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TREATMENT OF FIRST DEGREE ENDOMETRITIS BY CLOPROSTENOL AND ESTRADIOL IN CHOOLISTANI COWS

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ABSTRACT

The present study was planned to know the efficacy of colprostenol (PGF2α analogue) and estradiol for the treatment of endometritis in Cholistani cows. A total of 140 cows were divided into four equal groups (A, B, C, D). Group-A and B was given 2ml Prostenol intramuscularly. After Prostenol treatment, group A (n = 35) animals were inseminated during 1st estrus where as in group-B (n=35), first oestrus expected to occur after 24-94 hours was missed and during subsequent oestrus, animals were inseminated with frozen semen. In group-C (n=35), intrauterine infusions of estradiol 17-β (Star Laboratories) were given for 3 alternative days. For each intrauterine infusion 0.5mg of stilbesterol was thoroughly mixed in 69.5ml of distilled water. Cured animals with normal uterine discharge were inseminated with frozen semen. Group-D (n=35) was given no treatment and served as control. In groups A, B, and C, the curative percentages were 74.28, 88.57 and 62.85 where as the conception rates in all four groups (A, B, C, D) were 65.38, 77.41, 63.63, 40.0 %, respectively. There was significant difference in curative as well as conception rates of group A, B and C as compared to control. Significant difference ($P \leq 0.05$) was observed between group A and group B in curative as well conception rates. In the present study, the curative and conception rates were higher ($P \leq 0.05$) with cloprostenol treatment than estradiol treated animals. It was concluded that the use of cloprostenol is more effective as compared to estradiol for the treatment of Ist degree of endometritis in Cholistani cows. After cloprostenol treatment animal should be inseminated during the IInd oestrus that follows the induced one. This will increase curative as well as conception percentage.

Key words: Cholistani Cow; Endometritis; Cloprostenol; Estradiol**.**

INTRODUCTION

Endometritis is one of the most common reproductive disorder of buffaloes and cows. This problem not only affects milk yield but also decreases reproductive efficiency. The incidence of first degree endometritis has been reported to be 56.2% (Samad *et al*., 1984) in buffalo. Various antibiotics and antiseptics have been used intrauterine for the treatment of endometritis. The efficacy of antibiotics needs to be evaluated from time to time since new resistant strains of bacteria can develop due to in-discriminate use of antibiotics (Vekateswaran and Rajeswar, 1991). There is scope for the use of non-antibiotics as an alternative for the treatment of endometritis. Prostaglandin F2α in cattle causes regression of corpus luteum and results in reduced plasma progesterone concentration (Hafez and Hafez, 2000). Estrogen enhances blood supply to uterine mucosa that increases phagocytosis by the exposure of blood to the site of infection.

Cholistani cow is one of the famous dairy breeds in Pakistan. This breed is found in the sandy desert areas of Cholistan and is considered to be ancestors of Sahiwal breed. As ascertained from available literature no study has been undertaken to know the efficacy of non-antibiotics as treatment of endometritis in Cholistani cows.

Therefore, the present study was planned with the objective to know the efficacy of colprostenol (PGF2α analogue) and estradiol for the treatment of endometritis in Cholistani cows.

MATERIALS AND METHODS

The research was carried out on 140 Cholistani cows belonging to different places in and around Bahawalpur during the period from September 2004 to July 2005. These animals were approximately of same age and nutritional health status. Cows were given a detailed gynecological examination for proper diagnosis of endometritis and degree of endometritis. Cows categorized as 1st degree endometritis were divided into four equal groups A, B, C and D.

In groups A (n = 35) and B, at the time of estrus, a detailed gynecological examination was performed. After 10 days animals were again rectally palpated to ascertain the presence of corpus luteum. If CL was present, 2ml Prostenol (Selmore Pharmaceuticals) was administered intramuscularly. After 24-94 hours of Prostenol injection, the animals were expected to come in estrus. Cured animals with normal uterine discharge were inseminated with frozen semen. In group-B (n=35), first oestrus expected to occur after 24-94 hours was missed. During subsequent oestrus, animals were thoroughly

checked. Cured animals were inseminated with frozen semen. In group-C (n=35), intra uterine infusions of estradiol 17-β (Star Laboratories) were given. The injections were repeated for 3 alternative days. For each intrauterine infusion, 0.5ml of stilbesterol was thoroughly mixed in 69.5ml of distilled water. Cured animals with normal uterine discharge were inseminated with frozen semen. In group-D (n=35), animals were inseminated with frozen semen without giving any treatment. This group served as control. The data was statistically analyzed by using paired t-test (Steel *et al*., 1997).

RESULTS AND DISCUSSION

In group A, the curative percentage was 74.28 and the conception rate was 65.38% where as in animals of group B, the respective values were 88.57 and 77.41%, respectively. There was significant difference ($P \leq 0.01$) in curative as well as conception rates of group A and B as compared to control. Similar results have been reported earlier (Busch *et al*., 1984; Chmiel *et al*., 1988). Significant difference ($P \leq 0.05$) was observed between group A and group B in curative as well conception rates. This may be due to hormonal imbalance at the time of induced oestrus because prostaglandin controls estrus by shortening of the luteal phase (Morrow, 1986). The fertility rate has been shown to be less during induced oestrus as compared to normal one.

The curative percentage in group C animals was 62.85. and the conception rate was 63.63%. The conception rate in control group (group D) was 40.0%. In the present study significant difference was observed ($P \leq 0.05$) between animals of group C and group D. The curative and conception rates were higher ($P \leq 0.05$) with cloprostenol treatment than estradiol treated animals.

The use of PGF2α was based on its luteolytic effect causing regression of corpus luteum. Moreover, the use of PGF2α causes relaxation of cervix and expulsion of uterine contents (Hirsbrunner *et al*., 2000). The regression of CL allows development of dominant follicle on the overy that results in oestrus and ovulation 72-96 hours after its administration. Under the influence of estrogen, uterus becomes more resistant towards infection (Wulster *et al*., 2003). Hence use of PGF2α may provide microbial resistant uterine environment on one hand and can favor and enhance body defense mechanism/phagocytic activity on the other hand.

Based on the information obtained from this study, it was concluded that the use of cloprostenol is more effective as compared to estradiol for the treatment of Ist degree of endometritis in Cholistani cows. After cloprostenol treatment animal should be inseminated during the IInd oestrus that follows the induced one. This will increase curative as well as conception percentage.

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