

## Effect of buparvaquone in the control of jaundice in Theileriosis

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**Background and Aims:** Buparvaquone is a novel compound of second generation hydroxynaphtoquinone indicated as Butalex for treatment and prevention of Theileriosis. Formulated with methyl groups at 4-position in cyclohexyl rings, offers a tertiary feature that increases drug half-life by lowering the clearance. Mechanism of drug efficacy on *Theileria schizont* is not well established, but populations of infected lymphoid cells dramatically decrease. Although occurrence of anemia during and following jaundice is not directly originated from RBC hemolysis, development of the disease and involving liver enzymes are of great value. Present study evaluates the new drug efficacy on jaundice through liver enzymes activity and bilirubin metabolism.

**Methods:** The study was performed on 30 cattle with diagnosis of Theileriosis made on peripheral direct smear and lymph node aspiration investigation. Serum sample obtained from jugular vein before and after treatment with Buparvaquone and enzyme activity of Alanin Transaminase (ALT), Aspartate Transaminase (AST), Lactate Dehydrogenase (LDH), Gamma Glutamyl Transferase (GGT), total and direct bilirubin were measured.

**Results:** Findings reveal that measured enzyme activity were upper reference intervals in both before and post treatment group, ( $p < 0.05$ ) however, post treatment group showed more variations in compare to pre-treatment group. Besides, bilirubin value is within normal range only in post treatment group. ALT enzyme showed no significance change in both groups.

**Conclusions:** These changes originated from cytotoxic destruction of Antibody-mediated RBC in liver and spleen follows by extravascular hemolysis during the disease which makes an increase in total bilirubin. Moreover, low capacity of liver involved hepatocytes in conjugating bilirubin cause an increase in liver secretory enzymes except ALT which is not sensitive in ruminant. Conclusively, the used drug destroys the origin of infection, scizonts in lymph nodes more potentially than erythrocytes which hemolysis makes more jaundice in tissues.

**Keywords:** Buparvaquone; Theileriosis; Jaundice