

## **STUDY THE EFFECT OF MELISSA HERB ON PROLACTIN LEVELS IN RABBIT FEMALES AFTER PARTURITION**

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### **ABSTRACT**

The study included 30 pregnant female rabbits , the rabbits divided into three groups: the first group (10 rabbits) given liquid solution of Melissa in dose (2.5 ml liquid solution of 0.25 gm of Melissa) daily for one month. Second group: (10 rabbits) given liquid solution of Bromocriptine in dose (0.1 mg) daily for one month. Third group: (10 rabbits) as control. Prolactin hormone measured in these three groups at 7,14,21 and 28 days from parturition and within administration period. The results revealed obvious decrease in prolactin hormone level (less than 0.5 nanogram) in newly parturition rabbits after third week from administration in first group which administrated with Melissa in a nearly result to second group which treated with Bromocriptine which decrease prolactin hormone level after second week from treatment compared with control group which persist prolactin hormone in high level for first month from parturition.

### **INTRODUCTION**

Melissa synonymes are Balm, balm mint, bee balm, blue balm, Citra, citronellae, citronmelisse, common balm, cure-all, dropsy plant, English balm, folia citronellae, folia melissaecitratae, garden balm, gastrovegetalin, hjertensfryd, honey plant, kneippmelissepflanzensaft, Labiatae/Lamiaceae (family), lemon melissa, lomaherpan, melissa, *Melissa officinalis*, melissae, melissae folium (1).

Many active chemical material present in Melissa herb like hydroxycinnamic acid derivatives, particularly rosmarinic acid, caffeic acids, chlorogenic acid, and metrilic acid (2, 3).

Melissa herb used to treated many pathological and non-pathological cases such as : Antiviral effects (4),antibacterial/antifungal effects (5,6),antioxidant effects (2,7,8,9),antiprotozoal effects (6), antithrombotic effects (5),anti-thyroid effects (10),spasmolytic effects (11),sedative effects (12),anti-inflammatory effects (10), cardiovascular effects (13),emmenagogic effects (10)and in addition to its effect on fertility rates in females and males . And regulate sexual hormones level and increase sperm activity, and treated menstrual problem, by stimulates estrogen secretion and reduces abnormally heavy blood loss during menopause (14).

Infertility and estrus cycle disturbances considered as a common cases that occur in female during sexual live .One of the important cases is infertility which result from abnormal increase in prolactin hormone level during lactation period lead to decrease FSH and LH concentration directly leading to inactive ovaries and not formation follicles and corpus luteum as well as obvious decrease in oestrogen and progesterone hormones levels (15) . This case occur normally after parturition when prolactin hormone level increase in first week after parturition for milk formation ,During this period estrus cycle normally stopped , resulted from prolactin hormone secretion from anterior pituitary instead of FSH and LH (16) . Persistence of this normal period for limited period depending on animal species , after that prolactin secreted as well as FSH and LH which produce normal sexual cycles despite milk formation and persistence of lactation period (16) .

Studies indicated most infertility cases which result from abnormal increase of prolactin hormone level out the lactation period can be treated successfully by dopamine agonist like Bromocriptine and Metergoline drug which act to prevent secretion of prolactin stimulating hormone from hypothalamus lead to gradually increase in FSH and LH concentration , and female return to breeding (17) . Studies referred to the high number of females that treated with dopamine agonist like Bromocriptine have severe side effects persists along treated period which includes : nausea , headache , hypotension , diarrhea , peripheral convulsion , gastrointestinal bleeding , nose congestion as well as nervous signs which occur in treated cases (15) . In latest years , scientific researchers focusing on study the material that present in medical herbs as try to treated many pathological cases and these studies succeeded by used plants extracts and its active materials in regulate hormones levels and treated hormonal disturbances in many infertility cases in males and females . For that this study premeditate or designed to study effect of liquid extract of Melissa herb on

prolactin hormone level in rabbits after parturition as a drug instead of Bromocriptine drug which use commonly to decrease prolactin hormone in females which suffering from infertility or esterus cycle disturbances resulting from increase prolactin hormone level .

## **MATERIALS AND METHODS**

### **1- Prepare liquid solution of Melissa:**

Melissa was bought from the local market and taking 5 gm from brayed Melissa and boiled with (50 ml) of distilled water and after cooling drench every animal with(2.5 ml) from liquid solution (aqueous extract ) which equalizes (0.25 gm) from brayed Melissa.

### **2- Prepare liquid solution of Bromocriptine:**

We taking Bromocriptine drug at pills form in concentration (5mg) and soluble in (50 ml) of distilled water and then drench every animal with (1 ml) of liquid solution which equalizes (0.1mg) from Bromocriptine .

### **3- Experimental animals:**

We used 30 rabbit females in the last period of pregnancy, the animal divided into three groups each group contain 10 rabbits and after parturition directly we measured prolactin hormone level and then drench the first group with liquid solution of Melissa in dose (2.5 ml) liquid solution of (0.25 gm) from Melissa daily for month .While the second group drench liquid solution of Bromocriptine in dose (0.1 mg) daily for month. The third group considered as control. During the experiment prolactin hormone levels measured in three groups of animals in day 7,14,21 and 28 from drench after taking (2-4 ml) blood directly from the heart and after separated the serum, measured the prolactin hormone level.

### **4- Measuring prolactin hormone level:**

After blood collection directly from the heart , the serum separated from blood by centrifugation, then serum taking for measure prolactin hormone level by Minividus System by using necessary kit for prolactin hormone which produced from French Immunotech Company. After obtaining the results of prolactin hormone level of all

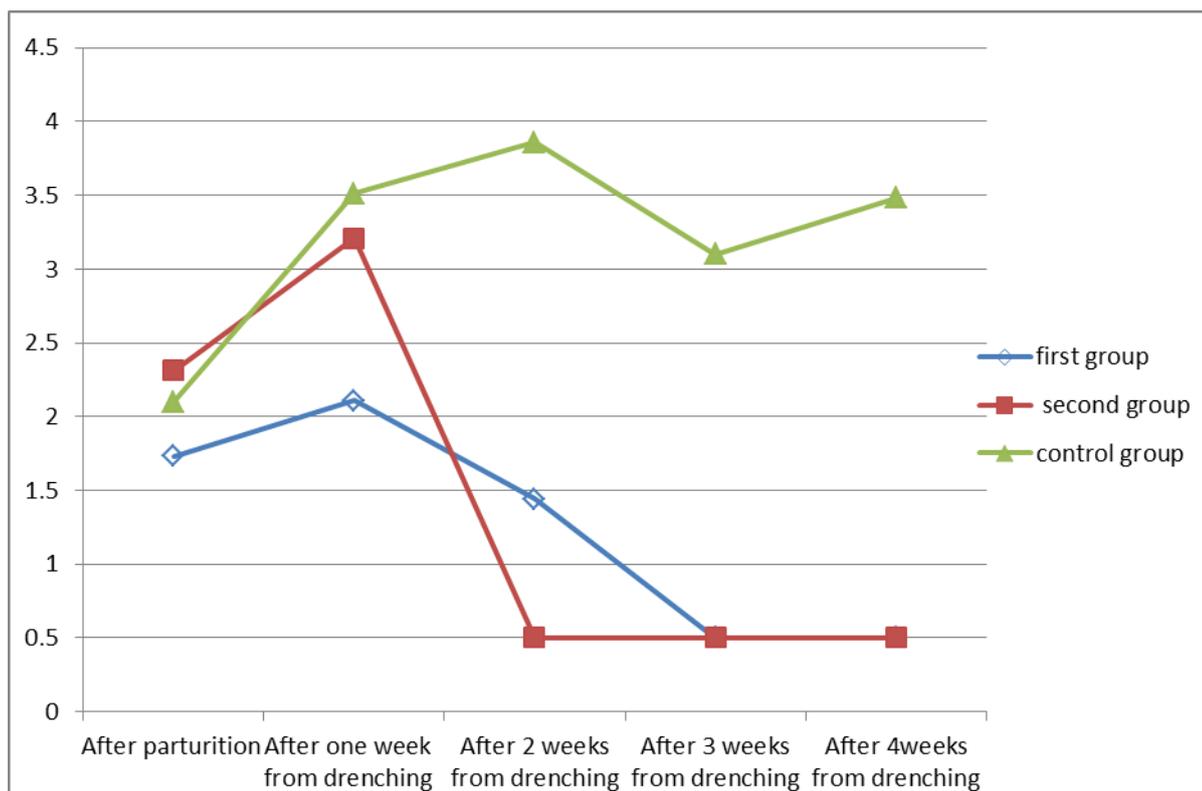
groups its compared with results of first and second group compared with control group.

## RESULTS AND DISCUSSION

The results revealed no decrease in prolactin hormone level in the first group which drench liquid solution of Melissa in first and second week from drench after parturition compared with second group which drench with liquid solution of Bromocriptine drug which appear obvious decrease in second week from drench compared with control group which persist prolactin hormone in high level (table 1 and plane 1). Whereas results showed that occurrence extremely obvious decrease in prolactin hormone level in first group after third week from drench which persist in decrease for fourth week compared with control group which appear high level of prolactin hormone for fourth week in experiment (table 1 and plane 1).

**Table (1)** : Show prolactin hormone level (ng/ml) during experimental weeks in three groups.

Experimental animals	Number	Prolactin hormone level rate (ng/ml)				
		After parturition	After one week from drenching	After 4weeks from drenching	After 3 weeks from drenching	After 2 weeks from drenching
first group (drenching with Melissa herb)	1.73	2.11	2.11	1.44	<0.5	<0.5
Second group (drenching with Bromocriptine)	2..31	3.21	3.21	<0.5	<0.5	<0.5
Control group	2.10	3.51	3.51	3.86	3.10	3.48



**Plane (1) :** Prolactin hormone levels ng/ml during experimental weeks in three groups

The results showed as results of (14) which refer to Melissa herb have the ability to regulate sexual hormones after long period of treatment , most common herbs treatment take time to give the positive results which come conformity with most researchers in medical herb treatments that late in occurrence of positive results compared with chemical drugs and results as coming to results of (17) which refer to Bromocriptine drug competency in decrease prolactin hormone level in short period from beginning treatment . Persistence of high prolactin hormone level in control group come conformity with all studies , as prolactin hormone is responsible hormone for milk production in most animals specially after parturition (16) .

دراسة استخدام عشبة المليسا على نسبة هرمون البرولاكتين في  
الأرانب الوالدة حديثا

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## الخلاصة

شملت الدراسة 30 أنثى أرنب في الفترة الأخيرة من الحمل تم فيها قياس مستوى هرمون البرولاكتين بعد الولادة مباشرة ، بعدها تم تقسيم الأرانب إلى ثلاث مجاميع . شملت المجموعة الأولى 10 أرانب تم تجريعها بالمحلول المائي لعشبة المليسا وبجرعة ( 2.5 مل محلول مائي لـ 0.25 غم من العشبة ) يوميا ولمدة شهر كامل . في حين ضمت المجموعة الثانية 10 أرانب تم تجريعها بالمحلول المائي لعلاج الـ Bromocriptine وبجرعة ( 0.1 ملغم ) يوميا ولمدة شهر كامل. وشملت المجموعة الثالثة 10 أرانب كسيطرة . تم قياس مستوى هرمون البرولاكتين في المجاميع الثلاث في اليوم 7، 14، 21 و 28 يوم من الولادة وطيلة فترة التجريع . أظهرت النتائج انخفاضا ملحوظا في مستوى هرمون البرولاكتين (اقل من 0.5 نانو غرام ) في الأرانب الوالدة حديثا بعد الأسبوع الثالث من التجريع في المجموعة الأولى و الجرعة بعشبة المليسا وبنتيجة متقاربة للمجموعة الثانية والمعالجة بعلاج الـ Bromocriptine والتي انخفض فيها مستوى هرمون البرولاكتين بعد الأسبوع الثاني من العلاج مقارنة بالسيطرة والتي استمر فيها هرمون البرولاكتين بالمستوى العالي ولغاية الشهر الأول من الولادة.

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