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Etiology And Efficacy of Different Treatment Methods of Inactive Ovary (anestrous) in Cows at Tehran Dairy Farms.

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Abstract:

In order to study the etiology and efficacy of different treatment methods of inactive ovary , 64non pregnant cows which had not shown any signs of estrous after more than 60 days of parturition were selected in some Tehran dairy farms. Rectal palpation and evaluation of follicle and corpora lutea on the ovaries were repeated after 10 days and the ovaries without any follicle and corpora lutea were encountered as inactive ovaries. Anestrous cows were treated by ov synch (n=32), CIDR +ov synch (n = 12), PMSG (3000 IU) + ov synch (n = 20). Some reproductive indices such as: treatment to pregnancy interval (retrospective open days) and numbers of service for pregnancy were analyzed in different treatment groups. The rates of uterine infection, lameness, pneumonia, and mastitis were analyzed in anestrous and normal cows.The results show that numbers of service for pregnancy, treatment to pregnancy interval were significantly lower in PMSG treated animals (P<0/05). Lameness and pneumonia have significant correlation with inactive ovary however; uterine infection and mastitis have not such correlation. It is concluded that PMSG therapy is an important method to remedy anestrous and pneumonia and lameness are two important factors in producing inactive ovaries in present condition of this study.

Key words: Anestrous cows , Ovsynch, CIDR-Ovcnch,GnRH

Introduction:

Pathologic anestrous due to inactive ovaries is the most important factor producing infertility in cows after uterine infection, repeat breeder, and mastitis. (Abeyguna warden and Dematawew 2004 and Bartlett 1987). Many authors have encountered the rate of 12 to 46 %(Hussein 1992) . This make increased parturition to first service interval (more than 26 days), increase days open and parturition to pregnancy interval and decrease pregnancy rate (more than 18 %). These adverse effects make increase calving interval and economic losses .Ovarian resumption may commence 30 to 70 days post partum in normal cows. Factors affecting Hypothalamo-Pituitary – Ovarian axis could delay ovarian rebound . Periparturient accidents, plane of nutrition (Burke,2005) and metabolic workload including: negative energy balance(Gerloff and Morrow,1986), non reasonable BCS(Monitel and Ahuja 2005 and Pryce et al 2001)) ,body weight, hypophosphatemia, high milk yield (Opsomer et al 2000) , and many stress full conditions such as lameness, pneumonia, uterine infections and clinical or sub clinical mastitis may have determinant rolls in increasing parturition to pregnancy interval and anestrous. Sire breed of calf influences peripartum endocrine profiles and postpartum anestrous in Brahmann cows(Browning 1996).

After elimination of predisposing factors many different hormonal treatment have been given to anoesrous cattle in attempts to cause a restoration of cyclic activity(Noakes et al 2001). PMSG(Beardan,2004), GnRH (Crowe et al 1993), CIDR(Noakes et al 2001 and McDougall 2004)) and other progesterone like devices have been used to(Aller 2005) overwhelm anoestrous.

In this article etiology and efficacy of current treatment methods of inactive ovary (anestrous)in cows at Terhran-Iran dairy farms are to be studied .

Materials and Methods:

In order to study the etiology and efficacy of different treatment of inactive ovary , 64 non pregnant cows which had not shown any signs of estrous after more than 60 days of parturition were selected in some Tehran dairy farms. Rectal palpation and evaluation of follicle and corpora lutea on the ovaries were repeated after 10 days and the ovaries without any follicle and corpora lutea were encountered as inactive ovaries. Anestrous cows were treated by ovsynch (n=32), CIDR +ovsynch (n = 12), PMSG (

3000 IU) + ovsynch (n = 20). Some reproductive indices such as: treatment to pregnancy interval (retrospective open days) and numbers of service for pregnancy were analyzed in different treatment groups. The rates of uterine infection, lameness, pneumonia, and mastitis were analyzed in anestrous and normal cows.

Results:

The results show that the numbers of service for pregnancy, treatment to pregnancy interval were significantly lower in PMSG treated animals (P<0/05). Lameness and pneumonia have significant correlation with inactive ovary however; uterine infection and mastitis have not such correlation.

Table (1)The effects of different treatment protocols on reproductive indexes.

Different treatments	**Reproductive Indexes (No±SE)**		
	services per conception	Treatment to pregnancy Interval	Parturition to pregnancy Interval
Ovsync (No.32)	1.94±0.2	106.38±8.7	226.16±12.6
CIDR+Ovcync (No.12)	2.33±0.45	129.75±21.57	236.50±20.5
PMSG+Ovcync (No.20)	1.85±0.274	96.85±7.28	225.65±21

Table(2) Relative and absolute frequency of different disorders in anestrous as compared with total numbers of evaluated animals.

Different disorders		Total: (Normal and anestrous Cows)		Anestrous Cows	
		No.	%	No.	%
Anestrous	+	64	15.8	-	-
	-	341	84.7	-	-
Uterine Infections	+	66	16.3	15	23.4
	-	339	83.7	49	76.6
Lameness	+	47	11.6	17	26.6
	-	358	88.4	47	73.4
Mastitis	+	77	5.4	3	4.7
	-	383	94.6	61	95.3
Pneumonia	+	16	5	4	6.3
	-	389	96	60	93.7

Discussion:

Anestrous due to inactive ovaries is a multi factorial disorder and many agents affecting hypothalamo-pituitary -ovarian axis could affect this pathologic disorder(Fourichon et al 2000, Noakes et al 2001and Wilt bank et al 2002).

Sheldone et al(2003) studied the influence of uterine bacterial contamination after parturition on ovarian dominant follicles selection and follicle growth and function in cattle and find evidence for an effect of the uterus on the ovary after parturition ,whereby uterine bacteria have a contemporaneous localized effect on ovarian follicle selection and subsequent growth and

function ,but not initial emergence. Schrick et al(2001) demonstrated that subclinical mastitis reduced reproductive performance of lactating cows similar to clinical mastitis. Subclinical mastitis followed by clinical mastitis resulted in the most loss in reproductive performance. Reproductive performance did not differ between gram –negative or gram-positive mastitis pathogens. Cows with clinical or subclinical mastitis before first service had increased days to first service (77.3 ± 2.7 and 74.8± 2.7 d), days 0pen(110 ± 6.9d), and service per conception (2.1 ± 0.2 and 2.1 ± 0.2)compared with controls (67.8 ± 2.2 d , 85.4 ± 5.8 d, 1.6 ± 0.2 ;p < o.o5). Garbarino et al(2004) showed that lameness is associated with delayed ovarian activity in Holstein cows during the early postpartum period. In presence study lameness and pneumonia had significant correlation with ovarian activity during the early postpartum period however; uterine infection and mastitis have not such correlation .It would not be an intrinsic properties and may be due to low levels of uterine infection and mastitis as compared with lameness and pneumonia in the studied condition.

Treatment of cows with extended postpartum anestrous interval have been reviewed by many authors.In order to induced cyclicity in dairy cattle with prolonged postpartum anestrous, Hussain et al(1992) administered repeated dosages of GnRH , two injection 1hour apart on the first day and 12 repeated treatments twice weekly. Finally, there were no significant difference among treatment groups in the number of days from calving to first ob served estrous or the number of days open. Juubb et al(1989) evaluated a regimen using a progesterone releasing intravaginal device (CIDR) and PMSG as a treatment for post partum anestrous in dairy cattle. The CIDR was inserted for 7 days and 400 IU of PMSG was injected intramuscularly at removal. There was no clinical useful difference among cows receiving the CIDR, a placebo and untreated cows in the interval from treatment to either first estrus or conception, the conception rate to first service or percent pregnant by the end of mating .Hanlon et al(2005) showed that supplementation of previous treated anovulatory anestrous dairy cows with an intravaginal progesterone-releasing device s for 7 days (commencing 4 or 5 days after insemination) did not significantly improve first-service conception rate. XU et al(2000) demonstrated that noncyclic dairy cows treated with 10 µg GnRH and a progesterone-releasing CIDR insert on Day 0 , 25 mg $PGF_{2\alpha}$ and CIDR removal on Day 7 , followed by 1 mg estradiol benzoate on Day 9 for those cows that still had not shown estrus had higher conception rate (47% vs. 29%)than cows treated only with CIDR and estradiol benzoate as above .In this study GnRH treatment induced ovulation or turnover of dominant follicles, induced a synchronized initiation of a new

follicular wave, and increased the progesterone concentration from 4 d after treatment.
In the present study the numbers of service per conception and treatment to pregnancy interval were significantly lower in PMSG treated than CIDR or CIDR _OV Cynch treated cows.

It is concluded that PMSG therapy is an important method to remedy anestrous and on the other hand, pneumonia and lameness are two important factors in producing inactive ovaries in present condition of this study.

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