

EFFECT OF UTERINE LAVAGE ON BACTERIAL COUNT AND CONCEPTION RATE IN REPEAT BREEDER CROSSBRED COWS

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ABSTRACT

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The present investigation was carried out to study the effect of uterine lavage on reduction of uterine infection and infertility in 24 repeat breeder crossbred cows. After treatment of these cows with either antibiotics or uterine lavage or uterine lavage+antibiotics or control at estrus, the number of bacterial colony counts were not different significantly among the groups but significant within the group. Same has resulted in a conception rate of 66.66, 66.66, 83.33 and 16.67%, respectively.

Key words : Repeat breeder, Uterine lavage, Uterine infection

Repeat breeding syndrome (RBS) is a major problem affecting the economy of farming community by causing failure of conception in cow even after 3-4 inseminations mainly due to specific and non-specific infectious agents of uterus during pre and post partum periods (Javed and Khan, 1991). Since, many years' intrauterine infusions with variety of antibiotics and antiseptics have been advocated without much benefit in the augmentation of conception rate among repeat breeding animals, a new approach called uterine lavage either alone or in combination with antibiotics (Ahmadi and Dehghan, 2007) and broad spectrum antibiotics based on antibiotic sensitivity have been employed in cows with RBS have been attempted to clear uterine infection for embryo survival and to enhance the conception rate.

A total of 24 repeat breeder crossbred cows which did not conceive even after more than 3 inseminations were selected on the day of estrus and were randomly assigned to four equal groups of six cows each namely

control (group I - sexual rest without any treatment), uterine lavage (group II - uterine lavage with normal saline during the luteal phase (8th day) of estrus cycle), antibiotic (group III - parenteral administration of antibiotics based on antibiotic sensitivity test for 5 days from the day of next estrus) and uterine lavage+antibiotic (group IV - uterine lavage with normal saline during the luteal phase (8th day) of estrus cycle and parenteral administration of antibiotics based on antibiotic sensitivity test for 5 days from 8th day of estrous cycle) to study their efficacy.

Uterine lavage was performed with 300 to 400 ml normal saline by employing non-surgical method of embryo collection procedure (Seidel and Seidel, 1991). Flushing fluid of uterus was transferred to laboratory and allowed for 30 min to settle the uterine contents. Later the supernatant fluid was siphoned off and remaining fluid was centrifuged and the sediment was subjected for bacterial count and antibiotic sensitivity test. Bacterial colonies were cultured in nutrient agar at 37°C for 24 to 48 hours and their growth was assessed based on the number of colonies. The antibiogram pattern of discharges was carried out by using standard antibiotic discs (M/s Hi Media, Bombay). All the cows

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were inseminated on the subsequent detected estrus and subjected to pregnancy diagnosis by rectal palpation after 60 days of insemination. The efficacy of each treatment was assessed by comparing with that of control group after analyzing the data as per Snedecor and Cochran (1968).

In the present investigation, bacterial colony counts after treatment with antibiotic, uterine lavage, uterine lavage+antibiotic were significantly decreased and enhanced the conception rate by creating a congenial environment in the uterus for the survival of embryo (Table 1). Singla *et al.* (1993) also observed $189.39 \times 10^6/\text{ml}$ total bacterial count in the uterine flushing of repeat breeding cows.

The antibiotic sensitivity pattern of the uterine discharges of Group III and IV cows in this study, revealed that the highest number of samples 11 (91.67%) were sensitive to enrofloxacin followed by gentamycin 10 (83.33 %), ciprofloxacin 9 (75.00%), ampicillin 5 (41.67%), oxytetracyclin 3 (25.00%), amoxicillin 2 (16.67%), cephalixin 2 (16.67%) and penicillin 1 (8.33%) (Table 2). The highest sensitivity to enrofloxacin observed is in agreement with the report of Abd-El-Rahman and Ibrahim, (2007), while Prajapati *et al.* (2006) and Warriach *et al.* (2008) observed lowered sensitivity pattern when compared to the present study.

While the sensitivity to gentamycin in this study was comparable with the report of Singh *et al.* (2001), higher with report of Prajapati *et al.* (2006) and lower with report of Shukla and Sharma (2005). Sensitivity to Ciprofloxacin was comparable with the report of Moharana *et al.* (2000), higher with report of Shwetha (2003) and lower with report of Ramprabhu *et al.* (2006). Sensitivity to ampicillin was comparable with the report of Baishya *et al.* (1998) and lower with the report of Mode and Sarode (2006). Sensitivity to oxytetracycline was comparable with the report of Sheldon *et al.* (2004) who indicated that oxytetracycline was a drug of choice for controlling the uterine infections in general. However, Prajapati *et al.* (2006) observed higher sensitivity pattern and Yadav and Kashyap (2003) recorded lowered sensitivity. The percentage of bacteria sensitive to amoxicillin and cephalixin was lesser than the findings of Shwetha (2003). Sensitivity to Penicillin was comparable with report of Yadav and Kashyap (2003) and higher with report of Shwetha (2003). The variations in percentage of sensitivity recorded in the reports of different authors and findings of the present study might be due to the difference in the number of bio-discs used, nature of bacteria present in the area, their virulence and resistance developed against antibiotics used.

Overall conception rate in the present study after treatment with antibiotics, uterine lavage and uterine

TABLE : MEAN (\pm SE) BACTERIAL COLONY COUNT (THOUSANDS) AT ESTRUS IN DIFFERENT TREATMENT GROUPS

Particulars	Time of treatment	Antibiotic	Uterine lavage	Antibiotic with uterine lavage	Control
Bacterial colony count	Before	38.00 \pm 4.09 ^a	28.50 \pm 4.18 ^a	31667 \pm 3438 ^a	16.42 \pm 2.12 ^a
	After	20.50 \pm 4.09 ^b	90.00 \pm 41.78 ^b	3000 \pm 3438 ^b	16.92 \pm 2.12 ^a
	Overall	20.03 \pm 2.56 ^{ba}	14.70 \pm 2.86 ^{ba}	15.98 \pm 2.33 ^{ba}	16.67 \pm 1.50 ^{aA}

Values bearing different superscripts (a,b) within column differ significantly on the day of estrus before and after treatment

Values bearing different superscripts (A,B) within row differ significantly when compared to control

lavage with antibiotics was 66.66% (4/6), 66.66% (4/6) and 83.33% (5/6), respectively. Similar to the present study, Ahmadi and Dehghan (2007) also indicated that uterine lavage is one of the effective remedy for clearing the infection in the uterus and for the enhancement of the conception rate. Though each group has cleared the uterine infection equally the conception rate was the highest in uterine lavage with antibiotics group when compared to other groups which might be due to the positive effect of uterine lavage along with antibiotic treatment in causing quick and better reduction of infection / clearance of bacteria and inflammation of the uterus without affecting the uterine defense mechanism.

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