CLINICAL MANAGEMENT OF PREGNANCY TOXAEMIA IN A GOAT- A CASE REPORT

S. DHARA^{1*}, M. SHARMA¹, A. K. SINGH²,
V. SHARMA¹ AND S. THAKUR³

¹Department of Veterinary Gynaecology and Obstetrics, College of Veterinary and Animal Sciences, G.B.P.U.A. & T, Pantnagar, U.S. Nagar-263 145, Uttarakhand, India

²Dept. of Veterinary Medicine, College of Veterinary and Animal Sciences, G.B.P.U.A. & T, Pantnagar, U.S. Nagar-263 145, Uttarakhand, India

³Dept. of Veterinary Physiology and Biochemistry, College of Veterinary and Animal Sciences, G.B.P.U.A. & T, Pantnagar, U.S. Nagar-263 145, Uttarakhand, India

A three years old pregnant non-descriptive local doe was presented at TVCC, Pantnagar with a complaint of inappetence for last two days associated with circling movement and lateral deviation of neck. Weakness in both hind limbs and difficulty in standing was evident during physical examination. Clinical examination revealed congested mucus membrane and hypothermia (99.8°F). X-ray and Ultrasonography revealed that the doe was carrying two viable fetuses that were about 145 days old. Urine analysis revealed presence of ketone bodies. Haemato-biochemical studies showed hypoglycaemia (28 mg/dL). The doe was immediately treated for pregnancy toxaemia with 500 mL 20% dextrose BID and 60 mL Mifex[®] OD intravenously for three days. In addition, glycerine @ 50 mL BID orally and 2 mL injection B-complex BID intramuscularly for three days were also given. After three days of successful treatment, parturition was induced with 250 µg cloprotenol sodium intramuscularly and 48 mg valethamide bromide intramuscularly. The doe delivered two live fetuses within 24 hours of induction. This clinical case reports the clinical management of pregnancy toxaemia in a goat, which is a common problem in small holder farms in India.

Key words: Clinical management, Doe, Hypoglycaemia, Ketone bodies, Pregnancy toxaemia

Pregnancy toxaemia also known as ‘twin lambs’ disease, is a metabolic disorder of small ruminants caused by abnormal metabolism of carbohydrates (Brozos *et al.*, 2011). It commonly occurs in does during late gestation as well as early lactation (Affan *et al.*, 2018). The does carries twins or triplets are highly susceptible to such occurrence (Ermilio and Smith, 2011; Mohan *et al.*, 2018). The main cause of pregnancy toxaemia in goat is a disturbance in carbohydrate metabolism due to

the high demands for glucose by the multiple developing fetuses in the last trimester along with low level of nutrition (Jesse *et al.*, 2016) produces negative energy balance (Amirul *et al.*, 2016). Due to this hypoglycaemic condition body produces glucose from other non-carbohydrate substances such as fat. It causes increased free fatty acid (FFA) and ketone bodies in plasma as well as in urine due to lipolysis (Chaiyabutr *et al.*, 1980; Abba *et al.*, 2015). In severe condition, morbidity and

*Corresponding Author

mortality reach up to 20% and 80%, respectively (Ismail *et al.*, 2008). Early clinical signs of pregnancy toxemia in doe include reduced appetite, listlessness, aimless walking, muscle twitching, fine muscle tremor, and grinding of teeth. In advance cases the animal goes to lateral recumbency, coma or even up to death of the animal. The main objective of treatment of pregnancy toxemia is to increase the formation of glucose for utilization at tissue level and decrease the level of ketone bodies (Jesse *et al.*, 2016).

A three years old pluriparous non descriptive local doe (4.8 months pregnant) (Fig. 1), weighing 35 kg was presented to Teaching Veterinary Clinical Complex, Pantnagar, Uttarakhand with the history of circling movement, deviation of head, weakness in hind limbs and loss of appetite for last two days. Clinical examination revealed hypothermia (99.8°F), congested mucous membrane and tachycardia. Physical examination revealed animal was dull, depressed and slightly dehydrated. Both the X-ray (Fig. 2) as well as USG (Fig. 3) reports confirmed the presence of two mature viable foetuses (approx. 145 days). Urine sample was positive for ketone bodies. Low blood glucose level (28 mg/dL) was detected using GOD-POD kit (Erba Glucose kit).

Based on history, clinical examination and laboratory examination the doe (Fig. 1) was diagnosed with pregnancy toxemia.

Treatment was started with 500 mL DNS (20%) BID intravenously and 100 mL NS BID intravenously, for three days to compensate glucose level and dehydration. Glycerol (50 mL, BID) orally supplemented for three days as glucose precursor. In addition, 60 mL Mifex® OD intravenously for three days as calcium supplement and 2 mL vitamin B-complex BID intramuscularly for three days as supportive therapy were given. After three days of successful treatment (Fig. 4), medicinal induction of parturition was recommended. Induction was

performed by administering 250 µg cloprostenol sodium intramuscularly and 48 mg valethamide bromide intramuscularly. The doe delivered two live foetuses within 24 hours of induction.

Pregnancy toxemia is a common metabolic disorder of small ruminants caused by abnormal metabolism of carbohydrate around last trimester as well as early lactation stages (Brozos *et al.*, 2011). Specially at last trimester if the doe carries multiple foetuses the chances of pregnancy toxemia become more due to increased demand of energy for growing foetuses (Bulgin, 2005). Anorexia, depression and separation from the herd are the first clinical signs of pregnancy toxemia in a pregnant doe. As the disease progresses, animal will start showing neurological signs like depression, tremors, stargazing, ataxia, circling, teeth grinding and blindness due to encephalopathy that result from hypoglycaemia (Jesse *et al.*, 2016).

In present case the animal showed symptoms of circling movement, recumbency, inappetence, hypothermia and tachycardia. X-ray as well as USG revealed presence of two mature viable foetuses. Urine and blood examination confirmed ketosis and hypoglycaemia. Based on above mention findings the present case was confirmed as pregnancy toxemia. To combat the hypoglycaemic condition we treated the animal primarily with 20% dextrose as well as oral supplementation of glycerol as a source of glucose. Calcium was given to prevent the muscular atrophy. Other supportive drug like vitamin B complex was given to improve general health and combat the neurological complication of the animal. Within three days of treatment, the animal recovered completely. After recovery from pregnancy toxemia, medicinal induction of parturition was performed with cloprostenol sodium and valethamide bromide. The doe delivered two live foetuses within 24 hours of induction.

A clinical case report on pregnancy toxæmia in a goat

Fig. 1. Doe before treatment

Fig. 2. Radiograph showing skeletons of the fetuses

Fig. 3. USG showing live fetuses

Fig. 4. Doe after treatment

Glucose acts as a major source for energy for the developing fetus. In the last trimester due to rapidly growing fetuses, there is demand for excessive energy and adequate nutrition. In

this present case recovery was possible due to early investigation, prompt diagnosis and immediate administration of energy sources and supplementary medicines to the affected animal.

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