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COMPARATIVE TREATMENT OF REPEAT BREEDING IN NORMAL CYCLING COWS (CLINICAL STUDY)

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ABSTRACT

The study was done to evaluate some programs for treatment of repeat breeder in (60) normally cycling cows. The animal of study divided in to (3 groups) : the first group injected with 3ml of Alfaglandin and 5 ml of Gestar in the day (10) of estrus cycle, re-injection of 5 ml of Gestar in day (21), the second group administered (5 ml) of Gestar in day (10) and (3ml) of Alfaglandin in day (15) then reinjected with (5ml) of Gestar in day (21) of estrus cycle and the final group administered only 5 ml Gestar in the day (21) of cycle. The result of pregnancy rate that appeared after rectum gestation 3 month later show that (14) cows (70%) has pregnancy in the group (1) in compared with second group about (18) pregnant cows (90%) and the third group show only (5) pregnant cows in percentage rate (25%). The study conclude that the best ways for treatment of repeat breeder in cows the using of 5 ml of Gestar (GnRh hormone) in the day (10) and Alfaglandin (cloprostenol hormone) in day (15) then reinjection of Gestar in day (21) of cycle to increase the probability of pregnancy and fertilizing rate in cows.

***Keywords*:** Repeat breeder, Gestar, Alfaglandin.

Introduction

Repeat breeding is one of the important causes of infertility in cattle (cows and buffalos), it has been reported that 10- 24 per cent of reproductive cows in farms are repeat breeders (Rajkumar *et al*., 2018). Inadequate and inaccurate estrus detection is frequently a cause for cows becoming repeat breeder (Diskin, and Kenny, 2014; Barui *et al*., 2015). Repeat breeder in caws return to service repeatedly after being bred with a fertile male, these cows exhibit normal signs of estrus every 18 to 24 days after mating but require more than 3 services to become pregnant (Robert *et al*., 2014 ; Crowe *et al*., 2018) some of these cases may be associated with early embryonic deaths, since most of the embryonic losses in cows occur much earlier in pregnancy than previously believed (Ahmed *et al*., 2010). Repeat breeder syndrome is a major source of economic waste in dairy herds.

Rahim and Asghar, (2007) reported that cows that fail to conceive after a defined number of inseminations with fertile semen (generally 3 or more) are classified as repeat breeders, abnormal uterine environment may cause repeat breeding and endometritis is one of the most important causes; therefore, improvement of the intrauterine environment for embryo survival is the basis of different therapeutic methods. In females, several interrelated factors such as estrous behavior and certain endocrine aspects have been investigated in modern high-yielding repeat breeder (RB) cow (Diskin, and Lonergan, 2014; Sood *et al*., 2019). The causes of repeat breeding in cows are a hormonal insufficiency and dysfunction contribute about 40.1% causes of repeat breeding (Ishwari *et al*., 2019). Prolonged duration of estrus, extended follicular phase, delayed luteinizing hormone (LH) surge and thus delayed ovulation, late postovulatory rise in plasma progesterone considered to be most prominent factors responsible for repeat breeding (Opsomer *et al*., 1996).

Hormonal treatment of repeat breeder

The GnRH hormone can be use with variable effectiveness in numerous studies on cows when the follicle status of the animals was unknown, with a single injection or two injections 10 days apart, or frequent low-dose injections at 1- to 4-h intervals of GnRH or GnRH analogues failed consistently to induce ovulation in over 90% of treated anoestrous cows (Singh *et al*., 2008). A 250 µg GnRH resulted in ovulation in 20 cows when administered at dominance of a follicular wave; this was followed by emergence of a new wave of ovarian follicular growth 1.6±0.3 days later and dominance of the subsequent wave was attained in 5±0.3 days (2). Dhami *et al*. (2015) reported that hormonal therapies have good therapeutic value to enhance reproductive efficacy in infertile animals only with good nutritional status and health. Hormonal protocol, like GnRH ,exogenous sustained release progesterone device like Controlled Internal Drug Release (CIDR) have been used successfully in treatment of repeat breeders (Kothandaraman and John, 2017). Saleem *et al*. (2014) concluded that the results demonstrated that the incidence of repeat breeding case of crossbred cows in the farm condition was associated with a significantly low level of some hormones like FSH and progesterone , among the minerals, zinc was found to play the most vital role to cause repeat breeding condition in the farm animals. The main aim of study was evaluate the

best program for treatment of repeat breeder in normally cycling cows.

Material and Methods

The study has been done on (60) normal cycling mature cow with a history of previous multiple parturition and now all the cows suffered from repeat breeder (seen after at 3 – 6 natural insemination from a healthy mature good properties bulls), the repeat breeder in the cows of study persist about 21 day as range. The animals of study were divided into (3) groups ; the first group injected with 3ml of Alfaglandin (each ml contain 250ncg of cloprostenol hormone) and 5 ml of Gestar (each ml contain 0.42 mg of synthetic gonadotrophic releasing hormone) in the day (10) of estrus cycle reinjection of 5 ml of Gestar in day 21 as a treatment, the second group administered 5 ml of Gestar in day (10) and 3ml of Alfaglandin in day (15) and reinjected of 5ml of Gestar in day (21) of estrus cycle and the final group administered only Gestar in the day (21) of cycle (Fig. 1). The Chi-square test was used to assess the significant differences among proportions.

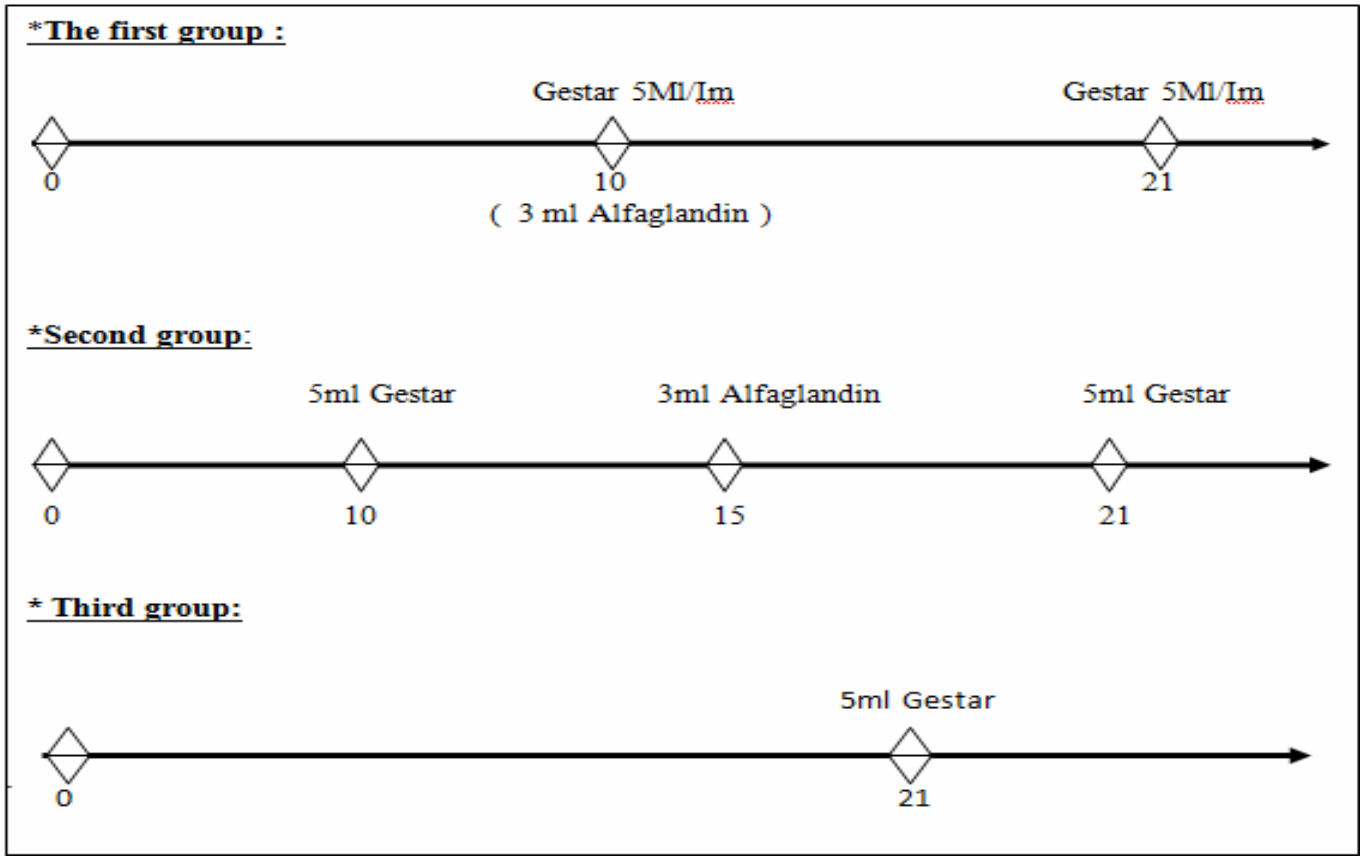

Fig. 1 : Refer to the times and doses of hormonal injection in all 3 groups of treated cows.
*0=day zero of estrus cycle.

The estrus signs in all cows appeared in range of days (23-28 of cycle, the bulls kept in close of the female for natural insemination then the animals of study kept under our observation for about 3 month after natural insemination) and reporting the result in documents. The pregnancy diagnosis by gestation done after 2,3 months respectively to insure from the progressiveness of pregnancy in pregnant cows.

Results

The pregnancy test by rectal palpation has been done easily after 3 month of natural insemination. The result of pregnancy after natural insemination show there were a 14 cows from (20) inseminated cow has pregnant after one insemination, in the group (1) with percent rate (70%) this group treated with Gestar + Alfaglandin in the day 10 and Gestar only in the day (21). The result of pregnancy rate showed in the second group which treated with Gestar in day (10), Alfaglandinin day (15) and Gestar in day (21) show very high level of pregnancies, there were a (18) pregnant cows from (20) naturally inseminated cows, with percentage rate of (90%). The results of pregnancy rate in the final third group which treated only with Gestar in day (21) show lowest pregnancy rate in comparison with other two groups, there were only (5) pregnant cows from (20) normally inseminated cows with percentage rate of (25%). The total number of pregnant cows in the study were (37) pregnant cases with percentage rate (61.6%) (Table 1).

Table 1 : Refer to the number of treated cows with number and percentage of pregnant cow in all treated groups .

No:	Number of samples	Number of pregnancies	Percentage	Chi-square value	P
Group 1	20	14	70%	18.75	<0.0001
Group 2	20	18	90%		
Group 3	20	5	25%		
Total	60	37	61.6%		

Discussion

According to table (1), there are a significant differences (P<0.0001) in the percentage of pregnancies, especially in the group number (2) when we used double dose of Gestar hormone.This result may be occurred because of the role of the Alfaglandin hormone and its component that may cause increasing in the percentage of fertilization rate specially in the hast stage of estrus cycle . The decreasing of pregnancy rate in the group number (3) could be occurred due to the ineffective action of Gestar hormone alone so the fertilization rate tend to be decreased to the lowest percentage.

The study concluded that the best hormonal treatment of repeat breeder in normal cycling cows is the using of 5 ml (each ml contain 0.42mg of synthetic gonadotrophic releasing hormone) of Gestarin the day (10) and 5 ml (each ml contain 250ncg of cloprostenol hormone) of Alfaglandinin day (15) then re-injection of 5 ml of Gestar in day (21) of cycle to increase the probability of pregnancy and fertilizing rate in cows.

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