

Epidemiological Study if Infertile PCOS Women Underwent ICSI and their Related Outcomes

Dr. Nada Yahya Awwad ^{*1};
Dr. Waleed Abidalkadir Mares ^{*2};
Dr. Rafal Abdullah Saleh ³

Abstract:

A prospective study carried out in Kirkuk city from February to October 2019, included 200 PCOS women who were enrolled attended Azadi Hospital to study the epidemiology the infertility of PCOS women underwent ICSI and their related outcomes. All women were subjected to the basic fertility work-up at the infertility center which consists of history taking, physical examination, ovulation detection, evaluation of tubal patency and uterine cavity. All couples subjected to a full history taking, complete general examination, complete gynecological examination and infertility workup including: husband's seminal fluid analysis, basal hormonal analysis, uterine cavity assessment by ultrasound and tubal patency evaluation by hystrosalpingogram. The females were divided into 2 groups each consists of 100 females. The control group did not receive any ovarian stimulation drugs (natural cycle). In cases group, ovulation induction programs were used were stimulated by Clomid + gonadotropin. The ovarian stimulation protocol was chosen for each patient according to her age, history of stimulation treatment in previous cycles if present, hormonal assay and ultrasound finding in the early follicular phase. The study showed that the higher number and percentage of infertile PCOS women 33% at age 20-29 years. The study demonstrated that, majority of patients PCOS women were belonged to urban area. The study demonstrated that, 75% of PCOS have irregular cycle and 65% more liable for PCOS have (5-7) days of menstrual flow. The study showed than majority of studied women haven't family history of PCOS (60%). The study showed that the highest mean of age were recorded among PCOS women who were pregnant compared with non-pregnant women (33.67 v.s 31.55 year) (P: > 0.05). The highest mean of BMI were recorded among non-pregnant women compared with pregnant women (26.55 v.s 23.45 kg/m²), the result was significant (P<0.01),

Keywords: PCOS ; Female infertility; Stimulation protocol; Clomid

^{*1 &2} Azadi Teaching Hospital /Kirkuk Health Directorate;

^{3*} Ministry of Health / Salah Al-Din directorate / Salah Al-Din Health hospital / raq

Introduction

Infertility in women is one of the most important problems that women suffer from during the period of childbearing between 15 to 45 years, as infertility is divided into stages, including primary sterility and secondary infertility, which represent the high or low level of hormones in women, as well as because of bacterial, viral and fungal infections, which leads to sterility Point ^(1,2). One of the most important causes of infertility is polycystic ovaries, so that polycystic ovaries are one of the most important problems facing women, especially obese women, who are characterized by thin women ⁽²⁾. Many international studies have indicated that PCOS in women constitutes 50% of the causes of infertility in women, and that dirt, the level of hormones in those women with PCOS, is the main reason for their non-pregnancy ⁽³⁻⁵⁾. Infertility due to polycystic ovaries is considered a high rate in women who reach the age of 30 to 40 years, as shown in studies conducted in the past time in different countries in the world ^(6,7). Hormonal stimulation of the ovaries is considered one of the most important global methods used by women's hospitals to stimulate the ovaries and the uterus to produce and fertilize the eggs of women in order for women to receive the fertilized eggs from the eyes of uninfected men ⁽⁸⁻¹⁰⁾. The aim of this work was to study the epidemiology the infertility of PCOS women underwent ICSI and their related outcomes.

Materials and methods

A prospective study carried out in Kirkuk city from February to October 2019, included 200 PCOS women who were enrolled attended Azadi Hospital. All women were subjected to the basic fertility work-up at the infertility center which consists of history taking, physical examination, ovulation detection, evaluation of tubal patency and uterine cavity. The study was conducted on the participating patients after obtaining their original consent to performed the study. All couples subjected to a full history taking, complete general examination, complete gynecological examination and infertility workup including: husband's seminal fluid analysis, basal hormonal analysis, uterine cavity assessment by ultrasound and tubal patency evaluation by hystrosalpingogram.

The females were divided into 2 groups each consists of 100 females. The control group did not receive any ovarian stimulation drugs (natural cycle). In cases group, ovulation induction programs were used were stimulated by Clomid + gonadotropin. The ovarian stimulation protocol was chosen for each patient according to her age, history of stimulation treatment in previous cycles if present, hormonal assay and ultrasound finding in the early follicular phase.

ResultsThe study showed that the higher number and percentage of infertile PCOS women 33% at age 20-29 years, Figure 1.

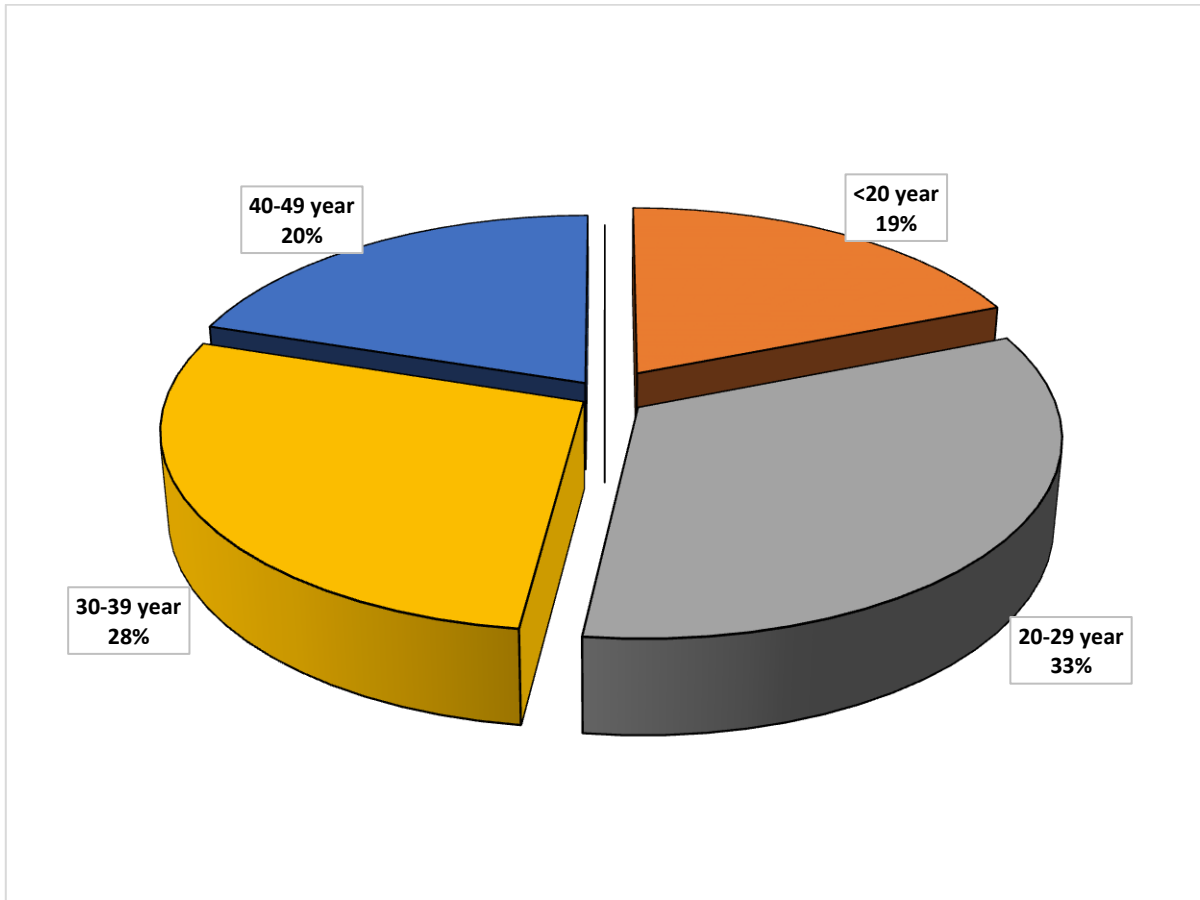


Figure 1: Age Characteristics of study patient

The study demonstrated that, majority of patients PCOS women were belonged to urban area (67%).

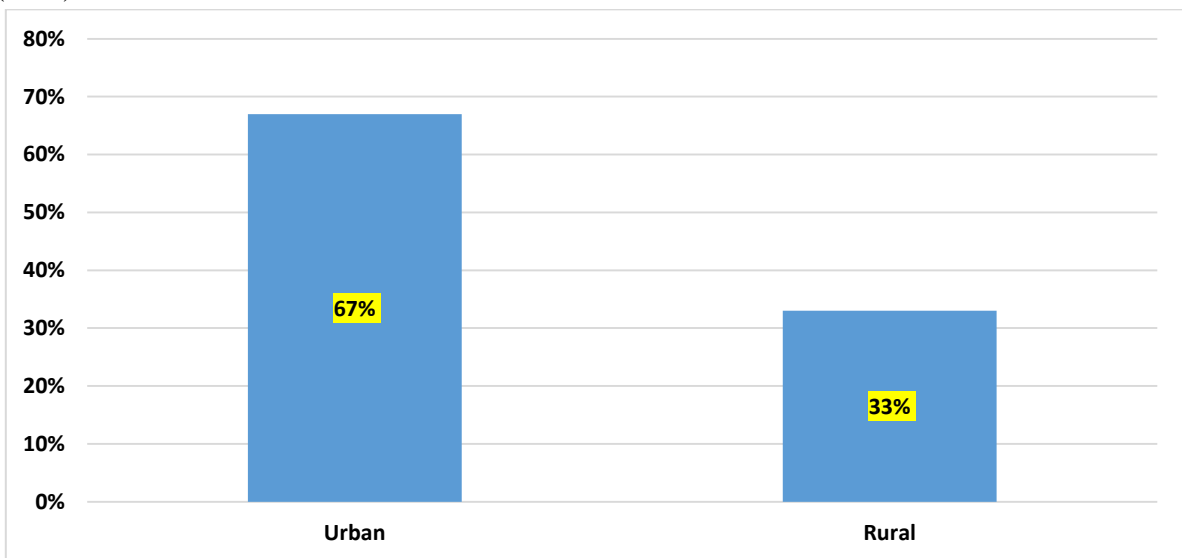


Figure 2: Distribution of studied patients according to marital status and residency

Table 1 shows that, 75% of PCOS have irregular cycle and 65% more liable for PCOS have (5-7) days of menstrual flow.

Table 1: Distribution of studied patients according to characteristics of menstrual cycle

characteristics of menstrual cycle	Difference	%	P. value
Regular cycle	Yes	25%	0.001
	No	75%	
Days of menstrual flow	2-4 days	20%	0.001
	5-7 days	65%	
	8-10 days	15%	

The study showed than majority of studied women haven't family history of PCOS (60%), Table 2

Table 2: Family history of PCOS

Characteristics	Result	n = 100		P-value
		No.	%	
Family history	Yes	40	40%	0.001
	No	60	60%	

The study demonstrated that 60% of PCOS women were became pregnant one month after receiving Clomid+Gonadotrpın compared by 40% of the control group who didn't receive the treatment, (Table 3).

Table 3: Pregnancy rate after ovulation stimulation program

Pregnancy after stimulation	Women under ovulation stimulation program (received Clomid +FSH)	Control group Women under ovulation stimulation programs (didn't received Clomid +FSH)
	%	%
Positive	60	40
Negative	40	55
Total	100	100

P. value: 0.032

The study showed that the highest mean of age were recorded among PCOS women who were pregnant compared with non-pregnant women (33.67 v.s 31.55 year) (P: > 0.05). The highest mean of BMI were recorded among non-pregnant women compared with pregnant women (26.55 v.s 23.45 kg/m²), the result was significant (P<0.01), Table 4.

Table 2: Distribution of PCOS women under ovulation stimulation program according to age and BMI in relation with pregnancy outcomes.

	Pregnant (n:14)	Non pregnant (n:31)	P value
Age (years)	33.67± 5.5	31.55±5.22	0.07
BMI(kg/m ²)	23.45 ± 2.18	26.55±2.22	< 0.01

Discussion

The study showed an increase in the number and percentage of infertile women by 33% at the age of 20-29 years, in line with the results of the study. 32 years old (8-10). Another recent study showed that age is an important factor in neutralizing the period of infertility, especially in women with PCOS (11). The study showed that the majority of women with PCOS are from urban areas (67%). And such a result .. different and consistent levels have shown that women in urban areas are more likely to develop PCOS (12, 13). Other studies have shown that the majority of women with ovarian cyst infertility live in cities rather than the countryside (7, 8). It seems that cities have an effect on this through the type of food and social habits represented in the home health system, and everything that contains preservatives, hormones and proteins in the packages leads to the formation of bags. Table 1 shows that 75% of PCOS have an irregular cycle and that 65% are more likely to have PCOS (5-7) days of menstrual flow. Various studies have also shown such

results. For example, a study showed that The majority of infertile women with PCOS have irregular periods due to an imbalance in the levels of female hormones secreted by the ovaries such as luteinizing hormone and follicle-stimulating hormone (14, 15).

The study showed that 60% of women with PCOS became pregnant after one month of taking Clomid + Gonadotrpín, compared to 40% of the control group that did not receive the treatment. In infertile women it is more effective in developing pregnancy compared to women who have not used it (16). Other studies conducted later in the decade showed that the use of Clomid + Gonadotrpín in stimulating the ovaries in women with ovarian degeneration was effective in increasing the incidence of pregnancy in these women compared to women who did not use Clomid + Gonadotrpín and that it considered the use of the best criteria compared to stimulation programs (17,18). Likewise, the clinical pregnancy rate was essentially higher in the Clomid pool (23.07 versus

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10.68%, $P < 0.001$). There was a significant increase in endometrial receptivity in the letrozole group as assessed by endometrial thickness and doppler flow profiles of the uterine and infrauterine vessels. No true results were calculated in either of the two groups. Besides, others also showed that the clinical pregnancy rate was mainly higher in the Clomid+FSH group (23.07 versus 10.68%, $P < 0.001$) (14,20). There was a significant increase in endometrial receptivity in the Clomid+FSH group as assessed by endometrial thickness and doppler flow profiles of the uterine and infrauterine vessels. No true results were calculated in either of the two groups. Besides, other authors suggested that Clomid+FSH give the impression that it is a suitable ovulation induction specialist in women with PCOS disappointed and a higher pregnancy rate was seen in the combined treatment of letrozole with gonadotropins. Our findings were also in decent agreement with previous reports assuming that Clomid+FSH has a higher ovulation rate and pregnancy in PCOS patients (21,22). Regulation of Clomid in the early follicular stage prevents estrogen conjugations, and causes temporary accumulation of androgens in the ovarian follicles, and the collection of androgens may extend the susceptibility of developing follicles to FSH by expanding the flow of FSH receptors, giving the

impression that it is a suitable ovulation stimulator specialized in women with disappointed CC. A higher pregnancy rate was seen in the combination Letrozole treatment with gonadotropins. Our findings were also in decent agreement with previous reports assuming that letrozole has a higher ovulation rate and pregnancy in PCOS patients (23). Regulation of Clomid+FSH in the early follicular phase inhibits estrogen receptors, and causes a temporary build-up of androgens in the ovarian follicles, and androgen collection may extend the susceptibility of the developing follicles to FSH by expanding the flow of FSH receptors (24).

Conclusion: Higher infertile PCOS women at age 20-29 years, so the majority of patients PCOS women were belonged to urban area, that 75% of PCOS have irregular cycle and 65% more liable for PCOS have (5-7) days of menstrual flow, so the 60% of PCOS women were became pregnant one month after receiving Clomid+Gonadotrpine compared by 40% of the control group who didn't receive the treatment, also highest mean of age were recorded among PCOS women who were pregnant (33.67 year). The highest mean of BMI were recorded among non-pregnant women (26.55 kg/m²).

Conflict of interest: Non

Source of findings: Self

Ethical clearance: taken form hospital and patient

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دراسة وبائية للنساء المصابات بالعمق ومتلازمة تكيس المبايض الخاضعات لل ICSI مع النتائج ذات الصلة

د. ندى يحيى عواد (وحدة التعليم الطبي المستمر/ مستشفى كركوك العام/ صحة كركوك)

د. وليد عبد القادر مريس (مستشفى آزادي التعليمي/ صحة كركوك)

د. رفل عبد الله صالح (مستشفى صلاح الدين/ صلاح الدين/ العراق)

الخلاصة :

اجريت الدراسة الاستطلاعية في مدينة كركوك من الفترة شباط إلى تشرين الأول 2019، وقد شملت 200 امرأة عقيمة ولديها متلازمة تكيس المبايض راجعوا مستشفى آزادي لدراسة وبائيات عقم نساء متلازمة تكيس المبايض وخضعن للحقن المجهري والنتائج ذات الصلة. خضعت جميع النساء لعملية الخصوبة الأساسية في مركز العقم والتي سجلت التاريخ والفحص البدني وكشف الإباضة وتقييم سالكيه الانبواب وتجويف الرحم. خضع جميع الأزواج للفحص العام كامل، وفحص كامل لأمراض النساء، وفحوصات للعقم والتي تضمنت: تحليل السائل المنوي للزوج، والتحليل الهرموني الأساسي، وتقييم تجويف الرحم عن طريق الموجات فوق الصوتية وتقييم سالكيه الانابيب عن طريق تصوير الرحم.

تم تقسيم الإناث إلى مجموعتين تتكون كل مجموعة من 100 أنثى. لم تتلقى المجموعة السيطرة أي أدوية تحفيز المبيض (الدورة الطبيعية). في مجموعة الدراسة، تم استخدام برامج تحفيز التبويض بواسطة Clomid + gonadotropin. تم اختيار بروتوكول تنشيط المبيض لكل مريضة وفقاً لعمر المريضة وتاريخ العلاج التحفيزي في الدورات السابقة إن وجدت والفحوصات الهرمونية والموجات فوق الصوتية في المرحلة الجرابية المبكرة. وقد أوضحت الدراسة ارتفاع عدد ونسبة النساء المصابات بالعمق بنسبة 33% في سن 20-29 سنة.

أظهرت الدراسة أن غالبية مرضى متلازمة تكيس المبايض من النساء ينتمين إلى المدينة. وقد بينت 75% من متلازمة تكيس المبايض لديهم دورة غير منتظمة و 65% أكثر عرضة لمتلازمة تكيس المبايض لديهم (5-7) أيام من تدفق الطمث. أظهرت الدراسة أن غالبية النساء الخاضعات للدراسة ليس لديهن تاريخ عائلي للإصابة بمتلازمة تكيس المبايض 60%. بينت الدراسة أن أعلى متوسط عمر سُجل بين النساء الحوامل من متلازمة تكيس المبايض مقارنة بالنساء غير الحوامل (33.67 مقابل 31.55 سنة). ($P > 0.05$) سجل أعلى متوسط لمؤشر كتلة الجسم بين النساء غير الحوامل مقارنة بالنساء الحوامل (26.55 مقابل 23.45 كجم / م²) وكانت النتيجة معنوية. ($P < 0.01$).

الكلمات الرئيسية: العقم عند النساء، PCOS، بروتوكول التحفيز، كلوميد