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## Whole blood transfusion in a pregnant cow with Anaplasmosis: A case report

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### Abstract

Blood transfusion is a life-saving therapy in cases of life-threatening anemia in cattle relatively simple to perform. Procedure takes 60 to 80 minutes. Low cost possible and economically justifiable. Cattle presented with lateral recumbency, pale mucous membrane, low PCV and Hb. Blood picture revealed *Anaplasma marginale*. It was treated with oxy-tetracycline and managed with blood transfusion.

**Keywords:** Blood transfusion, anemia, recumbency, *Anaplasma marginale*, oxy-tetracycline

### Introduction

In bovine, anemia occurs due to blood protozoan infection, ecto- and endo parasites and nutritional deficiency. Sometimes it may occur as a result of severe liver dysfunction and bone marrow depression. It is sometimes necessary for the practitioner to transfuse the ruminant with whole blood or plasma (Saritha *et al.*, 2016) [1]. Bovine anemia occurs in three forms *viz*, hemorrhagic anaemia, haemolytic anaemia and anaemia due to reduced or defective erythropoiesis. Haemolytic anaemia is encountered in the haemoprotozoan infections such as Theileriosis, Babesiosis and Rickettsial infections such as Anaplasmosis. (Jagpreet *et al.*, 2014) [2]. Cattle have the most complex blood group system of domestic animals with 11 groups but most individual do not have antibodies against other blood group antigens unless sensitized by previous transfusion even when cross matching is carried out. Transfused erythrocytes only survive for 2-4 days compared to a normal cattle life span of 120 days. Nevertheless, this window is usually enough to allow endogenous hematopoiesis to fill the deficit.

### History and Clinical findings

Animal presented with a history of inappetence for past four days, lateral recumbency, Temperature 1040 F, dyspnoea (shallow breathing), Blanched and mild icteric vaginal mucous membrane, based on history and clinical signs suspected for anaplasmosis for confirmation blood sample were taken for haematology and serum biochemistry revealed PCV - 14%, Hb - 5 g/dL, Total Erythrocyte Count TEC - 2.59 X 106/ $\mu$ l and Total bilirubin 0.5mg/dL. Blood picture was showing *Anaplasma marginale*.

### Results and Discussion

Based on laboratory and clinical findings the cow was diagnosed with severe anemia due to *Anaplasma marginale* (Haemoprotozoan organism) where immediate blood transfusion may help in managing the condition. The animal was examined for blood transfusion. Owner arranged another animal for a donor from his same farm after it was examined for major matching and agglutination test. The blood was collected from the donor by use of a CPDA blood bag. Treated with Oxytetracycline 20mg/kg (long acting) i/m BW, Triamcinolone 6ml i/m, Tribivet 20 ml i/m, meloxicam 15ml i/m except OTC and Triamcinolone other drugs were continued for four days along with oral feritas (iron sorbitol) bolus after 17 hours of blood transfusion mucous membrane were changed from pale to pink and after a week the animal was aborted. After two weeks anemic signs disappeared and the animal recovered uneventfully. Total blood volume in cattle represents 7-8% of body weight. No more than 25% of total blood volume should be collected from a donor at one time. In practice, 10-15% of an adult's blood volume (5-6 litres) is usually sufficient for most indications. Vital part of veterinary emergency and critical care medicine is transfusion medicine in severe anemia.

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In severe anemia where there is extreme depletion of oxygen carrying capacity of the blood occurs and life is threatened, warrant need of blood transfusion is indicated. Most of the animals die due to severe anemia (Nuri Mamak and Ismail Aytakin, 2012) <sup>[3]</sup>.

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