

## Treatment of follicular cystic ovaries in dairy cattle

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### Abstract

The study was conducted on 48 Friesian-Holstein cows suffering from follicular cystic ovaries, presented in alfayha station Babel governorate, the age of the animals ranged from 5-7 years and the number of calving ranged from 3-5 times. Rectal palpation was the criteria of diagnosis. The animals were divided randomly into four equal groups (each group contain 12 cows). The first group treated with HCG (3000 I.U. I.M)., The second group were treated with 0.5 mg GnRH I.M. The third group were treated with GnRH (0.5 M.G I.M) plus 20 mg PGF<sub>2</sub>α I.M. The fourth group received placebo treatment (5 c.c Distil water) serve as a control group. All cows were subjected to rectal palpation 14 days after injection of the therapy to know the effect of different treatments. The results showed that the third group (GnRH+PGF<sub>2</sub>α) gave the best results (91.6%) followed by treatment with GnRH alone (75%) or treatment with HCG (50%). It was concluded from this study that GnRH plus PGF<sub>2</sub>α can be used treatment of follicular cystic ovaries with high success rate.

### Introduction

Follicular cystic ovaries (FCO) are an important cause of infertility in dairy cattle. It is still responsible for considerable economic loss in dairy cows (1) prolongation of the calving interval and treatment cost of FCO result in economic loss for the dairy farmer (2). They are defined as a follicular structure, with a diameter of at least 2.5 cm that persist more than ten days in the absence of luteal tissue (C.L) (3,4,5,6). It has been reported that deficiency in the release of

LH at estrous from pituitary glands. This may be a reflection of the failure of hypothalamic release of GnRH or might be due to excessive secretion of FSH (7,8,9). There are several methods used for treatments of the follicular cystic ovaries includes manual rupture and various hormonal regimens (1,3,10). The aim of this study was designed to compare the effect of different hormonal therapy such as HCG, GnRH alone and GnRH with PGF<sub>2</sub>α in treatment of FCO in dairy cattle.

### Materials & methods

The study was carried out on 48 Friesian-Holstein cows suffering from follicular cystic ovaries presented in AL-FAYHA station. The age of the cows ranged from 5-7 years and the number of parturition was 3-5 times. Rectal palpation was criteria of diagnosis which includes, the presence of one or more of cyst of 2.5 cm in diameter in the one or both ovaries. The animals were divided randomly into four groups of equal numbers (n=12 cows). The first group were treated with human chorionic Gonadotropine (HCG) (3000 I.U. I.M); The second group were treated with 0.5 mg i.m of Gonadotropic releasing

hormone (GnRH); The third group were treated with 0.5 mg i.m of GnRH followed with 20 mg Prostaglandin F<sub>2</sub>α (PGF<sub>2</sub>α) after 9 days; The fourth group received placebo treatment (5 c.c Distil water) serve as a Control group. All cows were subjected to rectal palpation 14 days after injection of the therapy to know the effect of different treatments. The results were termed positive where the cyst regressed and negative where there was no change in shape and size of the cysts. The results were tabulated and subjected to statistical analysis using Chi-square test at 5% probability (11).

### Results & discussion

All the cows under the study had unilateral cysts, affecting the right ovary more (36/48-75%) than the left one (12/48-25%). The number of the cyst were varied

from one to three while the size of the cyst varied from 2.7 to 3.5 cm in diameter. Out of 36 cows treated with different hormonal therapy, 26 cows responded positively to

the treatment Schedules .Treatment with GnRH followed 9 days with PGF<sub>2</sub>α gave the best results (91.66%) followed by GnRH alone (75%), and HCG(50%).while the control group showed spontocows recovery in two cases (16.66%). There was a significant difference (P <0.05) between different hormonal treatments . The result obtained with GnRH plus PGF<sub>2</sub>α with high response agreed with observations of several authors(1,9). This might be due to

the effect of GnRH which may cause leutinization of the cyst or ovulation of the follicles (3,12,13).GnRH has also a small molecular weight which can be repeated without immune response as occasionally produced by exogenous LH or HCG (3).PGF<sub>2</sub>α injection have been used as a luteolytic agent which involute all the lutein tissue in the cystic ovarian structure (14,15)

Table-1: Showed the response to differentHormonal treatment of FCO

GROUP	TYPE OF TREATMENT	NO.OF TREATED ANIMAL	RESPONSE	EFFICACY%
I.	HCG 3000 i.u. i.m (1 <sup>st</sup> group)	12	6	50%*
II.	GnRH 0.5 mg i.m (2 <sup>nd</sup> group)	12	9	75%*
III.	GnRH 0.5 mg i.m+PGF <sub>2</sub> α20 mg i.m after 9 days(3 <sup>rd</sup> group)	12	11	91.66%*
IV.	Distil Water sc.c (Control group)	12	2	16.66%*

\*There was a significant difference(P<0.05) between different treatments.

The response to GnRH treatment agreed with other worker's (1,10,13).Cows not responded to GnRH treatment might be attributed to degeneration of theca and granulosa cell layers (14).Similar observation has been made by Majeed and Ali (13), Kesler and Garverick(3) and Garverick(1).The response obtained with HCG is is in conformation with the

previous reports (10,13,14). The low response to HCG treatment might be due to absence of uterine irritation which has been reported to improve the blood supply of the endometrium and thus enhanced its regeneration (16).From this study ,it was concluded that GnRH plus PGF<sub>2</sub>α can be used for treatment of follicular cystic ovary with high success rate.)

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## علاج تكيس المبايض الجريبي في الأبقار الحلوب الخلاصة

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اجريت الدراسة على 48 بقرة من سلالة الفريزيان- هوليشتاين تواجدت في محطة الفيحاء التابعة لمحافظة بابل. تراوحت أعمار الأبقار بين 5-7 سنوات وعدد الولادات من 3-5 ولادات. شخّصت حالات تكيس المبايض عن طريق الجس عن طريق المستقيم. قسمت الأبقار عشوائيا الى اربع مجاميع متساوية (كل مجموعة 12 بقرة). عولجت المجموعة الاولى بحقنها بالعضل بمحرض القند المشيمي (HCG) (3000وحدة دولية) ,وعولجت المجموعة الثانية بحقنها بالعضل بمحرر محفزات القند (GnRH) (0.5 ملغم) ,وعولجت المجموعة الثالثة بحقنها (GnRH) (0.5 ملغم بالعضل) مع البيروستوكلاندين (PGF<sub>2</sub>α) (20 ملغم بالعضل) , أما المجموعة الرابعة فأعطيت 5 مل من الماء المقطر بالعضل وجعلت مجموعة سيطرة. أظهرت النتائج تفوق المجموعة الثالثة 91.66% عند مقارنتها مع المجموعة الأولى والثانية ومجموعة السيطرة لوحظ وجود فرق معنوي (>0.5 %) بين المجاميع المعالجة ومجموعة السيطرة. وقد أستنتج من الدراسة إمكانية استخدام الـGnRH وPGF<sub>2</sub>α في معالجة تكيس المبايض الجريبي في أبقار الحلوب.