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RESEARCH NOTE

Gall sickness in a cross bred cow

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Abstract : Anaplasmosis or Gall sickness is a vector-borne, infectious blood disease in cattle caused by the rickesttsial parasites Anaplasma marginale and Anaplasma centrale. The present case deals with a case of 5 year old female cross bred cow with clinical signs of dyspnoea, nasal discharge and fever. On microscopical examination of peripheral blood smear with giemsa stain revealed *Anaplasma marginale* and confirmed as Anaplasmosis and treated with intravenous oxytetracycline.

Key words : Gall sickness, Anemia, Oxytetracycline

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Gall sickness is an infectious, non-contagious, hemolytic disease of cattle caused by *Anaplasma marginale*. Oraganism invades erythrocytes causing an extra vascular hemolytic condition. The severity of the condition depends upon an animal's susceptibility and ability to respond to a hemolytic crisis. Factors modifying susceptibility are undetermined in cattle native to endemic areas. In general, severe clinical infections do not occur until an animal is about eighteen months or older. Young animals become infected but rarely show clinical signs. It can be transmitted from infected animals to healthy animals by insects or by surgical instruments. Their recovery usually results in a carrier state. Talabani (2015) revealed that this disease is characterized by persistent fever, anorexia, lacrimation, nasal discharge, dyspnoea, emaciation, anemia and jaundice.

Case history and observation :

A 5 year old female cross bred cow was presented to the large animal outpatient unit of teaching veterinary clinical complex, Orathanadu with a history of anorexia, dyspnoea and fever. Clinical examination revealed depression, decreased milk production, inappetence, labored respiration, lymphnode enlargement and increased temperature (102.2°F). Fecal sample examination was negative. Light microscopic examination of Giemsa stained blood smear demonstrate the *Anaplasma* organisms in the erythrocytes. Hematological analysis revealed total Red Blood Cell (RBC) count 4.6 million/Cumm, Hemoglobin (Hb) 6.7 g/dl, and Hematocrit 22.43 per cent with leukocytosis. Blood electrolytes showed potassium 4.10 mmol/L, chloride 92.9mmol/L, sodium 136.0mmol/L, ionized calcium 1.2 mmol/L and blood pH 7.25. Serum biochemical assays were carried out for glucose, total protein, albumin, urea, creatinine, total cholesterol, triglycerides, ALT 48 IU and AST 96.8±0.97. In which significant increase in serum AST and ALT in infected cattle when compared with healthy cattle was observed Maxine (2007). In the present study, Based on the microscopic examination (Fig.1) and haematological findings this case was diagnosed as anaplasmosis.

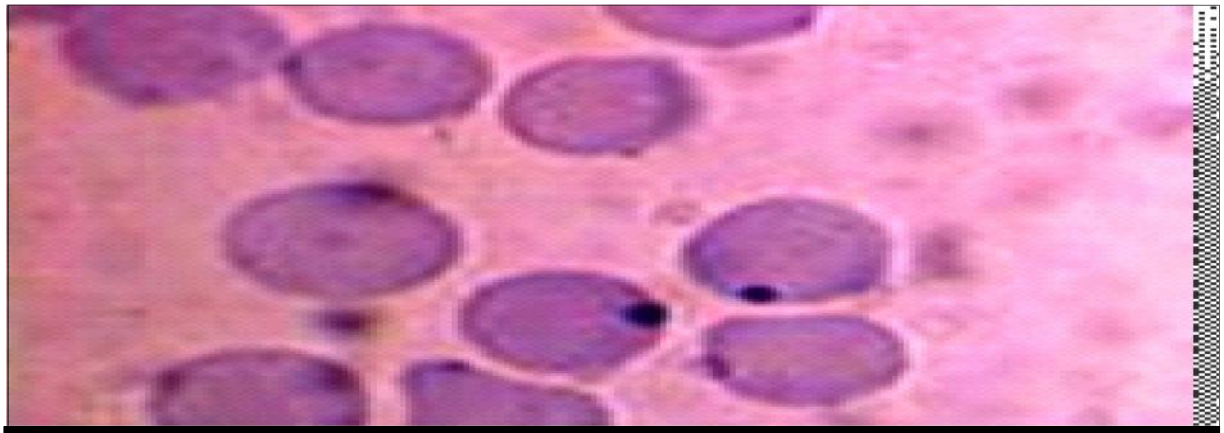

Fig. 1 : Bovine blood smear showing *Anapalsma marginale* in microscopic examination (100x)

Treatment and discussion :

Treatment was carried out with oxytetracycline @10 mg/kg intravenously (Katherine *et al.*, 2003). and B complex injection (Tribivet), Ferritas 10ml administered intra muscularly. Same dose of oxytetracycline was repeated 5 days after the initial treatment to completely eliminate the parasites. Animal started improving and on fifth day and started taking normal feed.

Complete blood count showed severe anemia, which is indicated by decreased RBC, PCV and Hb. Presence of leukocytosis in this case indicating stimulation of lymphoid organs due to presence of organisms as stated by Sharma *et al*. (2013). Increase in liver enzyme activity may be attributed to hepatic cell degeneration and glomerular dysfunction. These results were in agreement with other studies reported by Turgut (2000).

The treatment of gallsickness in cattle includes suppression or elimination of the parasite and prevention of secondary complications like hypoxia. In many countries the tetracyclines are the only effective chemotherapeutic agents approved for the treatment of anaplasmosis. Of these tetracycline and oxytetracycline are the most commonly used drugs for the treatment of acute and chronic carrier infections as suggested by Katherine *et al*. (2003).

A study was shown that the rapid destruction of erythrocytes and the concomitant rapid release of their contents could lead to imbalance in pH. This may be the reason in this case, slightly reduced blood pH as reported by Sharma *et al*. (2013). The clinical signs of anaplasmosis should be differentiated from infectious and non-infectious conditions presenting with fever, anaemia, icterus, depression, inappetence and a reduction in milk yield.

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