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Original Article

Babesiosis in a Four Year Old Friesian–Sokoto Gudali Crossed Bull in Sokoto, Nigeria

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ABSTRACT

Bovine babesiosis is a hemo-protozoan disease diagnosed in a four-year old heavily tick infested Friesian-SokotoGudalli crossed bull. Clinical signs observed were pyrexia (rectal temperature of 40.8^{o}C), anaemia, anorexia, haemoglobinuria, dysuria, salivation and lacrimination. The bull was weak and could not graze. The thin blood smear was positive for both *Babesiabigemina* and *B. bovis*. The bull's condition improved after the administration of the following drugs; diminazineaceturate 7.0 mg/kg, antipyrine 8.6 mg / kg I.M. and application of acaricide, Flumethrin® on the body of the body of the animal. The management of the case was discussed in the paper.

Keywords: Babesiosis, Bull, Four years old, Friesian–SokotoGudali, Crossed.

INTRODUCTION

Babesiosis, or tick fever, is a febrile disease of domestic and wild animal hosts and sometimes human, caused by *Babesia* species; a tick transmitted protozoan parasites (Kuttler, 1988). It is characterized by extensive erythrocyticlysis leading to a haemoglobinuria and if untreated could be fatal. Bovine babesiosis may be caused by any of these two distinct species; the large (*B. bigemina*) and the small (*B. bovis*).

Clinical cases are described as babesiosis while subclinical infections and those recovered from clinical attack are termed babesiasis. Transplacental transmission occurs in *B. bovis*, *B. bigemina* and *B. equi*. (Uilenberg, 1995; Oliveira *et al.*, 2008). The disease is endemic throughout most of sub-Saharan Africa and neighbouring Islands. *B. bigemina* has been reported from central and south America, Europe, Africa, Australia and Asia, while *B. bovis* has been reported from Europe, Africa and Asia. *B. argentina* is reported from south east Asia, Australia, Mexico and Latin America (Guedes*et et al*., 2008).

Babesiosis is not only of economic importance as it causes substantial losses, directly due to mortality, ill-thrift, abortion, loss of milk/meat production and draft power and indirectly through costs associated with its control such as acaricide treatments, purchase of vaccines and therapeutics but also through its impact on international trade (Bock *et al*., 2004). Traditionally, control of babesiosis has relied almost exclusively on vector control by means of intensive application of

costly and toxic acaricides which have certain drawbacks as residues in meat, milk and environmental contamination (Meltzer and Norval, 1993) and thus, a health hazard.

CASE REPORT

On Sunday, the 17th of October, 2011, a four year old SokotoGudali-Friesian Holstein-Cross bull weighing approximately 800kg belonging to the University was presented to the Veterinary Teaching Hospital, UsmanuDanfodiyo University, Sokoto. The complaint was that the animal fell on ground thrice while grazing (once and twice in the morning and afternoon respectively) it was also reported that the animal was off feed and was very dull. The bull was introduced to 22 Gudali heifers having been purchased, to improve the stock of Gudali heifers meant for dairy production. Also kept in the farm were 12 Gudali cattle belonging to the Faculty of Veterinary Medicine, UsmanuDanfodiyo University, Sokoto, 50 Azwak fattening bulls and 120 Red Sokoto goats and 10 Yankasa sheep. The animals were allowed to graze on the rangeland after supplementary feed comprising of rice bran groundnut husk, wheat bran and cotton seed cake are provided after grazing.

The animals were said to have been deticked 6 weeks earlier before presentation. Our **differential diagnoses** werebabesiosis, helminthosis, coccidiosis, rinderpest, hemorrhagic septicaemia, anthrax,while the **Tentative diagnosis** was babesiosis (due to hemoglobinuria which was highly indicative of babesiosis). The **Plan of action** was to take sample for parastitological examination, to take blood sample for haematology, to send tick sample collected from the animal for identification and to commence treatment against babesiosis.

The drugs given were diminazeneaceturate 7.0mg/kg, antipyrin 8.6mg/kg (Samorenil) 7.08 was given I.M.once.

LABORATORY RESULT

Blood sample, thin blood smear revealed *Babesiabigemina* (+++)*[1], *Babesiabovis*(+)*, tick identified based on morphological description and key (Soulsby, 1982; Walker *et al*., 2003) was *Rhipicephalus* (*Boophilus*) *decolaratus*.

Physical Examination/ Clinical Findings

On physical examination, the animal was apparently dull and sluggish. There was excessive salivation and lacrimation. The animal was anorexic, attempt was made to force feed it but it showed inappentance. There was dysuria, with little voided reddish urine. Further examination revealed pale ocular mucus membrane and massive tick's infestation around the perineal, inguinal and axillar region. The vital parameters show rectal temperature of 40.8^{o}C, pulse rate of 96 beats/min, weak and irregular respiratory rate at 42cycles/minute. Problem list included: - anorexia, pyrexia, anaemia, hemoglobinuria, massive tick infestation, anal-haematoma, dysuria, salivation and lacrimaton. Hematology results from parasitology showed packed cell volume 15%.

Confirmatory diagnosis: - *Babesiosis*

Follow up; On Monday, the following week, the animal was deticked with an acaricide;Amitrax®. The animal was active, the hemoglobinuria had reduced considerably, the anal haematoma had regressed markedly and the animal started feeding gradually. The temperature had dropped to 39.2^{o}C, pulse rate was 80 beats/minute and respiratory rate was 25 cycles/min. On Wednesday 20th October, 2011 the animal was found to be feeding well, the anal haematoma had regressed completely, lacrimation and salivation had reduced also the animal was seen grazing with others.

DISCUSSION

This case on babesiosis appears to be among the very few and rare cases in Sokoto, Northwestern Nigeria, though the condition has been reported in some other parts of the country

[1] .* Degree of tick infestation

(Ajayi*et al*., 1982; Larmode, 1986).Babesiosis in cattle in this part of the country is rare but occasionally seen. The indigenous cattle may almost invariably experience milder clinical symptoms to primary infection; this especially observed if naive or immunocompromised cattle are moved to a paddock highly infested with *Rh.* (*Boophillus*) *decolaratus*infestation. Similarly, young calves exhibit a strong innate immunity compared to adult cattle (Goff *et al*., 2001). However, exotic breeds like the Friesian–Holstein or their crosses are more susceptible.

The two important species *B. bigemina* and *B. bovis* are widely spread in tropics and sub tropics. Incidentally, these are the two species identified in our Parasitology laboratory, Faculty of Veterinary Medicine, UsmanuDanfodiyo University, Sokoto. History revealed that tick infestation had been one of the herd health problems on the farm and that therapeutic measures have been put in place using Flumethrin®. *Rhipicephallus* (*Boophillus*) *decolaratus* was the tick found on the body of the bull just as it has been reported in other areas of the world (Friedhoff, 1988).

Clinically, high fever, parasitaemia anorexia, dark coloured urine, haemoglobinemia and haemoglobinuria have been reported earlier in similar cases (Ajayi*et al*., 1982, de Vos and Potgieter, 1994). Treatment depends on early and prompt administration of appropriate drugs. Protection depends on premonition and continued exposure to infected ticks, whereas premonition of babesiosis in enzootic areas depends on the elimination of the tick vector by regular dipping of cattle with acaricide. The survival of Friesians and their crosses has often presented a serious problem to most investors, especially the favorable climatic conditions prevalent in this area that support the growth and the development of tick and perhaps because of lack of enzootic stability.

CONCLUSION

Since Friesian and their crosses are highly susceptible to babesiosis and other haemoparasitic diseases, theyshould be routinely examined and dipped against ectoparasites. Prevention of Babesiosis in enzootic areas depends on elimination of the tick vector by regular dipping of cattle with acaricide

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