

Treatment of Inactive ovaries in dairy cows

A. R. Mansoor*, M. M. Taha*, K. D. Ahmed** and A. F. Majeed***

* College of Agriculture\ University of Anbar

** Euphrates Higher Basin Developing Center\ University of Anbar

***College of Veterinary Medicine\ University of Anbar

Abstract

The study was conducted on 96 Holstein- Friesian cows presented in al-fayha station– Babylon, Iraq suffering from inactive ovaries. The age of animals ranged from 4-8 years. The study was designed to show the effect of different methods for treatment of inactive ovaries in dairy cows. The animals were divided into four equal groups (no.=24). The first Group were treated with 3000 I.u. eCG i.m. The second Group were treated with 0.5 mg GnRH i.m.. The third Group were administered manual massage to ovaries and uterus once weekly per rectum for three times. The fourth group were artificially inseminated post treatment after signs of oestrus appeared on the animals. Responses to different treatment was 83.3%, 50%, 58.3% and 8.3% respectively. It was concluded from this study that treated with eCG and massage of ovaries was effective methods for treatment of inactive ovaries in dairy cows.

علاج حالة خمول المبايض في أبقار الحليب

عمار رحيم منصور* ، محمد مؤيد طه* ، خالد دفيك أحمد** عبد الستار فرج مجيد***

*كلية الزراعة/ جامعة الأنبار

**مركز تنمية حوض أعالي الفرات/ جامعة الأنبار

***كلية الطب البيطري/ جامعة الأنبار

الخلاصة

أجريت الدراسة على 96 بقرة من سلالة الهولشتاين- فريزيان تواجدت في محطة الفيحاء الواقعة في محافظة بابل، كانت تعاني من خمول المبايض. تراوحت أعمارها بين 4 - 8 سنوات. كان الهدف من الدراسة معرفة تأثير استخدام عدة طرق لعلاج خمول المبايض في أبقار الحليب. قسمت الحيوانات إلى أربع مجاميع متساوية (24 بقرة). عولجت المجموعة الأولى بحقنها بهرمون eCG بجرعة 3000 وحدة دولية بالعضل وعولجت المجموعة الثانية بحقنها بهرمون GnRH بجرعة 0.5 ملغم بالعضل إما المجموعة الثالثة فقد عولجت بعمل مساج للمبايض عبر المستقيم ثلاث مرات في حين عولجت المجموعة الرابعة بحقنها بماء مقطر. كانت نسبة الاستجابة 83.3% و50% و58.3% و8.3% على التوالي. نستنتج من الدراسة الحالية إمكانية استخدام هرمون eCG وطريقة المساج لعلاج خمول المبايض حيث أعطت أفضل النتائج.

Introduction

Inactive ovary is a condition in which the ovaries are quiescent without signs of cyclicity or cycle related ovarian structures (1). The cows would not have shown any sign of estrus and rectal palpation reveals small ovaries, which are either flat and smooth or sometimes rounded if follicles are present (2), It has been suggested that the failure of normal ovarian activity may be insufficient release or production of gonadotropins to induce follicular development and maturation or it may reflect that failure of the ovaries to respond to gonadotropins.

There are several factors predispose to the condition. A low level of nutritional intake has been considered to be a major cause (2).

Several methods of treatments were used for inactive ovaries including , hormonal, nutritional and managemental therapy (3, 4).

The study was designated to determine the effect of different methods of treatment on fertility of inactive ovaries cattle.

Materials and Methods

The study was undertaken on 96 Holstein- Friesian cows presented at al-fayha station suffering from postpartum ovarian inactivity. The age of animals ranged from 4-8 years. Diagnosis of the cases depends upon rectal palpation and the case history. The animals were divided into four equal groups (No.=24). The first Group were given 3000 I.u. eCG i.m. (Folligon, Intervet International, B.V. Boxmeer, Holland), The second Group were treated with 0.5 mg GnRH i.m. (Fertagel, Intervet International, B.V. Boxmeer, Holland), The third Group were administered manual massage to ovaries and uterus once weekly per rectum for three times. The fourth Group were artificially inseminated post treatment after signs of oestrus appeared on the animals. Chi- square test were used for statistical analysis.

Results and Discussion

The effect of different methods (hormonal and manual massage) of treatments are shown in table 1. Out of 24 cows given 3000 i.u. eCG, 20 cows (83.3 %) showed a positive response to treatment and the sign of the oestrus appeared. Similar observations have been reported by several workers (3,5,6, 7). This might be due to fact that eCG (formerly PMSG) was the most potent gonadotrophic drug that is available for use in cattle. It stimulates ovarian activity and can induce follicular growth, maturation and secrete oestradiol- 17B (E2) and caused ovulatory LH surge after treatment (3,6,7). Approximately 16.7% (4/24) of the cows do not response following eCG treatment. This might be attributed to unresponsiveness of the ovaries to the action of eCG due to severe nutritional deficiency (8). Of the 24 cows classified as inactive ovaries and treated with GnRH, 12/24 (50%) showed response to the treatments. This findings agreed with observations of other workers (4). It has been suggested that systemic administration of GnRH causes a rapid increase in plasma LH and FSH levels in cows (9,10,11,12) which in turn stimulate follicular development and sign of oestrus appeared (7,13). Negative response noticed in 50% of the cases, might be attributed to unresponsiveness of anterior pituitary to the action of GnRH to secrete LH and FSH (6,14). Concerning manual massage to the ovaries and uterus, 14 animals showed a sign of oestrus (58.3%). This results were similar to those reported by (15, 16) in cows. This might be due to manual massage causes a changes in the blood circulations of the ovaries or stimulate the autonomic nervous system (17). The mechanism of manual massage effects is still unknown (18). It was also explained that the response might be due to stimulation of some intrinsic ovarian factor and circulatory changes in the ovaries (15).

It was concluded from this study that inactive ovaries could be treated with eCG canlsied with manual massage of the ovaries and uterus.

Table (1) The responses of Inactive ovaries to different methods of treatment

Group treatments	No. of animals	Response	Efficiency
GnRH (0.5 mg i.m)	24	12	50% a
eCG (3000 i.u. i.m.)	24	20	83.3% b
Manual massage	24	14	58.3% c
Distill water	24	2	8.3% d

*There was a significant difference (P <0.01) between different deters.

References

1. Zulu, V. C.; Nakaa, T.; Yamada, K.; Moriyoshi, M.; Nakada, K. & Sawamukai, Y. (2000). Clinical Response of inactive ovaries in Dairy cattle after PRTD Treatment. *J. Rep. Dev.*, 46.(6):415-422.
2. Noakes, D. H. (1996). Functional forms of infertility. In: Arthur, G. H., Noakes, D. E., Pearson, H. and Parkinson, T. J. (eds). *Veterinary Reproduction and Obstetrics*. London, Philadelphia, Toronto, Sydney, Tokyo, W. B. Saunders Company Ltd. PP. 356-371.
3. Majeed, A. F. & Sadik, H. L. (1997). Treatments of inactive ovaries in cattle. *The First SCI., Conf, Agr. Coll.* 7-8 April.
4. Majeed, A. F. & Taha, M. B. (1998). Clinical uses of GnRH in Bovine Reproduction. *The 2nd SCI. Confer., Agri. Coll.* 30-31 April.
5. Peters, A. R. & Laming, G. E. (1986). Regulation of Ovarian function in the Postpartum Cow: An endocrine model. *Vet. Rec.*, 118:236-39.
6. Kamomae, H. (1990). Therapical and physiopathological study on ovarian disorders in Cattle. *Jap. J. Anim. Reprod.*, 36:11-22.
7. Noakes, D. E.; Parkinson, T. J. & England, G. C. W. (2008). *Arthur's veterinary Reproduction and Obstetrics*, W. B. Saunders Co. Ltd.
8. Roberts, S. J. (1986). *Veterinary Obstetrics and Genital Disease*. 3rd E D. Vermant published By author, Edwards Brothers U. S. A.
9. Zaied, A. A.; Garverick, H. A.; Biershwal, C. J.; Kimore, R. G.; Youngquist, R. S. & Sharp, A. T. (1980). Effect of Ovarian activity and endogenous reproductive hormones on GnRH induced ovarian Cycles in Postpartum dairy cows. *J. Anim. Sci.*, 508-513.
10. Leslie, K. E. (1983). The effect of GnRH administration in early Postpartum dairy cows on hormone concentration, ovarian activity and reproductive performance: A review. *Can. Vet. J.*, 24:116-122.
11. Hafez, B. & Hafez, E. S. E. (2000). *Reproduction in farm animals*. 7thed., Lippincott Williams and Wilkins, Awolter Kluwer Co. Philadelphia, U.S.A.
12. Bearden, H. J.; Fuqay, J. W. & Willared, S. T. (2004). *Applied Animal Reproduction*. 6th ed. Pearson Prentice Hall, N.J., U.S.A.
13. Wettmann, R. P.; Beck, T. W.; Turan, E. J. & Hintz, R.L. (1982). Endocrine response of Postpartum anestrus beef cows to GnRH or PMSG. *Theriogenology*, 18:599-613.
14. Ball, P. J. H. & Peters, A. R. (2004). *Reproduction in cattle*. 3rd ed., Blackwell publishing, U.S.A.
15. Edwell, S. M.; Slawomir, Z. & Tomasz, J. (2004). Comparative study on the efficacy of Hormonal and non hormonal treatment methods in ovarian function affected Dairy cow. *Bull. Vet. Inst. Pulway.*, 48:265-267.
16. Rahawy, M. A. (2009). Treatment of anestrus in Buffalo cows by massaging the uterus and ovaries rectally. *Iraqi J. of Vet. Sci.*, 23(1): 23-25.
17. Tischner, M. Jr.; Niezgod, J. & Tischner, M. (1996). Study of the effect of manual Massage of ovaries on the reproductive activity of the mare. *Theriogenology*, 45:1457-1462.
18. Romariuk, J. (1973). Treatment of ovarian function in cows. *Medycyna Wet.*, 92:296-298.