

## Cabergoline (Dostinex) Effect on Weight Ovarian Function

Rawa Jaafar Kadhim Al-Ameri\*

Al-Dora Primary Healthcare Center, Al-Karkh Health Directorate, Republic of Iraq

\*Corresponding author: Rawa Jaafar Kadhim Al-Ameri, Al-Dora Primary Healthcare Center, Al-Karkh Health Directorate, Republic of Iraq, Tel: 9647813834152; E-mail: dr\_rj1983@yahoo.com

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### Abstract

Cabergoline's common brand name (Dostinex) is a long-acting dopamine receptor agonist, blocks prolactin secretion from the pituitary gland. It is used in Inhibition of physiological lactation, hyperprolactinaemia-associated disorders as polycystic ovarian syndrome, pituitary adenoma, and in Parkinson's disease; adjunct to levodopa treatment in Parkinson's disease. Common side effects of cabergoline; nausea, stomach upset, vomiting, constipation, heartburn, dizziness, tiredness, numbness, burning, and tingling in the hands, arms, legs, or feet.

This report of two cases, take cabergoline showed a reduction in weight, resuming steady ovulation and regular menstruation after cabergoline treatment, with a possible side effect that these two cases developed follicular cyst following cabergoline treatment.

**Keywords:** Cabergoline; Polycystic ovarian syndrome; Parkinson's disease

### Introduction

Cabergoline; his common brand name (Dostinex) is a long-acting dopamine receptor agonist, blocks prolactin secretion from the pituitary gland. Used for treatment of hyperprolactinemia [1,2]. It is available as tab of 0.5 mg, it is usually given in a dose 0.25 mg twice a week, maximum dose 1 mg [1]. It is used in Inhibition of physiological lactation, hyperprolactinaemia-associated disorders as polycystic ovarian syndrome, pituitary adenoma, and in Parkinson's disease; adjunct to levodopa treatment in Parkinson's disease [1,3].

Common side effects of cabergoline; nausea, stomach upset, vomiting, constipation, heartburn, dizziness, tiredness, numbness, burning, and tingling in the hands, arms, legs, or feet [3]. Prolactin is a hormone secreted from pituitary gland. 2 normally, prolactin increase in pregnancy by 10 to 20 times to form breast milk. In breastfeeding, prolactin levels may also return to normal levels even if still breastfeed after months of breastfeeding. Prolactin can be detected in the serum of non-pregnant women and in men in lower levels. A pituitary tumor can increase prolactin while damaged pituitary gland can lower prolactin. Increased serum prolactin could lead to amenorrhea or difficulty in getting pregnant, sometimes this could be associated with abnormal nipple discharge [4]. Prolactin can be detected at any day of menstrual cycle. It varies throughout the day, it is highest during sleeping and particularly in the morning, strenuous exercise, lack of sleep, and some foods and medications as antidepressants [5].

### Case 1

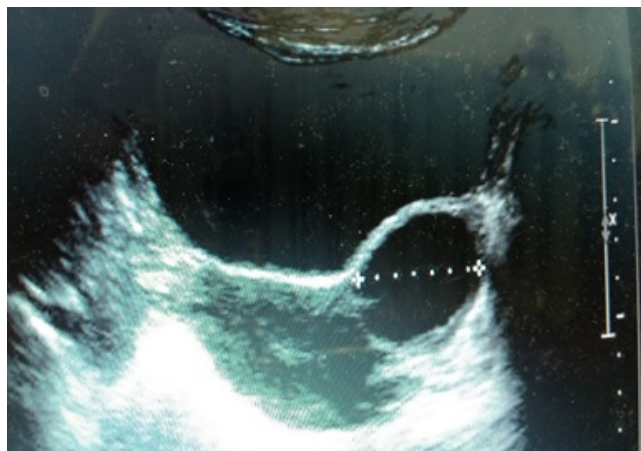
A 29 years female asking advice to get pregnant, she gets birth a baby before 15 months, breasts feeding for one year and weaning the baby after that. Now, she intended to get pregnant again. She had a regular menstrual cycle, her weight 83.7 kg, BMI 25.2. She is a health worker with moderate physical activity. She is not following any diet

regime nor taking any medication to lose weight. Ultrasound showed normal ovary with mature follicle 23 mm at 13<sup>th</sup> day of the cycle, ruptured at the 14<sup>th</sup> day, serum prolactin 24 ng/ml (normal serum prolactin 4-23 ng/ml in non-pregnant women).4 Normal LH/FSH ratio, normal serum androgen. She had the following investigation:

Hormones	Values
LH	17.4 mIU/ml Normal value(Follicular phase<7 Ovulatory phase>20 mIU/ml.5
FSH	11.6 mIU/ml Normal value 3-20 mIU/ml
S-Prolactin	24 ng/ml Normal value(4-23 ng/ml)
Total Androgen	7.2 ng/dl Normal value(6-86 ng/dl)
S-Estradiol	145.6 pg/ml Normal value(Follicular phase 30-120 Ovulatory phase 130-370 Luteal phase 70-250 pg/ml)
S-Progesteron	11.3 ng/ml Normal value(Follicular phase 0.2-1.4 Luteal phase 4-25 ng/ml)

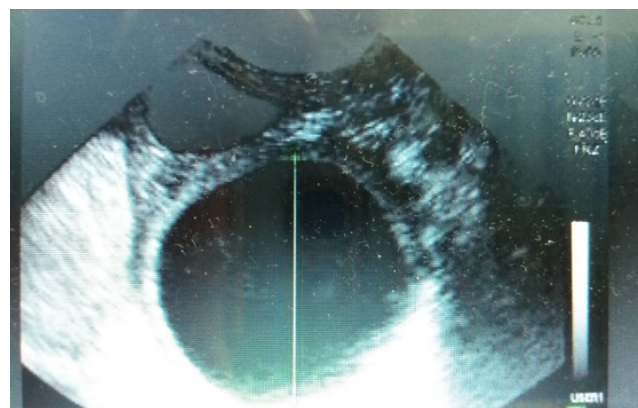
**Table 1:** Hormonal assay.

Giving cabergoline 0.25 mg twice a week. After one month the patient presented with lower abdominal pain, by clinical examination there is mild lower abdominal tenderness, by ultrasound, there is simple follicular cyst 33 mm, serum prolactin 17.2 ng/ml, patient weight 80 kg. With follow-up by ultrasound, the cyst resolve smoothly at fifth menstrual day.



**Figure 1:** Clinical examination there is mild lower abdominal tenderness by ultrasound.

there is mild lower abdominal tenderness, by ultrasound, there is simple follicular cyst 38 mm, serum prolactin 19.2 ng/ml, patient weight 85.3 kg with follow-up by ultrasound, the cyst resolve smoothly at fifth menstrual day. The patient resume steady ovulation and regular menstruation after cabergoline treatment.



**Figure 2:** Follow-up by ultrasound, the cyst resolve smoothly at fifth menstrual day.

### Case 2

A 33 years female asking advice to get pregnant, she gets birth a baby before 2 years, breasts feeding for one year and weaning the baby after that. Now, she intended to get pregnant again. She had a history of irregular ovulation and irregular menstrual cycle, her weight 90 kg, BMI 26.8. She is a housewife with mild physical activity. She is not following any diet regime nor taking any medication to lose weight. Ultrasound showed normal ovary with mature follicle 25 mm at 15<sup>th</sup> day of the cycle, ruptured at the 16<sup>th</sup> day, serum prolactin 32 ng/ml (normal serum prolactin 4-23 ng/ml) [4]. She had the following investigation:

Hormones	Values
LH	29.5 mIU/ml Normal value(Follicular phase<7 Ovulatory phase>20 mIU/ml)
FSH	14.6 mIU/ml Normal value 3-20 mIU/ml
S. Prolactine	32 ng/ml Normal value(4-23 ng/ml)
Total Androgen	6.7 ng/dl Normal value(6-86 ng/dl)
S. Estradiol	158.1 pg/ml Normal value(Follicular phase 30-120 Ovulatory phase 130-370 Luteal phase 70-250 pg/ml)5
S. Progesteron	13.3 ng/ml Normal value(Follicular phase 0.2-1.4 Luteal phase 4-25 ng/ml)

**Table 2:** Hormonal assay.

Giving cabergoline 0.25 mg twice a week. After two months the patient presented with lower abdominal pain, by clinical examination

### Discussion

Prolactin plays a role in fertility by inhibiting follicle stimulating hormone (FSH) and gonadotropin-releasing hormone (GnRH), which triggers ovulation and allow eggs to develop and mature. If prolactin elevated it will inhibit secretion of FSH and ovulation may be suppressed. This is why breastfeeding and any condition associated with high prolactin as polycystic ovarian syndrome or prolactinoma, usually will be difficult to get pregnant [5]. In the first case; the patient had difficulty to get pregnant even she had a normal menstrual cycle, normal ovulation by forming mature follicle at midcycle, she had no signs of polycystic ovarian syndrome, normal FSH/LH ratio, and normal serum androgen. She had slightly elevated serum prolactin and overweight with moderate physical activity. When she took cabergoline for one month she lost 3.7 kg of her weight. She had no history of diet regime nor weight loss medication.

In the second case; the patient had difficulty to get pregnant, she had a history of irregular ovulation and irregular menstrual cycle, she had mature follicle at midcycle at her visit, she had no signs of polycystic ovarian syndrome, normal FSH/LH ratio, and normal serum androgen. She had elevated serum prolactin and overweight with mild physical activity. When she took cabergoline for two months she lost 4.7 kg of her weight that means 2.35 kg in one month. She had no history of diet regime nor weight loss medications. This could pay attention to prolactin lowering drugs and their effect on weight. A study was done about the association of cabergoline with weight loss in a patient with Hyperprolactinemia [2]. These cases add to limited published experience on cabergoline and its effect on weight and require more studies. The patient resume steady ovulation and regular menstruation after cabergoline treatment, this is due to cabergoline effect in lowering prolactin that high prolactin may suppress ovulation and disturb menstrual cycle [6].

These two cases developed follicular cyst following cabergoline treatment, this might be occurred due to over or prolong treatment

when serum prolactin come to be below 23 ng/ml. This is unusual reported side effect although it is so common in clinics.

### **Conflict of Interest**

The authors have no conflicts of interest.

### **Ethical Approval**

Ethical approval is obtained.

### **Consent**

Consent is obtained.

### **References**

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