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CLINICAL AND THERAPUTIC STUDY OF POSTPARTURIENT ANESTROUS OF COW

Jawad Khadim Taher[1], Hussein Abbas Khamees[2] and Haider Rashash Abbas[1]

[1]Department of surgery and obstetrics. Collage of veterinary medicine - Di Qar University, Iraq.
[2]Department of surgery and obstetrics. Collage of veterinary medicine - ALMuthannah University, Iraq.
[3]Department of surgery and obstetrics. Collage of veterinary medicine - Basrah University, Iraq.

Abstract

The present study aimed at evaluating the effect of different combination drugs to treatment the postpartum anestrous in cows. Fifteen local dairy cows, 3-10 years old, weights 200-300 kg and postpartum period (15-15) months. This study was conceded in Dhi Qar province /Iraq 2016. The cows were divided into five groups (10 cows in each group); four groups in which the four different hormonal regimes were used for treatment and a fifth group was considered as a control group. First treatment group (T_1) using a hormonal system (1 ml estradiol benzoate (synthetic benzoate ester of estradiol) (2mg)/ SC + 3 ml colproestenol (synthetic analogue of prostaglandin F2α) (750 mg)/ SC). Second treatment group (T2) using a hormonal system (1 ml estradiol benzoate (2mg)/ SC. + 5 ml oxytocin (5 IU)]/ SC). Third treatment group (T_3) using a hormonal system (3 ml colproestenol (750 mg)/ IM + 5ml oxytocin (50 IU) / IM). Fourth treatment group (T4) using a hormonal system (1 ml estradiol benzoate (2mg)/ SC + 3 ml colproestenol (750 mg)/ IM + 5ml oxytocin (50 IU)]/IM). Fifth group (control group) only using a rectal palpation and Injection 5 ml normal saline (NS). The results showed significant differences to responsible to treatment and appear of estrous signs between all groups (at $p < .05$) and the higher percentage (90%) was registered in the group one (T_1) of treatment that in which used1) ml estradiol benzoate (2mg)/ SC+ 3 ml colproestenol (750 mg)/ SC). The results also showed there was a significant difference between the first and second treatments, between the second and third, as well as between the second and fourth group (at $p < .05$), while the results did not show a significant difference between the first and the third, first and fourth as well as between fourth and third (at $p < .05$). The percentages of responsible to treatment and appear of estrous signs during using of different hormonal regimes was 90%, 40%, 70% and 50% for the T_1, T_2, T_3 and T_4 respectively comparative with 0% at the control group. The pregnancy rate of treatment cows that showed estrous sings according the number of group was 55%, 50%, 57% and 40% for the T_1, T_2, T_3 and T_4 respectively.

Key words : Therapeutic, Post parturient, Anestrous, Cow.

Introduction

Anestrous is defined by (Singh, 2013) as the absence of periodic manifestation of estrus, either with absence of normal physiological signs of estrus (sub-estrus) or without palpable follicular or luteal structure (true anestrous).

Postpartum anestrous, as the period of anestrous following parturition, becomes abnormal when its duration extends the accepted average from 60-80 days postpartum (Morrow, 1986) with the sequence of considerable economic losses to the dairy industry, prolonged inter calving interval, cost of medication, drop in milk production and early depreciation of potentially useful cows (Thomas, 1989).

Postpartum anovulation and anestrous are common; with approximately 20% of dairy cows, anestrous by the start of breeding programs (Rhodes *et al.*, 2003) or by 63 d after calving (Santos *et al.*, 2004).

Almost 50% of cows in modern farming suffer from ovarian dysfunctions in the pre-service postpartum period. The most important disorders are delayed cyclic resumption, anovulation and the prolonged luteal phase, and they represent almost 90% of all abnormalities (OPSOMER *et al.*, 1998).

Postpartum anestrous is a result of many interacting factors, management, physiological, pathological and

nutritional factors. These factors include age, breed, pre- and postpartum nutrition (Singh, 2001), body condition at calving, milk yield, suckling (Stagg *et al.*, 1998).

The present study aimed at evaluating the effect of different combination drugs to treatment the postpartum anestrous in cows.

Materials and Methods

A total of 50 local dairy cows, 3-10 years old, weights 200-300 kg and postpartum period (15-15) months. This study was conceded in Dhi Qar province /Iraq 2016. The case history of each cow was determined by the owner's information. The rectal palpation was then performed to evaluate the reproductive system especially the size and status of the ovaries.

The cows were divided into five groups (10 cows in each group); four groups in which the four different hormonal regimes were used for treatment and a fifth group was considered as a control group. (Table 1).

1. First treatment group (T_1) The following hormonal system was used:
   - 1 ml estradiol benzoate (synthetic benzoate ester of estradiol) (2mg)/ SC.
   - 3 ml colproestenol (synthetic analogue of prostaglandin F2α) (750 mg)/ SC.
2. Second treatment group (T2) The following hormonal system was used:
   - 1 ml estradiol benzoate (2mg)/ SC.
   - 5 ml oxytocin (5 IU)]/ SC.
3. Third treatment group (T_3) The following hormonal system was used:
   - 3 ml colproestenol (750 mg)/ IM
   - 5ml oxytocin (50 IU) / IM
4. Fourth treatment group (T4) The following hormonal system was used:
   - 1 ml estradiol benzoate (2mg)/ SC
   - 3 ml colproestenol (750 mg)/ IM
   - 5ml oxytocin (50 IU)]/IM
5. Fifth group (control group):
   - Rectal palpation performs.
   - Injection 5 ml normal saline (NS).

Statistical analysis

The significant differences were analyzed using the T-test (SPSS 10.0.1 software program) was use for all statistical analysis. Differences were considered significant at level of $p < 0.05$.

Results and Discussion

The results showed significant differences to responsible to treatment and appear of estrous signs between all groups (at $p < .05$) and the higher percentage (90%) was registered in the group one (T_1) of treatment that in which used1) ml estradiol benzoate (2mg)/ SC+ 3 ml colproestenol (750 mg)/ SC)

The results also showed there was a significant difference between the first and second treatments, between the second and third, as well as between the second and fourth group (at $p < .05$), while the results did not show a significant difference between the first and the third, first and fourth as well as between fourth and third (at $p < .05$). The use of PGF2α in treatment of retained corpus luteum (CL) has been widely advised [1]. However, the effect of PGF2α depends mainly on the presence of corpus luteum in the ovaries by its action as a luteolytic factor (Singh *et al.*, 1979).

The percentages of responsible to treatment and appear of estrous signs during using of different hormonal regimes was 90%, 40%, 70% and 50% for the T_1, T_2, T_3

Table 1: Divisions of study groups and hormonal drugs that used.

Treatment Drugs	Study Groups
1 ml estradiol benzoate (2mg) subcutaneous + 3 ml colproestenol (750 mg)	Group1 (T_1)
1 ml estradiol benzoate (2mg) subcutaneous + 5 ml oxytocin (5 IU)	Group2 (T_2)
3 ml colproestenol (750 mg) IM + 5ml oxytocin (50 IU) IM	Group3 (T_3)
1 ml estradiol benzoate (2mg) subcutaneous + 3 ml \ IM colproestenol (750 mg) + 5ml oxytocin (50 IU)	Group4 (T_4)
Only rectal palpation + injection 5 ml (NS)	Goup5 (control)

Table 2: Percentages of Response to treatment and Pregnancy rate.

Pregnancy rate	Response to treatment and appear of estrous signs	Study groups
5/9 (55%)	9/10 (90%)	Group1 (T_1)
2/4 (50%)	4/10 (40%)	Group2 (T_2)
4/7 (57%)	7/10 (70%)	Group3 (T_3)
2/5 (40%)	5/10 (50%)	Group4 (T_4)
	0/10 (0%)	Goup5 (control)

The *f-ratio value* is 6.35112. The *p-value* is .000203. The result is significant at $p < .05$.

and T_4 respectively comparative with 0% at the control group. Oxytocin injected [13] or released in response to milking or suckling or the presence of uterine infection (Watson, 1984) may be responsible for consequently earlier luteolysis and earlier resumption of a normal luteal phase (Madej *et al.*, 1984). It has also been shown that intrauterine infusion of indomethacin, an inhibitor of prostaglandins synthesis, not only diminishes basal or induced concentrations of oxytocin and of the PGF metabolite but also prolongs the life of corpora lutea induced by GnRH (Troxel and Kesler, 1984).

The pregnancy rate of treatment cows that showed estrous sings according the number of group was 55%, 50%, 57% and 40% for the T_1, T_2, T_3 and T_4 respectively (Table 2).

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