

HIRSUTISM IN PATIENTS WITH POLYCYSTIC OVARY SYNDROME IN POST-CONFLICT IRAQ

الشعرانية عند مريضات متلازمة المبيض متعدد الكيسات في العراق بعد الحرب

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ملخص البحث

هدف البحث: تعتبر متلازمة المبيض متعدد الكيسات PCOS الاضطراب الغدي الصماوي الأشيع عند النساء بسن الإنجاب. تترافق هذه الحالة مع الشعرانية التي تسبب حالة قلق شديد عند المريضات. إن الأبحاث المنشورة حول الشعرانية في متلازمة المبيض متعدد الكيسات في العراق قليلة، ولهذا تم إجراء هذه الدراسة.

طرق البحث: تم إجراء دراسة في الفترة بين 2 كانون الثاني وحتى 31 آب من عام 2013. تم جمع الحالات من عيادة العقم في مشفى بغداد التعليمي، حيث تم إجراء مقابلة مع كل مريضة مع ملء استبيان خاص بالدراسة تضمن المعلومات السكانية، وجود اضطرابات طمثية، عقم، قصة داء سكري، مع إجراء قياس لمحيط الخصر، تحري الشعرانية، حب الشباب، الحاصة الأندروجينية، كما تم إجراء فحص بالأموح فوق الصوتية مع تحديد مستويات الهرمونات LH، FSH، التستوستيرون، البرولاكتين ومستويات السكر الصيامية من سجل المريضات.

النتائج: لوحظ في العينة المدروسة وجود متلازمة المبيض متعدد الكيسات عند 83.5% من المريضات، تبين وجود شعرانية عند 66.4% منهن. لم تلاحظ فروقات هامة في العمر ومحيط الخصر بالنسبة لحالات وجود أو عدم وجود شعرانية ($p=0.5$ و 0.2 على الترتيب). لوحظ عدم وجود اختلافات هامة في قيم LH، FSH، النسبة LH/FSH البرولاكتين والسكر الصيامي عند وجود شعرانية (قيم p تعادل 0.7، 0.9، 0.2، 0.4 و 0.5 على الترتيب). أما التستوستيرون فقد ارتفعت مستوياته بشكل ملحوظ في حالات الشعرانية ($p=0.001$).
الاستنتاجات: لوحظ وجود انتشار عال للشعرانية في سياق متلازمة المبيض متعدد الكيسات.

ABSTRACT

Objective: Polycystic ovary syndrome (PCOS) is the most common endocrinopathy affecting women in the reproductive age. Hirsutism is commonly associated with PCOS and can be a very disturbing condition. Published articles on Hirsutism in PCOS in Iraq are scarce; therefore this work was carried out.

Methods: A total of 139 infertile women were included in this study for the period 2nd January to 31st August 2012. Cases were recruited from infertility clinic in Baghdad Teaching Hospital. An interview

was conducted with every selected women and a questionnaire was filled. The requested including was demographic data and PCOS, history of menstrual disturbances, infertility, history of DM and measurement of waist circumference, hirsutism, acne, and androgenic alopecia, ultrasound study and levels of LH, FSH, testosterone, prolactin and fasting blood sugar (FBS) were obtained from the patient's private record.

Results: Out of the studied sample, 83.5% had PCOS and out of them 66.4% were with hirsutism. No significant differences in age and waist circumference between those with and without hirsutism ($p=0.5$ and

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0.2, respectively). LH, FSH, LH/FSH ratio, prolactin and FBS were significantly differ with hirsutism ($p=0.7, 0.9, 0.2, 0.4$ and 0.5 , respectively). Testosterone was significantly elevated in hirsutism ($p=0.001$).

Conclusions: High prevalence of hirsutism among PCOS was noticed.

INTRODUCTION

Polycystic Ovary Syndrome (PCOS) is the most common endocrinopathy affecting women of reproductive age.¹ It is associated with metabolic changes and long term health consequences, which commence during the reproductive years, persist into the postmenopausal years and have their impact on quality of life, morbidity and mortality.^{2,3} Women with PCOS have a wide spectrum of presentation ranging from anovulation, menstrual disturbances and infertility to apparently regular ovulatory menstrual cycles, with varying degrees of signs and symptoms of hyperandrogenism (hirsutism, acne and androgenic alopecia) and polycystic ovarian morphology on pelvic ultrasonography.^{4,5}

Hirsutism (the appearance of excessive coarse terminal hairs in a pattern not normal in the female in the androgen sensitive sites of hair growth),⁶ is commonly associated with PCOS and can be a very disturbing condition. Hirsutism is recognized to cause profound distress in the affected women, due to cosmetic, psychosexual implication and complex management of hirsute women, in addition to pharmacological and/or cosmetic measures may require specific psychotherapy.⁷

Three groups established diagnostic criteria for PCOS: National Institute of Health/National Institute of Child Health and Human Disease (NIH/NICHD)⁸ in 1990 defined PCOS as chronic anovulation with clinical and/or biochemical hyperandrogenism with exclusion of other mimicking etiologies, European Society for Human Reproduction and Embryology/American Society for Reproductive Medicine (ESHRE/ASRM)⁹ at Rotterdam in 2003 proposed that the diagnosis of PCOS by two of three criteria: oligo and/or anovulation, clinical and/or biochemical hyperandrogenism and polycystic ovaries on ultrasound; other etiologies must

be excluded and most recently, Androgen Excess and PCOS Society (AE-PCOS)¹⁰ in 2009 emphasized that PCOS is a primarily a hyperandrogenic disorder and proposed revising definition to hyperandrogenism and ovarian dysfunction.

Published articles on PCOS and hirsutism in Iraq are scarce. Therefore, this study was carried out to throw a light on hirsutism among women with PCOS.

METHODS

A total of 139 infertile women were included in the study. They were recruited from infertility clinic in Baghdad teaching Hospital for the period from the 2nd of January to the 31th of August 2012.

An interview was conducted with every selected woman and a questionnaire was filled. The questionnaire included demographic data, personal and family history of DM, family history of PCOS among their first degree relatives (mothers and sisters), history of menstrual disturbances (oligomenorrhea, amenorrhea, menorrhagia, and polyamenorrhea), history of infertility (primary infertility and secondary infertility), measurement of waist circumference (minimum reading observed between costal margin and the pelvic brim at the level of the umbilicus),⁸ hirsutism (modified Ferriman – Gallawy (F.G) score), acne (comedones, papules, pustules),⁹⁻¹¹ and androgenic alopecia (male pattern baldness).

The laboratory findings (serum level of LH, FSH, testosterone, prolactin and fasting blood sugar) were obtained from the patient's private record.

Ultrasound study (a transabdominal pelvic ultrasound examination or transvaginal ultrasound) was done for all women at midcycle and randomly for amenorrhic ones. The diagnostic criteria of polycystic ovaries were the presence of 9 or more subcapsular cysts <10 mm in diameter with increase ovarian stroma and ovarian volume.¹²

Student's t test was applied to examine the differences in hormonal level (LH, FSH, testosterone and prolactin), fasting blood sugar (FBS) age and waist circumference

between women with and without hirsutism; also between PCOS with and without PCO at ultrasound. Chi square test was used to examine the association of hirsutism (dependent variable) with marital status, infertility, family history of DM and PCOS, PCO at ultrasound and menstrual irregularities (independent variables). P-value<0.05 was considered as significant.

RESULTS

Out of the studied total sample, 116 (83.5%) women had PCOS. From those with PCOS, 77 (66.4%) were with hirsutism. Hirsutism constituted 77/139 (55.4%) of infertile patients.

The age of women with and without hirsutism were 28.4±6.2 years and 28.9±6.4 years, respectively. No significant difference in age between those with and without hirsutism (t=0.5, d.f.=114, p=0.5).

Waist circumference was not significantly differ between women with hirsutism (100.2±15.4 cm) and women without hirsutism (96.4±14.3 cm) (t=1.2, d.f.=114, p=0.2).

Level of LH (7.2±4.4 mIU/ml) in PCOS with hirsutism was not significantly differ from that level of LH in PCOS without hirsutism (7.5±5.2 mIU/ml) (t=0.3, d.f.=114, p=0.7).

FSH was not significantly differ in PCOS with hirsutism (6.2±2.3 mIU/ml) and in PCOS without hirsutism (6.2±5.2 mIU/ml) (t=0.1, d.f.=114, p=0.9).

No significant difference in LH/FSH ratio was observed PCOS with and without hirsutism (1.3±0.8) and (1.5±1.1), respectively, (t=1.2, d.f.=114, p=0.2). Testosterone level was significantly higher in PCOS with (34.1±23.5 mIU/ml) and without hirsutism (3.4±8.3 mIU/ml) (t=6.3, d.f.=114, p=0.001).

No significant difference was noticed in prolactin between PCOS with (14.9±10.9 mIU/ml) and without hirsutism (12.8±6.2 mIU/ml) (t=0.9, d.f.=114, p=0.4).

FBS was almost similar in PCOS with and without hirsutism (92.6±17.3 mg/dl) and (95.5±7.9 mg/dl), respectively, (t=0.5, d.f.=114, p=0.5).

Variable	Hirsutism					
	Positive			Negative		
	No.	mean	SD	No.	mean	SD
Age	77	28.4	6.2	39	28.9	6.4
	t= 0.5, d.f.=114, p = 0.6					
Waist circumference	77	100.2	15.4	39	96.4	14.3
	t= 1.2, d.f.=114, p = 0.2					
LH	77	7.2	4.4	39	7.5	5.2
	t= 0.3, d.f.=114, p = 0.7					
FSH	77	6.2	2.3	39	6.2	5.2
	t= 0.1, d.f.=114, p = 0.9					
LH / FSH	77	1.3	0.8	39	1.5	1.1
	t= 1.2, d.f.=114, p = 0.2					
Testosterone	77	34.1	23.5	39	3.4	8.3
	t= 6.3, d.f.=114, p = 0.001					
Prolactin	77	14.9	10.9	39	12.8	6.2
	t= 0.9, d.f.=114, p = 0.4					
FBS	77	92.6	17.3	39	95.5	17.9
	t= 0.5, d.f.=114, p = 0.5					

Table 1. Distribution of age, waist circumference, FBS and hormonal levels among PCOS patients with and without hirsutism.

DISCUSSION

In this study PCOS constitutes 83.5% of the infertile women (i.e. PCOS is a Cause of infertility in 83.5%). This rate is higher than that reported in Iran (20%)¹³ and Bosnia (6%).¹⁴ This finding might be explained by increase in the prevalence of obesity in Iraq which was increased from 23.2% in 1997 to 39.1% in 2007¹⁵ and 61.1% in 2010.¹⁶ Weight gain is often precede of development of PCOS.¹⁷ The conditions of stress, lifestyle changes (westernization and modernization) and disrupted circadian rhythm with changes in diet, and gender role and aspiration since change of regime (2003) might be contributed to this finding. Similar finding reported in India.¹⁸

The study revealed that 83.5% of the studied infertile women were with PCOS. It is much higher than that reported in Kurdistan region, Iraq (33.1%)¹¹ used the same criteria for diagnosis. The difference might be attributed to the fact that this study was carried among Arabic women i.e. ethnic difference¹¹ might be contributed to this finding.

The finding that 55.4% of the studied infertile women had hirsutism is close to that reported previously in Baghdad (64.5%).¹²

In this study, hirsutism among women with PCOS was 66.4%. It is similar to that reported in Baghdad previously (64.5%).¹² Mediterranean women are more likely to complain from hirsutism.¹³

The observed rate of hirsutism (66.4%) is close to that reported in Thi Qar, Iraq, in a sample from infertility center (62.9%)¹⁴ using the same criteria for diagnosis of PCOS and hirsutism.

The rate of hirsutism in this study (66.4%) is lower than that reported in Baghdad among PCOS patients consulting clinic of dermatology (83.3%)¹⁵ diagnosed using the same criteria of this study. The difference might attributed to difference in samples. Patients consulting dermatological clinic means complaining of hirsutism and the studied sample in this study was from infertile clinic.

Recently in Iran, hirsutism was increased dramatically over the last decades and was attributed to psychological trauma of the eight years' war with Iraq (1980-1988).¹⁶

The observed figure of hirsutism (66.4%) was less than that reported in Palestine (100%).¹⁷ The explanation for this difference is the using on NIH/NICHD criteria in Palestine. The latter criteria regard hirsutism is a must to diagnose PCOS.

In PCOS, no significant differences in age between women with and without hirsutism. It is agreement with that in Iraq¹⁴ and Iran.⁴

This study showed that waist circumference in women with PCOS was 100.5 cm. Similar figures reported in Iraq.^{14,18,19}

LH value was 7.3 ± 4.7 mIU/ml. It is lower than that reported in Kurdistan region, Iraq (10.02 mIU/ml).¹¹ It was that normal LH might be based on a typical PCOS.^{12,15}

LH/FSH ratio was 1.4 ± 0.9 in women with PCOS. The characteristic increase in LH relative to FSH release was appreciated in diagnosis of PCOS. However, the pulsatile nature of their release might interfere with interpretation of a single test to LH and FSH. Alnakash et al¹² and Sharquie et al¹⁵ reported that absolute value of LH or LH/FSH would not be helpful in establishing the diagnosis of PCOS. The diagnostic criteria groups NIH/NICHD, ESHR/ASM and AE-PCOS⁸⁻¹⁰ does not include LH/FSH ratio in the diagnosis of PCOS.

The significant high level of testosterone in PCOS with hirsutism is in agreement with that of reported in Baghdad^{12,15} and in Basrah¹⁹.

No significant increased level in FBS PCOS with hirsutism than those without hirsutism might be explained by the fact that both groups were PCOS.

CONCLUSIONS

High prevalence of hirsutism among women with PCOS was observed.

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