

OVARIAN RESERVE PARAMETERS IN WOMEN USING NO CONTRACEPTION, USING ORAL CONTRACEPTION OR IUCD

BY

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Abstract

Background:-

The Pill is one of the most popular forms of contraception ,its use is different in different countries, and among women of different ages and levels of education. Oral contraceptives may alter parameters related to ovarian reserve assessment but the extent of the reduction is uncertain. The main goal of ovarian reserve testing is to identify those individuals who are at risk of decreased or diminished ovarian reserve.

Objective:-

To quantify endocrine and sonographic parameters of ovarian reserve in women using combined oral contraceptive pills and comparing them with IUCD users and non contraceptive users .

Patients and methods:-

Cross sectionl study included 100 healthy volunteer women divided into 35 COC users (all using monophasic preparations, ethinylestradiol 30&35ug and progestin, norgestimate and gestodene) and 65 non-users (35 IUCD users and 30 non contraceptive users). On day 2–5 of the menstrual cycle or during withdrawal bleeding, blood sampling to measure anti-mullerian hormone(AMH) and transvaginal ultrasonography to measure antral follicle count(AFC) and ovarian volume were performed.

Results:-

ovarian reserve parameters were significantly lower among COC users than non-users of hormonal contraception(IUCD users &non contraceptive users) .For AMH ,Pvalue.004;AFC,P -.006; ovarian volume, P-.001 . Further more we found that AFC of intermediate (5–7 mm) and large (8–10 mm) size categories were significantly lower in COC users than non-users with p value .001 .while that of small (2–4 mm) size were increased P-.001. Also negatively linear association was observed between duration of COC use and ovarian reserve parameters.

Conclusion:-

This study indicates that ovarian reserve markers (AMH, AFC&ovarian volume) are lower in women using COC compared to IUCD users and non contraceptive users.

KEY WORDS:

ovarian reserve tests/ Antral follicle count/Ovarian volume/Anti-Mullerian hormone/Oral contraception.

Introduction

The introduction of oral contraceptives (OC) in 1958 dramatically changed the way in which women and couples worldwide viewed family planning (*van Heusden et al., 2002*). In Western countries, 50–89% of women use OC at some point in their lifetime and in Denmark 32% of fertile women are current users (*Jones et al., 2012; Wilson et al., 2012*).

Modern women strive for higher education and career opportunities and many postpone childbearing despite the risk of low fecundity with increasing age (*Schmidt et al., 2012*). Planning major life events such as pregnancies are essential for many women (*Benzies et al., 2006*). New technologies and changed legislations have extended the reproductive choices. Today, Oocyte freezing is widely available, and although the long-term efficiency of this procedure remains to be documented, it seems highly dependent on the ovarian age and thus oocyte quality (*Rienzi et al., 2012*). As a consequence, ovarian reserve assessment is no longer just relevant for women undergoing treatment for infertility. Indeed, there has been an increased demand for ovarian reserve testing from women with no known fertility problem to obtain estimates on their remaining reproductive lifespan (*Tremellen and Savulescu, 2014; Hvidman et al., 2015; Seifer et al., 2015*).

Thus, reliable assessment of ovarian reserve is essential. Serum anti- Mullerian hormone (AMH) concentration is an indirect marker of the number of antral follicles in the ovary and thereby the ovarian reserve (*La Marca et al., 2010*).

Screening of the ovarian reserve before commencement of oral contraception has recently been suggested in order to detect women with premature ovarian insufficiency (*Kushnir et al., 2014*). In order to be able to counsel OC users on their reproductive life span, we need robust studies to establish the impact of OC use on ovarian reserve parameters such as AMH and AFC.

Aim of the Work

To answer an important question, To what extent does oral contraception (OC) impair ovarian reserve parameters in women who seek fertility assessment and counselling to get advice on whether their remaining reproductive life span is reduced? and comparing them with IUCD users and non contraceptive users.

Patient and Methods

- This cross-sectional study was carried out on 100 women seeking medical advice in gynecological outpatient clinic at Al-zhraa university hospital from December 2015 till April 2018 after approval of ethical committee .
- The participants divided into 35 COC users =group A (all using monophasic preparations, ethinylestradiol 30&35ug and progestin, norgestimate and gestodene) and 65 non-users (35 IUCD users=group B and 30 non contraceptive users=group C).

Inclusion criteria

Women seeking medical advice for treatment of gynecological infection or choice of contraceptive method (volunteer) with the following criteria:

- Age from 19-30 years old.
- Oral contraceptive users (all combinations of ethinyl estradiol and progestin) with different duration of use and non users (using IUCD or no hormonal contraception).
- All were non smokers

Exclusion criteria

- Hormonal contraception other than combined oral contraceptive pills as injectables, subdermal implant and hormone releasing IUCD.
- Factors affecting ovarian reserve as:- Ovarian pathology-Present fertility treatment-Ovarian surgery as ovarian drilling and ovarian cystectomy.
- Chronic medical disorders as diabetes mellitus, the heart, kidney, liver disease and autoimmune diseases.

Methods

- **Informed consent** was taken from all participant before enrolling this study.
- **Full history taking and Clinical examination** To fulfill inclusion and exclusion criteria.:- **Including** 6 Personal history – Menstrual history with history of contraception -Obstetric history -Family history and Past history.
- **Clinical examination.** Weight, height, pulse, blood pressure, temperature and abdominal examination.

❖ All participants underwent the following procedures:-

1- Trans vaginal US examination.

Was done on day 2 -5 of menstrual period (if participants were seen out of this time they asked to come back during the first 5 days of the next cycle).

- Trans vaginal ultrasound scan was performed using a Mindray 2500 A Plus with a 6.5MHz transducer & done by the same examiner.
- While the woman in lithotomy position with empty bladder sliding the vaginal transducer into the vagina in oblique plane, identification of the ovary (medial to internal iliac artery) and measuring its longitudinal and transverse diameters then rotation of the vaginal probe 90 degree angle to measure its antero posterior diameter. Thus the following were measured:-
 - a- **Ovarian volume** was measured in three planes and calculated by using the formula for the volume of an ellipsoid: $D1 \times D2 \times D3 \times 0.52$.
 - b- **Antral follicle count.** The AFC was estimated as the total number of follicles measuring 2 - 10 mm within the ovary and grouped into three categories: 2–4 mm (small), 5–7 mm (intermediate) and 8–10 mm (large).
Some ultrasonographic pictures for some cases.

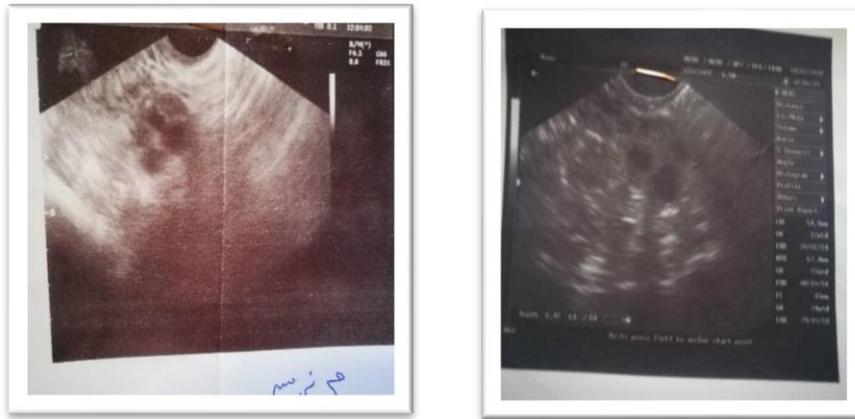


Fig. (1): TVU showing antero-posterior diameters of the ovary in 2 different women using COC.



Fig. (2): TVU showing longitudinal diameter of the ovary in woman using COC. **Fig. (3):** TVU in IUCD user showing longitudinal and transvers diameters of the ovary

2- Hormonal assays

- Venous blood samples were collected from each subject to measure AMH within the first 5 days of menstrual cycle at the same day of transvaginal US examination and centrifuged within 30 min of venepuncture for 20 min at 4 °C and 4000 rpm to separate the serum. The serum sample was frozen at – 20 °C and stored for subsequent determination of AMH. Measurement of serum AMH levels was performed using Enzyme –Linked Immunosorbent Assay (ELIZA) with *detection Range*: 0.03 ng /ml – 17.87 ng /ml.
- AMH is added to the wells pre-coated with AMH monoclonal antibody. After cubation abiotin –conjugated anti human AMH antibody is added and binds to human AMH. After incubation unbound biotin conjugated
- Human AMH antibody is washed away during a washing step. Substrate solution is then added and develops in proportion to the amount of human AMH. This reaction is terminated by addition of acidic stop solution and a substrate is

measured at 450nm. AMH level will be determined by using ELISA by wkeamedsupplies No. E2053HU.

Statistical Analysis

Data were collected, revised, coded and entered to the Statistical Package for Social Science (IBM SPSS) version 20. Baseline characteristics were summarized as either mean and standard deviation (SD) or number and percentage. Analysis of variance (ANOVA) test used to compare ovarian reserve parameters (AMH, AFC and ovarian volume) in the studied groups. The association between serum AMH and AFC was assessed by Pearson's correlation coefficient (r). An independent samples t-test confirmed that there was no significant difference in AMH with increasing duration of COC use but there was significant difference in total AFC and total ovarian volume. The confidence interval was set to 95% and the margin of error accepted was set to 5%. So, the p-value was considered significant as the following: **P > 0.05**: Non significant, **P < 0.05**: Significant & **P < 0.01**: Highly significant.

Results

100 women included in our study were divided into 3 groups: group A (COC users=35 women), group B (IUCD users = 35 women) & group C (non contraceptive users =30 women).

Demographic characteristics as seen in table 1, including age, weight, height, BMI & parity.

Table (1): Demographic characteristics of the studied participants

Variable	COC	IUD	Non-user	(Mean \pm SD)
	35 (35%)	35 (35%)	30 (30%)	
Age (years)	Range :(19 - 30)			26.97 \pm 3.6
Weight (kg)	Range :(45 - 125)			77.4 \pm 15.7
Height (cm)	Range :(150 - 180)			169.1 \pm 5.3
BMI (Kg/M2)	Range :(18.5 - 41)			26.71 \pm 4.6
Parity				
• Primipara	10 (10%)			
• Multipara	81 (81%)			
• Grand multipara	9 (9%)			

N.B. all participants were non-smokers

Table2 shows significant decrease in the mean of total AFC among COC users(A) compared to non users (C)with p- value=.006 with reduction in total AFC in COC(A) compared to IUCD users (B)but of no statistic significance and there is highly statistically significant decrease in the mean of total ovarian volume among COC users(A) compared to IUCD users(B) and none users (C)with p- value =.001.

Table (2): Ultrasound finding as regard AFC & ovarian volume in COC users, IUCD users and non users.

Contraception use Us parameters	COC=A (M±SD)	IUD=B (M±SD)	Non- user=C (M±SD)	p- value	Post-Hoc
Total antral count(mm)	11.97±2.864	13.06±2.274	14.03±2.385	.006*	A-C
Total ovarian volume (ml)	6.17±4.382	11.29±4.177	10.77±3.048	.001*	A-B & A-C

Table 3 Shows statistically significant decrease in the proportion of AFC sized 5-7mm and 8-10 mm in COC users (A) compared to IUCD users(B) and non users(C) with p- value=0.001. While there is statistically significant increase in the proportion of AFC 2-4mm among COC users(A) than IUCD users(B) and non users (C) with P-value=.001.

Table (3): Antral follicle size in COC users, IUCD users & non users.

Contraception use AFsize	COC=A (M±SD)	IUD=B (M±SD)	Non- user=C (M±SD)	p- value	Post-Hoc
2-4mm	7.46±2.8	3.1±1.52	4.2±2.124	.001*	A-B & A-C
5-7mm	3.09±1.197	5.80±2.336	6.20±1.937	.001*	A-B & A-C
8-10mm	1.43±1.313	4.14±1.458	3.63±1.671	.001*	A-B & A-C

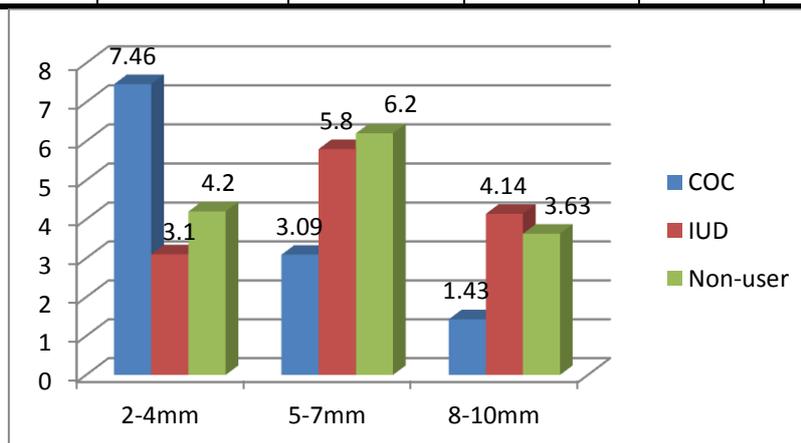
**Fig. (4):** Variable sized AFC in the three groups.

Table 4 shows that there is statistically significant decrease in the mean of AMH level among COC users(A) than IUCD users (B) and non users(C) with p- value<.001.

Table (4): Anti-Mullerian Hormone (AMH) in the three groups.

Contraception use Lab. test	COC=A (M±SD)	IUD=B (M±SD)	Non- user=C (M±SD)	p- value	Post-Hoc
AMH (ng/ml)	3.13±2.383	4.48±1.6	4.71±2.115	.004*	A-B&A-C

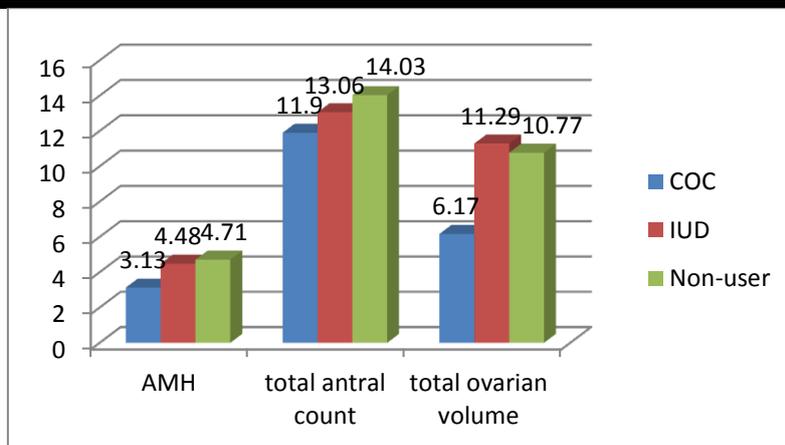


Fig. (5): AMH, AFC and total ovarian volume in the three groups.

Table 5 shows significant reduction in total AFC and total ovarian volume in women using COC ≥6years than who were using it 1-5 years. While there is reduction in AMH with increasing duration of COC use but of no statistic significance.

Table (5): Effect of duration of COC use on ovarian reserve parameters:

Duration of (COC) use	1-5 years (M±SD)	≥6years (M±SD)	t	p-value
Ovarian reserve	No.=20	No.=15		
Total antral count (mm)	13.56±2.78	11.24±2.62	2.238	.03*
Total ovarian volume(ml)	9.60±4.858	4.80±3.391	3.335	.002*
AMH(ng/ml)	4.17±1.9	2.7±2.4	1.46	.153

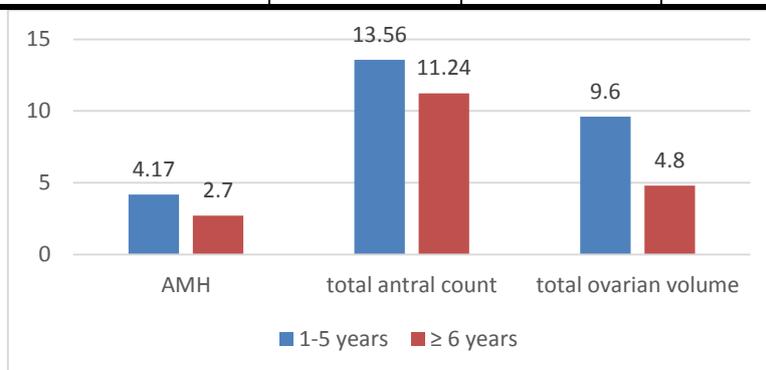


Fig. (6): Effect of duration of COC use and AMH, AFC & ovarian volume.

Table (6): Correlation between total antral count and AMH: This table shows positive correlation between total antral follicle count and AMH with P-value. 05.

Total antral count	AMH	
	r	p-value
	.196	.05*

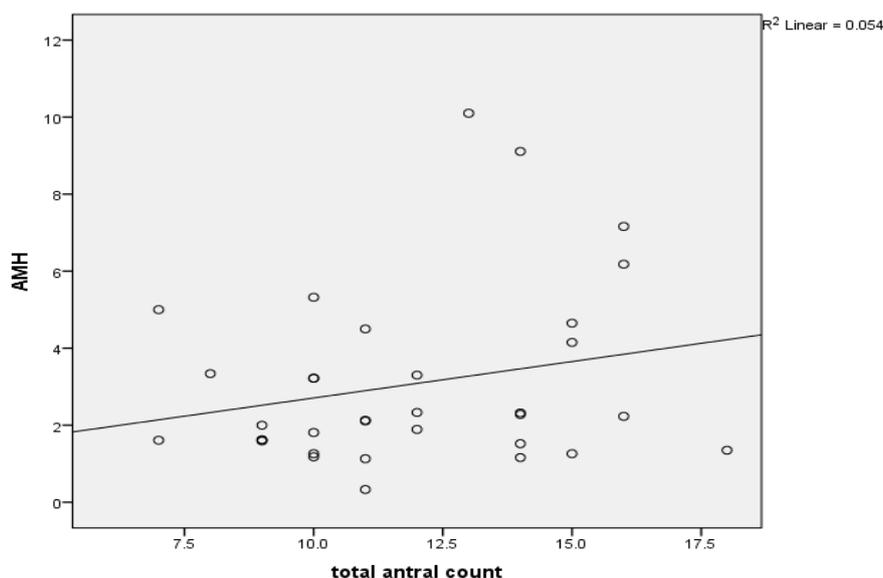


Fig. (7): Correlation between total antral count and AMH.

DISCUSSION

In the current study 100 volunteer women were studied, 35 COC users, 35 IUCD users & 30 non users. All women were in the reproductive age (19-30 years) with a mean 26.97 ± 3.6 range. As regard to parity, 10% of them were primipara, 81% were multipara and 9% were grand multipara. Body mass index ranged from 18.5-41 with a mean 26.71 ± 4.6 and all are non smokers as shown in (table 4).

In the current study we found that:-As regarding ultrasound finding of ovarian reserve (AFC & ovarian volume by Transvaginal ultrasound) ,there is statistically significant decrease in the mean of the total ovarian volume among COC users compared to non users (IUCD users and none users) with p- value =.001 and $M \pm SD$ 6.17 ± 4.382 in coc users, 11.29 ± 4.177 in IUCD users & 10.77 ± 3.048 in non users. Also there is significant decrease in the mean of total antral follicle count in COC users compared to the non users with p- value=.006 and $M \pm SD$ 11.97 ± 2.864 in COC user, 14.00 ± 2.349 in non users, with no significant reduction in total AFC between COC and IUCD users as shown in (table5). Further more there is statistically significant decrease in the proportion of AFC sized 5-7mm and 8-10 mm in COC users compared to IUCD users and non users with p- value=.001 and ($M \pm SD$) 3.09 ± 1.197 (5-7mm) & 1.43 ± 1.313 (8-10mm) in COC users, 5.80 ± 2.336 (5-7mm) & 4.14 ± 1.458 (8-10 mm) in IUCD users and 6.20 ± 1.937 (5-7 mm) & 3.63 ± 1.671 (8-10 mm) in non contraceptive users. But there is statistically significant increase in the proportion of AFC 2-4mm among coc users than IUCD users and non users with P-value=.000 and

(M±SD) 7.46±2.8 in COC users, 2.74±1.597 in IUCD users & 4.2±2.124 in non users (table 6).

Also *Birch Petersen et al., (2015)* reported that in a linear regression analyses adjusted for age, ovarian volume was 50% lower (95% CI 45.1–53.7%) and AFC was 18% lower (95% CI 11.2–24.8%) in OC users compared with non users with greatest reduction 19–30 years which agreed with our study. Also they found a significant decrease in antral follicles sized 5–7 mm (P, 0.001) and antral follicles sized 8–10 mm (P, 0.001) but an increase in antral follicles sized 2–4 mm (P, 0.008) among OC users which consistent with our study. They studied 887 women aged 19–46 attending the Fertility Assessment and Counselling Clinic (FACC) comparing ovarian reserve parameters in OC users with non-OC users. Women were grouped into (i) OC users (n=244) (all ethinyl estradiol and progestinoral products or vaginal ring) and (ii) non-users (n=643) (IUDs or no hormonal contraception) 130 women are smoker. Ovarian reserve was examined at a random cycle day while we examine it 2–5 day of menstrual period, consultation included; transvaginal ultrasound (AFC, ovarian volume, pathology), a full reproductive history and AMH measurement.

Similarly *Bentzen et al., (2012)* reported a change in AFC and ovarian volume. After adjusting for age, they found that ovarian reserve parameters were lower among users than among non-users of hormonal contraception: antral follicle count (AFC) by 30.4% (95% CI 23.6 to 36.7%) and ovarian volume by 42.2% (95% CI 37.8 to 46.3%). Their study included 228 participants using combined oral contraceptives or the contraceptive vaginal ring, 504 non-users of hormonal contraception was included as controls. Among the users of hormonal contraception, 217 (95.2%) used combined oral contraceptives and 11 (4.8%) used a contraceptive vaginal ring. Among the users of oral contraceptives, 101 (44.3%) used monophasic preparations with 20ug ethinyl oestradiol, 96 (42.1%) used monophasic preparations with 30–35ug ethinyl oestradiol and 20 (8.8%) used biphasic/ triphasic oral contraceptives or oral contraceptives with an unknown dose of ethinyl oestradiol. On day 2–5 of the menstrual cycle or during withdrawal bleeding, blood sampling and transvaginal sonography was performed as we done.

On the same hand *Shilpa Deb. et al. (2012)* found that hormonal contraception suppressed larger antral follicles (6–10 mm) and ovarian volume. They conducted a prospective case–control study to examine the effect of prolonged use (>1 year) of combined oral contraceptive pills on AFC, ovarian volume and serum AMH concentration. They included 34 volunteers (oral contraceptive usage >1 year) as cases = the experimental group (using the COCP containing 30 mcg of ethinyl estradiol and 150 mcg of levonorgestrel on a regular basis and were having monthly withdrawal bleeds during the hormone-free interval) and 36 volunteers (oral contraceptive usage <1 year, not using it or any other hormonal contraception for the last year) as controls = Control group. The main inclusion criteria were: age between 18 and 35 years, non-smoking status, absence of menstrual irregularities and no past history of ovarian surgery.

Also, *Van Den Berg et al. (2010)* reported that ultrasound markers (AFC and ovarian volume) measured at the end of the hormone-free interval in users of hormonal contraception did not seem to represent subsequent natural early follicular-phase values.

In 2010, Spona et al. studied 40 women that used a COC containing 20 μ gEE+2 μ g chlormadinone acetate for three cycles given in a 24/4-day regimen. Hormone concentrations (oestradiol, progesterone). They did not find ovarian activity in 75% of medication cycles, but they observed residual ovarian activity in 15.9%.

However Bentzen et al., (2012) found that , AFC in all follicle size categories (small, 2–4 mm; intermediate, 5–7 mm; large, 8–10 mm) was lower in users than in non-users of hormonal contraception, the present study found that there is increase in small sized AFC 2-4 mm and decrease in large one 5-7mm & 8-10mm among COC users as shown in (table 6).

Also, Shilpa Deb et al. (2012) disagree with our study as regarding effect of COC use on small AFC <6 as they found that there was no significant difference between the experimental (COC users) and control groups in the number of small antral follicles measuring < 6 mm ($P = 0.127$).

As regarding AMH there is statistically significant decrease in the mean of AMH level among COC users than IUCD users and non users with P - value=.004. $M \pm SD$ is 3.25 \pm 1.760 in COC, 4.48 \pm 1.6 in IUCD & 4.71 \pm 2.115 in non users (table 7).

Birch Petersen et al., (2015) reported the same result as they found that in a linear regression analyses adjusted for age, AMH was 19% lower (95% CI 9.1–29.3%) in OC users compared with non users with greatest reduction 19-30 years.

On the same hand Kallio et al., (2013) conducted prospective study on 44 women using hormonal contraceptives, demonstrated serum AMH was lowered by an average of approximately 30% within two menstrual cycles of starting the contraceptive regardless of the route.

Similarly, a recent Cohort study in >2000 women *Dolleman et al., (2013)* demonstrated that AMH levels decrease under current use of oral contraceptives (Such an effect was also demonstrated in other studies (*Arbo et al., 2007; Shaw et al., 2011*). These results are in accordance with our study. They also reported that previous use of oral contraception was not associated with lower AMH levels

Also, Kristensen et al., (2012) reported in a large cross-sectional study of 256 women that AMH concentration and AFC were significantly lower in users of oral contraceptives than in non-users.

On the same hand Bentzen et al., (2012) were consistent with our study as they found that, After adjusting for age, serum AMH concentration was lower among users than among non-users of hormonal contraception: by 29.8% (95% CI 19.9 to 38.5%).

Also, Van Den Berg et al. (2010) reported that endocrine (AMH and FSH) measured at the end of the hormone-free interval in users of hormonal contraception did not seem to represent subsequent natural early follicular-phase values.

Other studies e.g. *Somun Kiran et al., (2007); Streuli et al., (2008); Steiner et al., (2010); Liet al., (2011)*. Disagree with our study, they suggested that AMH levels remain constant under the influence of exogenous sex steroids used for contraception.

As regard to the effect of duration of hormonal contraception (COC) on ovarian reserve, our study reported that, there is reduction in AFC ($P=.03$) and total ovarian volume ($P=.002$) with increasing duration of COC use. Also we found reduction in

AMH concentration with increasing duration of COC use but of no statistical significance with P-value.153 (**Table 8**).

Birch Petersen et al., (2015), agree with our study as they found no statistically significant effect of duration of hormonal contraception on AMH (P=0.99). Additionally they found no significant effect of duration of hormonal contraception on AFC (P=0.44) or ovarian volume (P=0.08) after adjusting for expected age-related decline but a trend towards smaller ovaries with longer duration of use among current OC users. This finding disagree with our study finding.

Similarly Bentzen et al., (2012), agree with our study as they found a significant decrease in AFC and ovarian volume with increasing duration of hormonal contraception use. The AMH concentration tended to decrease with increasing duration of hormonal contraception use, although statistical significance was not reached, presumably due to large variance of AMH concentration and an accordingly increased statistical uncertainty.

On the other hand **Shilpa Deb et al. (2012)** ,disagree with our finding as they found no differences in serum AMH between the two groups (oral contraceptive usage>1 year= The experimental group) and (oral contraceptive usage<1 year, not using it or any other hormonal contraception for the last year)=Control group).

In the current study we found positive correlation between total antral follicle count and AMH (r.196 and P-value 0.05) in all groups (COC users and non users as shown in (**table 9**))

Bentzen et al., (2012), agree with our study as they found strong positive correlation between total antral follicle count and AMH among COC users (r =0.82, P<0.001) and non users (r =0.86, P<0.001).

On the same hand Shelpa Deb et al. (2012) found a significant correlation between AMH levels and the total number of antral follicles measuring 2–10 mm (r = 0.741; P < 0.001) in COC user (The experimental group).

In conclusion, this study has shown that ovarian reserve markers (AMH, AFC&ovarian volume) were lower in women using COC compared to IUCD users and non contraceptive users.

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مقاييس مخزون المبيض في السيدات اللاتي يستخدمن اقراص منع الحمل المزوجه عن طريق الفم واللاتي لا يستخدمنها واللاتي يستخدمن اللولب

للسادة الدكتورة

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من

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من المعلوم ان مخزون المبيض من البويضات هو مصطلح يعكس عدد البويضات المتبقية في المبيض في اي وقت من فترات الخصوبة.

- وتشتمل اختبارات مخزون المبيض على عدة اختبارات منها:-

- (١) بعض التحاليل المعملية مثل (هرمون اف اس اتش-الايسترا ديول-انتي موليريان هرمون وانهيبي ب)
- (٢) التصوير المهبل بالموجات فوق الصوتية علي المبيض لتحديد عدد الحويصلات بالمبيض - معرفه حجم المبيض

الانتي موليريان هرمون هو جليكوبروتين يفرز من الخلايا الحبيبية للحويصلات الغاربه ومن ما قبل الحويصلات الغاربه الاولية بالمبيض التي تتراوح حجمها من ٢ الى ١٠ مم لذا فانه يستخدم لمعرفة مدى مخزون المبيض من هذه البويضات. وهو معترف به حاليا كاحسن اختبار معلمي لمخزون المبيض وتراجعته بالتدرج خلال الحياه الانجابيه وهذا تم تاكيد في دراسات كبيرة.

- وتعد نسبة الانتي موليريان هرمون بالدم مع عدد الحويصلات الاولية بالمبيض هما ادق اختبارين لتقييم مخزون المبيض.
- تعد اقراص منع الحمل المزوجه (التي تحتوى على هرموني الاستروجين والبروجسترون) والتي تم اعتمادها لاستخدامها كوسيلة لمنع الحمل لأول مرة في الولايات المتحدة الامريكية عام ١٩٥٨ من اكثر الوسائل شيوعا.

وتعمل اقراص منع الحمل المزوجه على تثبيط افراز هرمون الاف اس اتش والاتش من الغدة النخامية مما يمنع نمو وتطور الحويصلات الاولية بالمبيض ومنع حدوث التبويض.

دراستنا سوف تحلل مستوي الانتي موليريان هرمون مع حجم المبايض مع الحويصلات ما قبل الغاربه الموجودة علي اطراف المبايض في السيدات اللاتي يستخدمن حبوب منع الحمل المزوجه (التي تحتوى على هرموني الاستروجين والبروجسترون) واللاتي يستخدمن اللولب واللاتي لا يستخدمنها وذلك يعكس الاختلافات في مخزون المبيضين بين الثلاث مجموعات.

وهناك سؤال هام تطرحه العديد من السيدات اللاتي يستخدمن هذه الاقراص كوسيلة لمنع الحمل وهو ما مدى تاثير هذه الحبوب على مخزون المبيض فيما بعد واذا ما كان هناك ضرر لاحق بالقدرة على الانجاب ام لا؟ ولذا كان الهدف من هذه الدراسة:

- تقييم تأثير استخدام حبوب منع الحمل المزوجة علي احتياطي المبايض ومقارنته في السيدات اللاتي يستخدمن اللولب واللاتي لا يستخدمنها.

وذلك عن طريق قياس الاتي:-

- نسبة الانتي موليريان هرمون بالدم.
- عدد البويضات ما قبل الغارية علي حواف المبيض.
- حجم المبيضين.

هذه دراسته مستقبليه:

سوف يتم البحث على ١٠٠ سيدة يتم تقسيمهم الى ثلاث مجموعات ١- اللاتي يستخدمن حبوب منع الحمل المزوجة ٢- اللاتي يستخدمن اللولب ٣- اللاتي لا يستخدمن وسيلة لمنع الحمل وتطابق المعايير.

المرضى سوف يتم اختيارهم على حسب معايير التضمين والاقصاء التاليه:-

١. سيدات في فترة الخصوبة والانجاب وتتراوح من سن ٩ سنة وحتى سن ٣٠ سنة ذوات دورات منتظمة (٢١-٣٥) يوم.
٢. سيدات يستخدمن حبوب منع الحمل المزوجة- اللولب- لا يستخدمن وسيلة لمنع الحمل.

معايير الاقصاء:-

١. السيدات اقل من ٩ سنة او اكثر من ٣٠ سنة
٢. اللاتي يستخدمن وسائل منع الحمل الهرمونية الاخرى مثل اقراص البروجستيرون-حقن الديوبروفيرا واللولب الهرموني.
٣. يستبعد من البحث وجود امراض علي المبيض بواسطة السونار المهيلي مثل مرض تكيس المبيض او اكياس المبيض.
٤. يستبعد من البحث السيدات الاتي تعاني من تأخر الانجاب.
٥. وجود ايا من الامراض العضوية المزمنة او اي اضطراب في وظائف الغدد الصماء.
٦. ويستبعد من البحث السيدات الاتي خضعن لعمليات جراحية علي المبايض مثل استئصال كيس من المبيض او استئصال احد المبايض.

وتم اخذ موافقة من جميع المرضى قبل بدء الدراسة

جميع السيدات خضعن للاتي:

١. تاريخ مرضي مفصل ويشمل السن وميعاد اول يوم في اخر حيضة وتاريخ مرضي مفصل لاستبعاد وجود اضطرابات في افرازات الغدد او الامراض المزمنة.
 ٢. عمل اشعة تليفزيونية مهبلية لتحديد عدد البويضات الموجودة في اطراف المبيض وهي عبارة عن بويضات صغيرة تتراوح احجامها من ٢ الي ١٠ ملليمتر كما يتم تحديد حجم المبيض عن طريق حساب طول المبيض في عرضه في ارتفاعه في ٥٢٣,٠.
 ٣. يتم سحب عينات دم لقياس الانتي موليريان هرمون وذلك في اليوم من ٢-٥ من الدورة الشهرية.
 ٤. مستوي الانتي موليريان هرمون سوف يتم تحديده باستخدام اختبار الاليزا.
- ولقد تبين من دراستنا ان هناك نقص ذو دلالة احصائية بين مستوى الانتي موليريان هرمون -عدد الحويصلات الغارية وحجم المبيض في السيدات اللاتي يستخدمن حبوب منع الحمل المزوجة مقارنة بالسيدات اللاتي يستخدمن اللولب و الاتي لا يستخدمن وسيلة لمنع الحمل