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Efficacy evaluation of some Polyherbal uterine Ecboolics in prevention and management of retained placenta in cattle

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Abstract

The present clinical trial was aimed to compare the efficacy of Exapar liquid, Exapar N liquid, Exapar premix and Exapar bolus in prevention and management of retention of placenta in cattle. The trial was conducted on 40 gravid cows approaching parturition. The Cows were divided into four groups, each consisting of ten animals. The group T₁, oral administration of Exapar liquid @ 100 ml. after parturition twice on day one followed by 50 ml. two times daily for five days. Group T₂ was given orally with Exapar N liquid @ 50 ml. after parturition two times on day one then 25 ml. two times daily for five days. Group T₃ was given orally with Exapar premix (AV/UTP/23) @ 80 gm per day for five days. Group T₄ was treated with simplified Exapar bolus (AV/UTB/16) @ 4 boli twice a day on first day followed by 2 boli twice a day for five days. The result of the above treatments, recorded as time required for expulsion of placenta, number of doses required before placental expulsion, nature of lochial discharge, appearance of first post- partum heat, conception rate at first service, number of services for conception and incidence of mastitis. Results revealed that Exapar liquid and Exapar N have superior results than Exapar premix and Exapar bolus for uterine cleansing and increasing conception rate. Hence, it can be concluded that Group T₁ and Group T₂ are highly efficient uterine cleansers which might helpful to decreases incidence of ROP and increase conception rate.

Keywords: Cow, Conception rate, Exapar, Lochial discharge, Retention of placenta

Introduction

Retention of fetal membranes (RFM) is a condition which is most commonly present following parturition in dairy animals results with infertility and drop in milk yield when not treated promptly and adequately (Noakes *et al.*, 2009) [6]. Retention of placenta occurs when failure of partial or complete placenta from maternal caruncles not expelled in a time period longer than normal physiologic limits (Radostits, 2007) [7].

Postpartum phase is a crucial transitory phase in animal body when there are various changes occurs as physiological, gynaecological and biochemical. Following parturition, due to Breached of the anatomical barriers, the animal is exposed to various infectious agents which cause high risk of uterine infections (Goff and Horst, 1997) [3]. Retention of Placenta (ROP) or Retention of the fetal membranes (RFM) is a common condition following parturition in farm animals where placenta not expelled within 12- 14 hours. Retention of placenta results in drop in milk yield, delayed involution of the uterus and infertility results in great economic losses (Lalrintluanga and Lalnuntluangi, 2010) [5]. There are many Etiological factors behind Retention of placenta like premature delivery, dystocia, prolonged gestation, uterine inertia, infections and seasonal as well as hormonal disorders. Some more conditions like deficiency of minerals and vitamins also induce the animal for ROP. Retention of placenta causes huge economic loss in a dairy farm because of health problem, treatment cost, decreased milk production and less market cost of the animal (Ahmed *et al.*, 2006) [1]. Animals which are affected with retention of placenta previously having prolonged calving interval because of increasing period of delivery to first service and successful conception (Han and Kim, 2005) [4]. Many literatures have proved that retention of placenta can be treated successfully with the use of herbal preparations (Cui *et al.*, 2014) [2].

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The present trial has been undertaken to evaluate the efficacy of oral herbal supplements in prevention and management of retention of fetal membranes.

Materials and Methods

The present trial was carried out at livestock farm (Apollo College of Veterinary Medicine) and at farmer’s door in and around Jaipur to compare the efficiency of herbal products like Exapar liquid, Exapar N, Exapar premix and Exapar bolus in the prevention and management of retention of placenta. A total 40 gravid cows approaching parturition were selected for the trial. The animals were allocated into four groups, T₁- T₄ (n=10) using systematic randomization so that the groups are as close to each other as possible. The group T₁ (n=10), oral administration of Exapar liquid @ 100 ml. after parturition two times on day one, then 50 ml. two times daily for five days. Group T₂ (n=10) was administered orally with Exapar N @ 50 ml. after parturition two times on first day, then 25 ml. two times daily for five days. Group T₃ (n=10) was administered orally with Exapar premix (AV/UTP/23) @ 80 gm per day for five days. Group T₄ (n=10) was administered with simplified Exapar bolus (AV/UTB/16) @ 4 boli twice a day on first day followed by 2 boli twice a day for five days.

Statistical Analysis

All the data obtained in this trial were analyzed as per the standard statistical procedure (Snedecor and Cochran, 1994) [8].

Results and Discussion

Expulsion of placenta

The time required for expulsion of placenta were found to be significantly less in group T₂ (9.8±2.51 hrs.) which treated with the Exapar N as compared to Exapar liquid, Exapar premix and Exapar bolus where expulsion time of placenta were 10.57±2.92, 13.5±3.17 and 14.8±4.14 hours respectively.

Table 1: Expulsion of placenta

Groups	Expulsion of placenta (hrs.)
G- T ₁	10.57±2.92
G- T ₂	9.8±2.51
G- T ₃	13.5±3.17
G- T ₄	14.8±4.14

Nature of lochial discharge

The nature of lochial discharge for all the four treatment groups was observed and recorded. In Exapar liquid treated group T₁, discharge was red in four cows, red white in four cows and red yellow in two cows. In the Exapar N treated group T₂, the discharge was recorded to be red in three cows, red white in four cows and red yellow in three cows. In Exapar premix treated group T₃, the discharge was recorded to be red white in five cows, reddish in three cows and red yellow in two cows. In Exapar bolus treated group T₄, the discharge was recorded to be red yellow in four cows, red white in four cows and reddish in two cows.

Table 2: Nature of Lochial discharge

Groups	Lochial Discharge (Nature)		
	Reddish	Reddish White	Reddish Yellow
G- T ₁	4	4	2
G- T ₂	3	4	3
G- T ₃	3	5	2
G- T ₄	2	4	4

Postpartum heat

In this trial, first estrus after parturition was evaluated in days 65.1±2.92, 59.6±3.14, 79.8±3.59 and 84.1±5.35 in group T₁, T₂, T₃ and T₄ respectively.

Table 3: Post-partum heat

Groups	Post-partum heat (Days)
G- T ₁	65.1±2.92
G- T ₂	59.6±3.14
G- T ₃	79.8±3.59
G- T ₄	84.1±5.35

The significant difference was observed in the appearance of first post-partum heat among different treatment groups. In Exapar liquid and Exapar N treated groups, animals take less time to show first post-partum heat than other treatment groups.

Conception rate

Significantly high conception rate was observed in the Exapar liquid and Exapar N administered groups (70%) as compared to the Exapar premix administered group T₃ (50%) and Exapar bolus administered group T₄ (40%).

Table 4: Conception rate

Groups	Conception rate (%)
G- T ₁	70
G- T ₂	70
G- T ₃	50
G- T ₄	40

Number of service for conception

Number of service per conception in the Exapar liquid administered group T₁ was 1.4. In Exapar N treated group T₂, number of service per conception was 1.3, whereas in Exapar premix group T₃ and Exapar bolus treated group T₄, number of service per conception was 1.8 and 2.2 respectively.

Table 5: Number of service for conception

Groups	Number of service
G- T ₁	1.4
G- T ₂	1.3
G- T ₃	1.8
G- T ₄	2.2

Incidence of mastitis

Incidence of mastitis was observed and recorded for all four treatment groups over a period of 30 days. In Exapar liquid treated group T₁, the incidence of mastitis was 20%. In Exapar N treated group T₂, the incidence of mastitis was 10%, whereas in Exapar premix group T₃ and Exapar bolus treated group T₄, the incidence of mastitis was 20% and 30% respectively.

Table 6: Incidence of mastitis

Groups	Incidence of mastitis (%)
G- T ₁	20
G- T ₂	10
G- T ₃	20
G- T ₄	30

Conclusion

The observations or results among the trial groups showing a pattern of significant improvement in expulsion time of fetal membranes and conception rate in the Group T₁ (Exapar

liquid) and Group T₂ (Exapar N) administered groups as compared to Group T₃ (Exapar premix) and Group T₄ (Exapar bolus) administered groups. Hence, it can be concluded that Group T₁ and Group T₂ are highly efficient uterine cleansers which might helpful to decreases incidence of ROP and increase conception rate.

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