

Effect of polycystic ovarian syndrome on hirsutism

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الخلاصة:

دراسة أجريت على ١٠٠ مريضة مصابة بنمو الشعر الزائد، من هذه المريضات ٦٥% لديها متلازمة تكيس المبايض و ٣٥% لديها مبايض طبيعية. كذلك الدراسة شملت قياس مستوى هرمون التستوستيرون عند هذه النساء، النتائج أظهرت زيادة نسبة الهرمون عند النساء المصابات بمتلازمة تكيس المبايض لكن هذه الزيادة غير معنوية.

Abstract:

Study involve 100 women with hirsutism, from these women 65% presented with polycystic ovarian syndrome and 35% presented with normal ovaries. also measurement of testosterone hormone concentration in these women show that testosterone level is higher in women with polycystic ovary but this increment is non significant.

Introduction :

Hair:

Is one type of skin appendages lies in the dermis.

Types of hair:

1-Langue hair: Fine long hair covering the fetus but shed before birth.

2-Vellus hair: fine short hair covering most of body surface. It replace langue hair before birth.

3-Terminal hair: Long coarse hair seen in some areas of the body eg. Scalp, pubic area. Their growth is influenced by circulating androgen level. Vellus hair converted into terminal hair in hirsutism⁽¹⁾.

Hirsutism:

Is a common disorder affecting up to 8 % of women and it is defined as an excess of terminal hair growth in women in pattern more typical of men . Androgen dependent growth areas are affected which include upper lip , cheeks , chin , central chest , breast , lower abdomen and groin⁽²⁾. In women, androgen synthesis occur in adrenal and ovary . Testosterone is converted into dihydrotestosterone (which promotes androgen dependent hair growth) in the hair follicle and only sexual hair follicles contain the necessary enzymatic machinery for conversion of circulating androgens to dihydrotestosterone⁽³⁾ . Because testosterone is normally bound to carrier molecule and the active form is the free form so that the level of free testosterone correlates with hirsutism⁽⁴⁾. 50 % of women with hirsutism have a positive family history. The age of onset of hirsutism depends on the etiology. . Most forms of non neoplastic hirsutism become evident around puberty⁽⁵⁾.

Causes of hirsutism:

Hirsutism may result from excess secretion of testosterone either from ovary or from adrenal gland. The excessive secretion may be functional excess or rarely from neoplastic process .

Ovarian causes include polycystic ovary syndrome (POS) and variety of ovarian tumors both benign and malignant⁽⁶⁾ .

Polycystic ovary syndrome is the most common cause of hirsutism . The women affected by this condition have a range of symptoms (that occur singly or in combination) these include : menstrual cycle disturbances , obesity , hirsutism , acne and infertility⁽⁷⁾. The skin manifestations associated with PCOS are possibly more common than either menstrual cycle irregularity, or obesity. . This may be due to an absolute increase in androgen level, or an alteration in ratio of hormone levels. A third

possibility is an exaggerated response of the skin to relative normal androgen levels. The end result of all three of these possibilities is the same and causing hirsutism⁽⁸⁾.

Adrenal causes include congenital adrenal hyperplasia and adrenal tumors such as adrenal adenoma and carcinoma .Pituitary causes include cushing syndrome , acromegaly and prolactin secreting adenoma .Other causes of hirsutism include exogenous intake of androgens , drugs such as minoxidil , diazoxide , corticosteroid and phenytoin , these cause generalized increase in hair growth not only hirsutism ⁽⁹⁾.

Material and method:

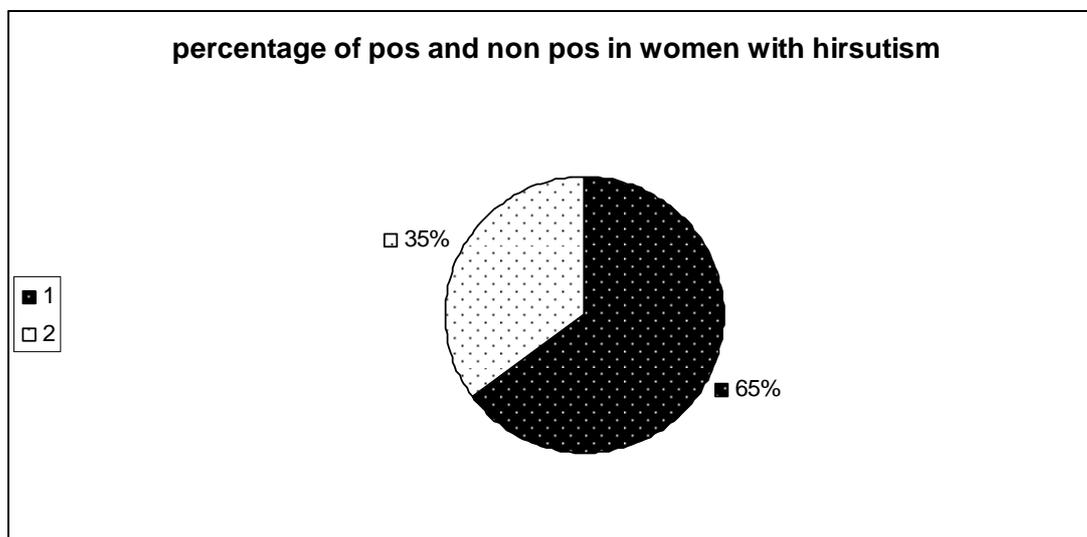
Evaluation of 100 women is done in dermatology department in Al-Sadder teaching hospital . These women presented with hirsutism . The age of these women range from 16-38 year , with different fertility and marital state . Their BMI is range from 18-27 Kg/M² . History is taken from each women about duration of hirsutism , menstrual history, other associated symptoms and any medical disease or drug use .Each women is subjected to physical examination and then pelvic ultrasound is done for detection of any ovarian abnormality . Measurement of testosterone level is done for each women .

Statistical study :

The data was reported as mean \pm standard deviation (SD) for each variable .Statistical analysis is done by using t–test , statistical significance was assumed $P \leq 0.05$.

Results:

Analysis of the data reveal that 65% of women with hirsutism are presented with polycystic ovary(POS) , while 35% have hirsutism with no POS , as in the following figure :



**Figure 1.Comparison of percentage of pos and non pos women with hirsutism.
Dark bar=pos , Light bar=non pos**

Also the result reveal that the level of testosterone is higher in women that have hirsutism and polycystic ovary than in women that have hirsutism and non polycystic ovary, but this increment did not reach significant level at $p \leq 0.05$ (because some women with hirsutism and non polycystic ovary presented also with high testosterone level), as in figure 2 :

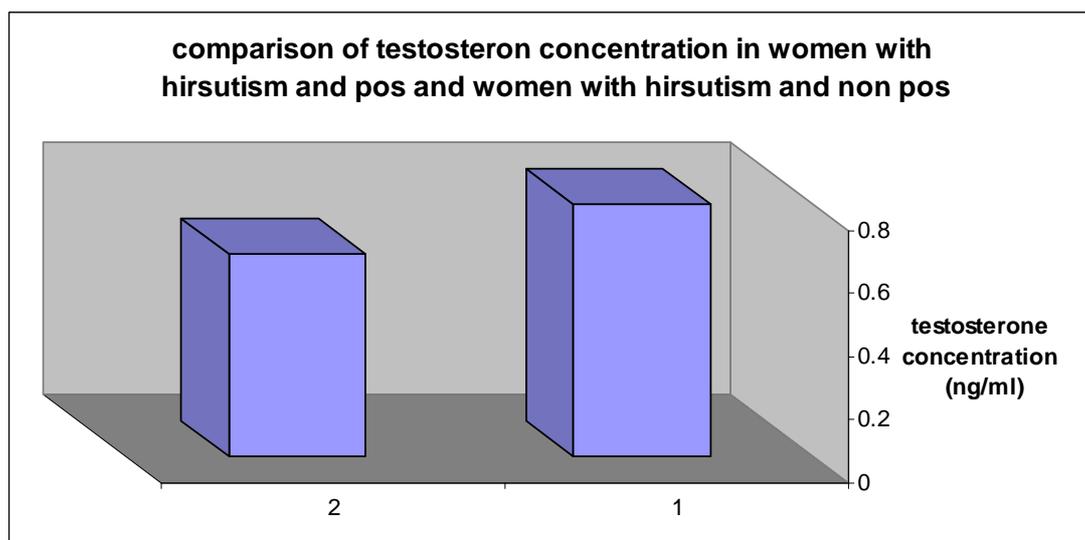


Figure 2. Comparison of testosterone concentration in women with hirsutism. 1= Testosterone con. in pos women with hirsutism . 2= Testosterone con. in non pos women with hirsutism.

Discussion :

The results of the research reveal that polycystic ovary was found in 65% of women with hirsutism, while Adam et al found that Polycystic ovaries were found in 92% of women with hirsutism⁽¹⁰⁾.

Family history is important, Venturoli et al found that 50 percent of women with hirsutism have a positive family history of the disorder. About 95 percent of these patients have PCOS⁽¹¹⁾.

The results of this research show that testosterone level is higher in women with hirsutism with polycystic ovary. Also Moghetti et al found that women with hirsutism and polycystic ovary have elevated testosterone concentration⁽¹²⁾.

The results of the research show that some patients with hirsutism and polycystic ovary have normal plasma androgen levels, and some women with hirsutism and non polycystic ovary have high level of testosterone, so that the increment in testosterone level is not significant. Also Hickman et al found that Hirsutism can occur in the presence of normal or near normal levels of serum testosterone⁽¹³⁾.

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