotozoan infection in Western Maharashtra region.

ACKNOLEDGMENT

The authors are thankful to Associate Dean, KNP College of Veterinary Science Shirwal for providing necessary facilities.

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