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EFFICACY EVALUATION OF HERBAL ORAL LIQUID IN IMPROVING THE UTERINE HEALTH AND AUGMENTING REPRODUCTIVE PERFORMANCE IN DAIRY COWS

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ABSTRACT

A total of 34 cows, out of which 10 cows were in late gestation and the remaining 24 cows with a history of retained placenta and abnormal lochial discharge, were selected for the purpose of study. The 10 cows in late gestation were placed in the control group. Group T0 (n=10) was kept as control and not given any treatment. Group T1 (n=6) was treated with Exapar liquid (M/S Ayurvet Limited) at the rate of 100ml twice on first day followed by 50ml twice daily for another 3-5 days. Group T2 (n=6) was treated with Exapar N (M/S Ayurvet Limited) liquid at the rate of 50 ml twice on the first day followed by 25ml twice daily for another 3-5 days. Group T3 (n=6) was treated with Brand A at the rate of 200 ml once daily on first day followed by 100 ml once daily for next three days. Group T4 (n=6) was treated with Brand B at the rate of 100ml twice on first day followed by 100ml once daily for next 3 days. Parameters viz. type of parturition, nature of lochial discharge, placental condition, time required for expulsion of placenta were evaluated. Results revealed that number of cases of distocia significantly dropped in the Exapar liquid treated group compared to the rest, ROP cases were significantly less in the Exapar N treated group as compared to control, conception rate significantly higher in the Exapar liquid and Exapar N treated groups. Thus it can be inferred that Exapar and Exapar N are efficacious uterine cleansers which also help to increase conception rate.

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INTRODUCTION

Bacterial contamination of the uterine lumen is common in cattle after parturition, often leading to infection and uterine disease (Sheldon *et al.,* 2008). The internal lining of the post partum uterus is in constant contact with fluid and tissue debris that can support bacterial growth (Wallace, 1998). Uterine infections correspond to an increase in the calving interval; discard rate and services required per conception and to a reduction in production (Leblanc *et al*., 2002). Retention of fetal membranes is the most common condition occurring in domestic animals following parturition (Noakes *et al*., 2009). It is commonly followed by delayed involution of the uterus; drop in milk production and infertility resulting economic loss to the owner (Lalrintluanga, 2010). It causes considerable economic losses in the herd due to decreased milk production, illness and treatment cost, beside a decreased market value of the animal (Ahmed *et al*., 2006). The intervals from calving to first service and conception are also significantly prolonged in animals that have suffered retention of placenta (Han and Kim, 2005). The present study has been undertaken to evaluate the efficacy of herbal oral liquid in improving reproductive function of dairy cows.

MATERIALS AND METHODS

The present study was undertaken at a Dairy farm in Gujarat to evaluate the efficacy of herbal supplement Exapar N and Exapar liquid in the treatment of retention of placenta. A total of 34 cows, out of which 10 cows were in late gestation and the remaining 24 cows with a history of retained placenta and

abnormal lochial discharge, were selected for the purpose of study. The 10 cows in late gestation were placed in the control group. Group T0 (n=10) was kept as control and not given any treatment. Group T1 (n=6) was treated with Exapar liquid at the rate of 100ml twice on first day followed by 50ml twice daily for another 3-5 days. Group T2 (n=6) was treated with Exapar N liquid at the rate of 50 ml twice on the first day followed by 25ml twice daily for another 3-5 days. Group T3 (n=6) was treated with Brand A at the rate of 200 ml once daily on first day followed by 100 ml once daily for next three days. Group T4 (n=6) was treated with Brand B at the rate of 100ml twice on first day followed by 100ml once daily for next 3 days. Parameters viz. type of parturition, nature of lochial discharge, placental condition, time required for expulsion of placenta were evaluated.

Statistical analysis

All the data obtained were analyzed as per the standard statistical procedure (Snedecor and Cochran, 1980).

RESULTS AND DISCUSSION

Parturition and distocia

Results revealed that there was significant decline in the instances of distocia in the Exapar N liquid treated group T2 (33.33%) as compared to the Brand A treated group T3 (50%) (table 1). The decrease in the cases of distocia in the Exapar N treated group T2 may be attributed to its constituent herb, *Plumbago zeylanica,* which is known to possess abortifacient effect (King *et al.,* 1998).

Table 1. Parturition and distocia

Groups	Parturition (No. of cows)		
	Normal Parturition	Distocia	% of distocia
Group T0	7	3	30%
Group T1	3	3	50%
Group T2	4	2	33.33%
Group T3	3	3	50%
Group T4	4	2	33.33%

Nature of lochial discharge

The nature of lochial discharge was observed and recorded for the control and treated groups. In the control group T0, lochial discharge was reddish in three animals, reddish white in four animals and reddish yellow in three animals.

Table 2 Lochial discharge

Groups	Lochial Discharge		
	Reddish	Reddish white	Reddish yellow
Group T0	3	4	3
Group T1	2	4	-
Group T2	3	3	-
Group T3	2	4	
Group T4	2	3	1

In the Exapar liquid treated group T1, the lochial discharge recorded to be reddish in two animals, reddish white in four animals. In the Exapar N treated group T2, the lochial discharge was recorded to be reddish in three animals and reddish white in three animals. In the Brand A treated group T3, the lochial discharge was recorded to be reddish in two animals and reddish white in four animals.

In the Brand B treated group T4, the lochial discharge was recorded to be reddish in two animals, reddish white in three animals and reddish yellow in one animal. The percentage of animals exhibiting reddish placenta was higher in the Exapar N treated group T2 (50 %) as compared to the Brand A treated group T3 (33.3%).

Condition of the Placenta

Results showed that in the control group T0, the placental condition was recorded to be normal/good in six animals (60% of the animals), leathery in one animal (10% of the animals) and abnormal in three animals (30% of the animals). In the Exapar liquid treated group T1, the placental condition was recorded be normal/good in three animals (50% of the animals) and abnormal in three animals (50% of the animals). In the Exapar N treated group T2, the placental condition was recorded to be normal/good in three animals (50% of the animals), leathery in one animal (16.66% of the animals) and abnormal in two animals (33.33% of the animals). In the Brand A treated group T3, the placental condition was recorded to be normal/good in two animals (33.33%), abnormal in four animals (66.66%). In the Brand B treated group T4, the placental condition was recorded to be normal/good in three animals (50% of the animals), leathery in one animal (16.66% of the animals), abnormal in two animals (33.33% of the animals).

Table 3 Placental condition

Groups	Placental condition		
	Normal/Good	Leathery	Abnormal
Group T0	6	1	3
Group T1	3		3
Group T2	3	1	2
Group T3	2		4
Group T4	3	1	2

Expulsion of placenta

The cases of retention of placenta were found to be significantly less in the Exapar N treated group T2 (50% ROP cases) as compared to the control group T0 (60% ROP cases). The decrease in cases of ROP in the Exapar N treated group may be attributed to the anti- bacterial (Kalidass *et al.,* 2009) and anti-inflammatory (Mohanty *et al.,* 2015) effects of *Leptadenia reticulata,* which is a constituent ingredient of Exapar N.

Table 4 Expulsion of placenta

Groups	Expulsion of placenta		
	Retention of placenta	Normal cases of placenta expulsion	% of ROP cases
Group T0	6	4	60%
Group T1	4	2	66.66%
Group T2	3	3	50%
Group T3	3	3	50%
Group T4	3	3	50%

Time required for involution

The time required for involution of uterus was recorded to be significantly less in the Exapar liquid treated group T1 (39 days), and Exapar N treated group T2 (39.50 days) as compared to control group T0 (45.10 days), Brand A and Brand B treated groups T3 (45.33 days) and T4 (42.16 days).

Table 5 Time required for involution

Groups	Time required for involution
Group T0	45.10 days
Group T1	39 days
Group T2	39.50 days
Group T3	45.33 days
Group T4	42.16 days

Conception rate

The conception rate was recorded to be significantly higher in the Exapar liquid treated group T1 (83.33% conception rate) and Exapar N treated group T2 (83.33% conception rate) as compared to the control group T0 (60% conception rate), Brand A treated group T3 (50% conception rate) and Brand B treated group T4 (66.66% conception rate) (table 6).

Table 6. Conception rate

Groups	Pregnant (no. of animals)	Non- Pregnant (no. of animals)	Conception %
Group T0	6	4	60%
Group T1	5	1	83.33%
Group T2	5	1	83.33%
Group T3	3	3	50%
Group T4	4	2	66.66%

Conclusion

The animals placed under the control group were healthy animals whereas the animals from the treated groups had a history of retained placenta. Yet it was observed that the conception rate was significantly higher in the Exapar liquid and Exapar N treated groups as compared to the control. Thus, it can be inferred that oral administration of polyherbal liquid formulations indicated for uterine cleansing are highly efficacious in markedly increasing the conception rate and also helpful in reducing instances of retention of placenta.

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