



## Comparative Study for The Treatment of Inactive Ovary in Local Iraqi Breed Cow by Using Massage Method of The Ovaries and GnRH

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### ABSTRACT

This study was conducted on 40 cows suffering from inactive ovaries brought to the Teaching Veterinary clinic of College of Veterinary, University of Mosul. The inactive ovary was diagnosed in 40 cows depending on the case's date and general examination by rectal palpation to determine the ovarian size and the existence of certain ovarian structures and check the uterine horns and body. The animals were divided following the identification of the affected animals with inactive ovaries, into two groups, each group composed of 20 cows. The animals in the first group were treated with GnRH hormone at a dose of 0.5 mg. In contrast, animals in the second group were treated by the ovaries' manual massage method via rectal palpation. The study findings clarified that the estrous response ratio amounts to 50% in the first group and 60% in the second group. Statistically, there were no differences in response ratio between the two groups in relation to the response.

**Keywords:** Inactive ovary, GnRH, massage method, rectal palpation, estrous.

### Original Article:

DOI:<https://dx.doi.org/10.21608/javs.2021.140074>

**Received :**21 November, 2020.

**Accepted :**28 December, 2020.

**Published in** January, 2021.

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*J. Appl. Vet. Sci., 6(1): 18 – 20 .*

### INTRODUCTION

A complete absence of ovarian activity characterizes inactive ovaries or true anestrus. The ovaries are calm, smooth without any functional structures on board (surface) and small by rectum palpation or **ultrasonography** (Ribadu *et al.*, 1994; Zulu *et al.*, 2000; Abraham, 2017). Inactive ovaries cause large economic loss when post parturient period to the first estrous becomes long (Ahmed *et al.*, 2010). Cows production depends especially on reproduction and its often measured by the number of births for each animal in a determined period (Monget and Monniaux, 1995).

One of the important causes of depression of natural ovarian activities is impairment release or insufficient hormonal production of GnRH to grow and follicular development or it might because of no ovarian response to GnRH (Noakes, 1996; Abraham, 2017), or hormonal imbalance between (LH) and (FSH) (Jainudeen and Hafez, 2000). Some factors also help inactive ovaries occurring like species, weather, management, nutrition insufficiency,

especially lactation; it's one of the factors that cause true estrus (Singh, 2000; Abraham, 2017).

Inactive ovaries in lactation cows cause the increase of prolactin hormone, which depresses GnRH secretion (Arthur *et al.*, 1989; Abraham, 2017). Many methods have been used for treating inactive ovaries, such as hormonal, like injecting GnRH and PMSG in pregnant mares (Mansoor *et al.*, 2011), and progesterone hormone (Mohammed, 1999; Al-Nuaimi *et al.*, 2020). The un hormonal methods represent by adding mineral salts, vitamin and manual massage method of the ovaries through rectum used as a method for treating inactive ovaries in cows (Mansoor *et al.*, 2011). Therefore this study is designed to aim to almanac and comparison between manual massage method of the ovaries and GnRH adding method as a treatment for inactive ovaries in local Iraqi cows.

### MATERIALS AND METHODS

The study was conducted on 40 local cows suffering from true inactive ovaries brought to the veterinary teaching clinic, Veterinary College, Mosul University. These cows had at least one parturition

three months ago. All cows were fed the same regular ration. The inactive ovary diagnosis was based on the case history and general examination of ovaries, uterine horns, uterine body and cervix by rectal palpation. Cows were divided into two groups. Each group consisted of twenty cows. The first group of cows was treated by injecting a single dose of 0.5 mg of GnRH intramuscularly. The second group's cows were treated manually soft massage, about 4-5 times at the same time for both ovaries through rectal palpation.

**Statistical analysis**

Statistical analysis using the Fisher exact test was used to evaluate the response results to estrus treatment and appearance in cows suffering from inactive ovaries.

**RESULTS**

Results of the study showed that using GnRH in cows suffering from inactive ovary led to estrus appearance in 10 cows of 20 cows with a response rate of 50% While the cows in the second group were treated manually by massage led to estrus appearance in 12 cows of 20 cows and response rate 60%. There were no significant differences in ratio response of treatment between the two groups.

Table 1: appearing response of treated Iraqi cows suffering from inactive ovaries by two methods.

Therapeutic groups	No.of treated cows	No. of cows responded to treatment	% of response to treatment and appearance of estrus
First group GnRH	20	10	50% <sup>a</sup>
Second group Ovary massage	20	12	60% <sup>a</sup>

a: means there is no significant difference at the same column

**DISCUSSION**

An inactive ovary results in high economic loss through a long period between two parturitions and the first estrous cycle (Ahmed *et al.*, 2010). Production of cows depends largely on reproduction efficiency and this is often measured by the number of born for each animal in determined time (Monget and Monniaux, 1995). The results of our study showed that using a single dose of GnRH for the treatment of local cows suffering from inactive ovaries resulted in ratio

response in estrous appearance (50%), and this was in agreement with results reported by (Rahawy, 2003; Mansoor *et al.*, 2011) who emphasized that injection of GnRH led to FSH and LH release which enhance the ovary activities by stimulating the growth of ovarian follicles (Noakes *et al.*,2008). While the cause of this method's negative results could be attributed to the lack of the response of the cranial lobe of the pituitary gland to GnRH (Ball and Peters, 2004).

Our current results, represented by estrous appearance 60% following the activation of the inactive ovary of cows in the second group by manual massage, were agreed with (Edwell *et al.*, 2004; Rahawy, 2009). The manual massages increase the ovarian blood supply or stimulate the nervous system (Tischner *et al.*,1996) spontaneously. The mechanism of manual massage is not exactly known yet, as was referred by (Romaniuk, 1973), who thought that the response might be due to activation of some internal factors in the ovary..

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**How to cite this article:**

**Elias K. Hussein and Mohammed Yaurb, 2021.** Comparative Study For The Treatment Of Inactive Ovary In Local Iraqi Breed Cow By Using Massage Method Of The Ovaries And GnRH. *Journal of Applied Veterinary Sciences*, 6(1): 18 – 20.

DOI: <https://dx.doi.org/10.21608/javs.2021.140074>