Haematological Changes in Cattle associated with arthropods Infestation

P.A. Raut, V.G.Sonkhusale, L.A.Khan, M.K. Nakade, N.S.Pagrut and A.M.Bodkhe

Nagpur Veterinary College, Nagpur-06

Abstract

A total of 847 animals inspected from Jan.2007 to Dec.2007 for the assessment of prevalence of ticks infestation of cattles. Out of 847 animals examined, 612 were positive (72.26%) for arthropods infestation at Nagpur and around villages. Among arthropods infestation, ticks (52.78%), lice (19.93%) , flies (9.48%) and mixed (17.81%) were observed. Out of these observations ticks sp. were *Rhipicephalus Sp. (60.99%), Hyolomma sp. (20.74%) and Boophilus sp.* (18.27%), *Lice sp* were *Linognathus* sp. (44.26%) and *Haematopinus sp. (*55.74%) and flies sp. *Hippobosca sp.* (67.24%) and *Stomoxys sp.*(32.76%) were identified.Haematological findings shows decrease in Hb,PCV,TEC and TLC where as Lymphocyte and Eosinophyl count was higher than normal .

Keywords: Haematology, Cattle, Arthropod, Infestation, Prevalence, Village, Tick, Lice, Flea

Introduction

About 80% cattle population of the world is affected by various arthropods, causing enormous economic losses. These losses are associated to bite causing mechanical injury, anaemia and leading to loss of condition. Arthropods not only keep animals restless but also transmit blood protozoa causing diseases like Trypanosomiasis, Babesiasis, Theileriasis and Anaplasmosis. The present study reported haematological changes in cattles heavily infested with arthropods after and before treatment with acaricide drug.

Materials and methods

Ectoparasites such as ticks, lice and flies were collected by hand pickiing / net sweeping in specimen bottle containing 70% alcohol and 10% Koh and transpoted to laboratory for identification The identification of arthropods was done as per the guideline given by Soulsby(1982).

Haematology of cattles heavily infected with arthropods were carried out with the method of Schalm *et al.* (1975). Blood samples were collected from jugular vein with 18 guage sterilized needle in sterilized vials containing 10% EDTA as an anticoagulant, vials were sealed and labeled properly.

Results and discussion

A total of 847 animals were inspected from Jan.2007 to Dec.2007 for the assessment of prevalence of ticks infestation of cattles. Out of 847 animals examined 612 were positive (72.26%) for arthropods infestation at Nagpur and around villages. Among arthropods infestation, ticks (52.78%), lice (19.93%) , flies (9.48%) and mixed (17.81%) were observed. Out of these observations ticks sp. were *Rhipicephalus Sp. (60.99%), Hyolomma sp. (20.74%) and Boophilus sp.(18.27%), Lice sp.* were *Linognathus* sp. (44.26%) and *Haematopinus sp. (*55.74%) and flies sp. were *Hippobosca sp.* (67.24%) and *Stomoxys sp.*(32.76%) identified.

Haematology of animals heavily infested with arthropods was carried out before and after acaricide treatment.

The haematological findings revealed signifi-cant reduction in haemoglobin, packed cell volume, total erythrocyte count. *Biswal et al.,*(1988) and Springell (1971)reported reduction in haematocrit and haematological values as compared to those calves free from ticks infestation. An increase in number of eosinophils and lymphocytes in ticks infested cattle was also reported by Gebelhoff,(1974),*William et al.,* (1977) and decrease in neutrophils and monocytes in ticks infested cattle was also reported by Maske,(1993). Lower Hb,TEC and marked leucocytosis is due to anaemia because of blood sucking ability of parasites and haemorrhage (Soulsby,1982).

References

1. Biswal,B.,Misra,S.C. and P.C.Bisoi(1988): Jour.Vet.Parasitol.,2(1):9-13.
2. Gebelhoff, E., (1974):Effect of tick infestation

Table. - 1. Haematological values of arthropods infested cattle of Nagpur and around villages during the year 2007.

Sr.No.	Components	Healthy animal (Mean ± S.E.)	Infected animal (Mean ± S.E.)
1.	Hb(g/100ml)	11.9 ± 0.13	9.48 ± 0.733
2.	PCV (%)	35.4 ± 0.22	31.60 ± 0.95
3.	TEC(10^6/cumm)	7.8 ± 0.7	5.64 ± 0.44
4.	TLC(10^3/cumm)	9.1 ± 0.16	7.27 ± 0.32
5.	DLC (%)		
	Lymphocytes	64 ± 0.87	74.76 ± 3.2
	Neutrophils	27 ± 0.87	15.17 ± 1.72
	Eosinophils	7 ± 0.7	9.27 ± 1.17
	Monocytes	4 ± 0.42	2.17 ± 0.29

with *B.decoleratus* and *H.a.excavatum* on blood picture of calf. Dissertation,Frele Univ. Berlin,PP.55.
3. Maske,D.K.(1993): Jour.vet.Parasitol.,7(2): 130-131.
4. Schalm, O.W.; Jain, N.C. and Carroll, E.T., (1975):Veterinavy Haematology, 3rd Ed. Lea and Febiger, Philadelphia, PP.42-52.
5. Soulsby, E.J.L.,(1982): Helminths, Arthropodes and Protozoa of Domesticated Animals,7th ed the ELBS and Baillieve, Tindal cass LTD, London, pp.766.
6. Springell, P.H.(1971): Austral.J.Biol. Sci.24: 381-389.
7. William,R.E., Hair,J.A.and Bhekner, R.G., (1977): J.Econ.Ent.,70:229-233.

* * * * * * * *

Inhalation anthrax reported in UK

The UK Health Protection Agency has been responding to an isolated case of inhalation anthrax. The patient concerned is being treated in intensive care at a London hospital. This patient makes and then plays animal skin drums for a living. It is through making these drums that exposure to and inhalation of anthrax spores on an imported animal hide has taken place. The risk to others who play these drums is very low. It is the process of removing the animal hairs during the making of drums that can put people at risk. Anthrax caused by the spores of organisms that live in the environment usually causes cutaneous anthrax in human beings. Inhalation anthrax is very rare and is not passed from person to person. A case of inhalation anthrax occurred in 2006 in America in a man who made drums from dried (but otherwise untreated) animal hides brought in from West Africa. A case in August 2006 also occurred in Scotland in a man who made drums from imported animal hides. Experiences show that imported animal hides from countries where anthrax is endemic in animals (for example, in Africa and Asia) pose a higher risk for exposure. **Source: <http://www.promedmail.org>**

More anthrax infected patients are being identified in south of Kyrgyzstan

New patients with anthrax are being registered in Kyrgyzstan. 45 patients have been identified with anthrax in the south of the country and 47 in all Kyrgyzstan this year (2008). One patient has died and dozens are under medical supervision. The alarming epizootic situation in Kyrgyzstan, especially in the southern regions of country, was the reason to call a multi-agency meeting in Bishkek. Leading specialists of several agencies stated that the current problems are the result of neglect by officials of their duties in many agencies, lack of security measures, and indifference of people towards their health. There has been much criticism of the fact that after the appearance of suspected anthrax, measures have been taken only after 15 days. Burial of dead animals is not perfect and safety measures are not being implemented. In addition, soil niduses of anthrax is a serious problem.

Source: <http://www.promedmail.org>