



ISSN: 0975-833X

RESEARCH ARTICLE

SEQUENTIAL TOXIC METRITIS, MASTITIS, BABESIOSIS AND THEILERIOSIS IN A POSTPARTUM JERSEY (BOS TAURUS) COW

¹Sarma, D. K., ^{*}¹Barua, P. M., ¹Ahmed, K., ²Saikia, G., ³Kakati, P and ⁴Barua, S.

¹Department of Animal Reproduction, Gynaecology and Obstetrics, LCVSc., Assam Agricultural University, North Lakhimpur, Assam

²Department of Microbiology, Assam Agricultural University, Guwahati-781 022 Assam

³Department of Parasitology, Assam Agricultural University, Guwahati-781 022 Assam

⁴Directorate of Veterinary and A.H., Khanapara, Guwahati-781 022, Assam

ARTICLE INFO

Article History:

Received 09th March, 2015

Received in revised form

02nd April, 2015

Accepted 18th May, 2015

Published online 30th June, 2015

Key words:

Babesiosis,
Jersey (*Bos Taurus*) Cow,
Mastitis,
Postpartum,
Theileriosis,
Toxic Metritis.

ABSTRACT

One 7-years-old, three days postpartum, 3rd lactating, approximately 375 kg body weight jersey (*Bos Taurus*) cow was diagnosed as toxic metritis with mastitis following rectal examination and isolation of *Arcanobacter pyogenes*, *Staphylococcus aureus* and *E. Coli* organisms both in uterine discharge and milk samples besides pyrexia (107°C), anorexia, reduced milk yield with hot inflamed udder, copious dark reddish, fetid uterine discharge. On 4th day after treatment cow was confirmed to be suffered from intra-erythrocytic babesiosis and theileriosis based on clinical investigation (pyrexia with pre-scapular, pre-femoral and subcutaneous lymphnodes swelling) and revealing of organisms in blood smear. The cow was treated with Ceftiofur (@2.2mg/kg b.wt. daily for 7 days IM), NS (@20ml/kg b.wt. daily till fever persisted), Megludyne (@2.2mg/kg b.wt. daily for 3 days IV) and Anistamine (@15ml daily for 3 days IM) injection against toxic metritis and mastitis along with intra-uterine and intra-mammary infusions of Lenovo AP (@60ml daily for 3 days) and Cefoperazone sodium (@10ml as single dose) respectively. Diminazine acetate (@7mg/ kg b.wt.IM) and Buparvaquone (@2.5mg/ kg b.wt. IM) was given to control the babesiosis and theileriosis. The cow was found recovered normally without recurrence till one month of treatment.

Copyright © 2015 Sarma et al. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Citation: Sarma, D.K., Barua, P.M., Ahmed, K., Saikia, G., Kakati, P and Barua, S., 2015. "Sequential toxic Metritis, Mastitis, Babesiosis and Theileriosis in a postpartum Jersey (*Bos Taurus*) Cow", *International Journal of Current Research*, 7, (6), 17153-17155.

INTRODUCTION

Successful uterine involution at puerperal stage, healthy udder and healthy haematological status have effect on the economic status of farming system in respect of timely postpartum conception and quality and quantity milk production. The partial retention of puerperal discharge (lochia with blood and tissue debris from the extra-embryonic membrane attachments) becomes a suitable environment for growth of the uterine microorganisms (both +ve and -ve) to cause various uterine disorders (toxic metritis/ endometritis/ pyometra). Similarly leakage of milk through teat cistern makes easy for ascending infection from the contaminated floor space (due to puerperal uterine discharge) to cause mastitis in postpartum dairy cows

***Corresponding author: Barua, P.M.,**
Department of Animal Reproduction, Gynaecology and Obstetrics,
LCVSc., Assam Agricultural University, North Lakhimpur, Assam

(Noakes, 2009; Roberts, 2004; www.vetnext.com/search.php?s=onderwerp&id=73290380428145). The concurrent infection of postpartum metritic cow with blood parasites like babesia and theileria may further complicate the diagnosis, treatment and recovery of the cow. Hence, appropriate therapeutic management in time can be considered as a major factor of recovery of the affected animal and to reduce economic loss of the farmer in respect of days open, repeat services with increased cost of semen (www.fwi.co.uk Training Academy). Revealing from the available literature about postpartum uterine disorders, mastitis and intra-erythrocytic organisms (Gharbi et al., 2011; www.vetnext.com/search.php?s=onderwerp&id=73290380428145; www.fwi.co.uk Training Academy) occurrence of sequential toxic metritis, mastitis, babesiosis and theileriosis is found a rare incidence in postpartum jersey crossbred (*Bos*

Taurus) cow. Therefore the present study is presented here under.

History and observation

A 7-year-old, 3rd lactating, approximately 375 kg body weight, jersey crossbred (*Bos Taurus*) cow was sick for last three days postpartum with the history of off fed, enlarged udder with reduced milk secretion. The cow was on lateral recumbency. On clinical examination, temperature was recorded 107°C F with brick red-coloured congested conjunctiva. The heart rate was very fast (183bpm). The right hind quarter of udder was found red-hot and inflamed. Milk yield from other quarters was found very less. On rectal examination, both uterine horns were found significantly enlarged. During palpation of female genitalia about one (1) litre of dark reddish, fetid uterine discharge was found draining out through the vulva. On bacteriological study, *Arcanobacter pyogenes*, *Staphylococcus aureus* and *E. Coli* could be isolated from both vaginal discharge and milk samples. Therefore, the cow was confirmed to be suffered from toxic metritis, and mastitis and accordingly necessary treatment was provided. The cow was found recovering gradually and on 3rd day of treatment the temperature was returned to normal (102°F) with improved appetite. Inflamed udder also subsided. She could able to stand with little external support.

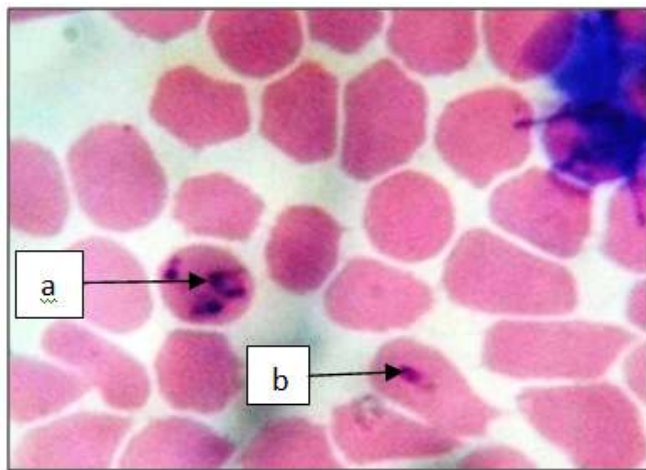


Fig.1. Intra-erythrocytic babesia (a) and theileria (b) organisms in single blood smear of a postpartum jersey crossbred (*Bos-taurus*) cow

But, on 4th day the cow was suddenly became anorectic. On sober clinical investigation revealed swelling of pre-scapular, pre-femoral and subcutaneous lymphnodes. Temperature increased (104°F) with anaemic conjunctiva. Examination of blood smear revealed intra-erythrocytic babesia and theileria organisms (Fig. 1.) which provided ample support for diagnosis finally that the cow was sequentially suffered from postpartum toxic metritis, mastitis, babesiosis and theileriosis. After 7 days following necessary treatments against babesia and theileria infestation the cow was found to be recovered gradually with normal temperature and appetite.

RESULTS AND DISCUSSION

At the very outset the cow was treated with a course of antibiotic (Ceftiofur @2.2mg/kg b.wt. daily for 7 days IM),

fluid therapy (NS @20ml/kg b.wt. daily till fever persisted), Flunixin meglumine (Megludyne @2.2mg/kg b.wt. daily for 3 days IV) and antihistaminic (Anistamine @15ml daily for 3 days IM) injection. *Arcanobacter pyogenes*, presently known as *Trueperella pyogenes* (Ribeiro, et al., 2015) and *Escherichia coli* in association with other gram +ve/and -ve bacteria cause metritis and endometritis with clinical findings of enlarged uterine organ, purulent discharge, rise of temperature, loss of appetite and decreased milk yield. Therefore, prudent use of antibiotics or alternative therapy of antibiotic is considered beneficial for its treatment (<http://dx.doi.org/10.3168/jds.2014-8462>). Toxic metritis is classified as grade 3 metritis with signs of inappetance, cold extremities, depression and/ or collapse (en.wikipedia.org/wiki/Metritis). Cows with high temperatures have a higher requirement for fluids (<http://dx.doi.org/10.3168/jds.2014-8462>). Flunixin meglumine acts as analgesic, anti-inflammatory, antipyretic and anti-endotoxic (Anderson, 1986). A course of combination of Levofloxacin, Ornidazole and alfa tocopherol (Lenovo AP @60ml daily for 3 days) was infused intra uterine. Cefoperazone sodium was infused through intra mammary @ 10ml as single dose. Different stressors, particularly parturient stress compounded with metritis might have predisposed the cow for flaring up the underneath infections of Babesia and Theileria (Holmes, et al., 2000, Kamau, et al., 2011). Therefore, the cow, perhaps showed the signs of relapsing the illness with fever in spite of continuous ongoing antibiotic treatment. However, a single injection of Diminazine acetate (@7mg/ kg b.wt. IM) and Buparvaquone (@2.5mg/ kg b.wt. IM) was found responded and control intra-erythrocytic babesiosis and theileriosis. Towards the completion of course of Ceftiofur along with all other treatments the cow was found recovering its normal health without reoccurrence till one month.

REFERENCES

- Anderson, K.L., Smith, A.R., Shanks, R.D., Davis, L.E. and Gustafsson, B.K. 1986. Efficacy of flunixin meglumine for the treatment of endotoxin-induced bovine mastitis. (PMID: 3524329) *American J. Vet. Res.*, 47(6):1366-1372. en.wikipedia.org/wiki/Metritis [Access on 15.05.2015].
- Gharbi, M., Touay, A., Khayeche, M., Laarif, J., Jedidi, M., Sassi, L. and Darghouth, M.A. 2011. Ranking control options for tropical theileriosis in at-risk dairy cattle in Tunisia, using benefit-cost analysis. *Rev Sci Tech.* Dec. 30(3):763-78.
- Holmes, P. H., Katunguka, R.E., Benninson, J.J., Jaria, L.T., Wassink, G.J. and Parkins, J. J. 2000. Impact of nutrition on pathophysiology of bovine trypanosomiasis. *Parasitol.*, 120: 73-85.
- <http://dx.doi.org/10.3168/jds.2014-8462>. Haimerl, P. and Heuwieser, W. *Invited review: Antibiotic treatment of metritis in dairy cows: A systematic approach* DOI [Access on 15.05.2015].
- Kamau, J., Vos, A. J., Playford, M., Salim, B., Kinyanjui, P. and Sugimoto, C. 2011. Emergence of new types of *Theileria orientalis* in Australian cattle and possible cause of theileriosis outbreaks. *Parasite and Vector.* 4:22.

- Noakes, E.D., Parkinson, T.J. and England, G.C.W. 2009. Veterinary Reproduction & Obstetrics. 9th edition SAUNDERS ELSEVIER. Pp. 319-325.
- Ribeiro, M.G., Riseti, R.M., Bolaños, C.A., Caffaro, K.A. de, Morais, A.C., Lara G.H., Zamprogna, T.O., Paes, A.C., Listoni, F.J. and Franco, M.M. 2015. *Trueperella pyogenes* multispecies infections in domestic animals: a retrospective study of 144 cases (2002 to 2012). Vet Q. Mar 20:1-6.
- Roberts, S.J. 2004. Veterinary Obstetrics and Genital Disease (Theriogenology) 2nd Edn. CBS Publishers and Distributors, India. Pp. 322-336; 477-483.
- www.fwi.co.uk > Training Academy [Access on 15.05.2015].
- www.vetnext.com/search.php?s=onderwerp&id=73290380428145 [Access on 15.05.2015].
