

Functional Ovarian cysts: Expectant management versus Oral contraceptives

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Abstract

Background: Ovarian cyst is a common problem in females of reproductive age group.

Objective: To compare the expectant management and use of oral contraceptives for the management of ovarian cysts.

Methodology: This was a comparative study, conducted in the department of Obstetrics and Gynecology, Sheikh Zayed Medical College, Rahim Yar Khan, from January 2017 to December 2018. A total of 870 females were included through non-probability, purposive sampling. Informed verbal consent was obtained. Ultrasound was performed to measure the cyst size, site, and characteristics. The lottery method was used to divide the patients into two groups. Patients in group E received expectant treatment (placebo) and in group OC, patients were prescribed hormonal treatment with combined oral contraceptive (COCP) having ethinyl estradiol 0.03mg and levonorgestrel 0.15mg. Then patients were counseled and followed up for one month. After one month, USG was performed again to measure success as cyst resolution. The collected data was analyzed into SPSS 16. Both groups were compared for success by using the chi-square test, taking p-value ≤ 0.05 as significant.

Results: Mean age of females was 26.42 ± 7.59 years. There were 488 (56%) married females while 382 (44%) were unmarried. Mean cyst size was 3.93 ± 1.28 cm. was achieved in 605 (69.5%) females, out of which 259 (59.5%) had expectant management while 346 (79.5%) had oral contraception. Success (Cyst resolution) was achieved in 605 (69.5%) females, out of which 259 (59.5%) had expectant management while 346 (79.5%) had oral contraception. ($p=0.00$).

Conclusion: It was concluded that oral contraceptives are more effective and successful in the resolution of ovarian cysts as compared to expectant management.

Keywords: Ovarian Cyst, Expectant Management, Oral Contraceptive, Polycystic Ovarian Syndrome, Cyst Resolution.

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Introduction

An ovarian cyst is a sac that is fluid-filled or has semi-liquid material, and having an ovarian cyst causes considerable anxiety in women due to fears of malignancy, but the vast majority of ovarian cysts are benign in nature.¹ In females, ovarian cysts can develop at any stage of their life, from the neonatal period to post-menopause. Infancy and adolescence is the maximum time period of hormonally active duration to have ovarian cysts. The majority of these cysts are functional in nature and resolve with minimal treatment.² Functional (physiologic) cysts are asymptomatic, benign, and often found incidentally as a result of pelvic examination or ultrasonography (USG), and are most common in young women. They are occasionally a complication of ovulation induction.³ Ovarian growths caused by other problems such as malignancy are different from

functional ovarian cysts. The majority of these cysts are harmless. They are usually asymptomatic, and they resolve without any intervention. If a cyst can twist, rupture, or bleed, and can become an emergency that requires intervention.⁴ As oral contraceptives (OC) suppress ovarian activity, there use was associated with a reduced incidence of functional ovarian cysts.⁵ In current clinical practice functional ovarian cysts are treated either with combined oral contraceptive pills or expectant management alone.⁶

One study reported that complete resolution of functional ovarian cyst after one cycle or 1 month was achieved in most females given placebo or has expectant management while with OC there was almost the same complete resolution of functional ovarian cyst. Expectant management is equally effective as contraceptive pills and even success is higher with expectant management and it was

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suggested that studies are required with a large sample size.⁷ While another study reported that complete resolution of functional ovarian cyst after one cycle or 1 month was achieved in more than half of the females given placebo or has expectant management while with OC. In this study success rate was higher with OC as compared to expectant management while the difference was insignificant.⁸

The rationale for this study was the comparison between the success of expectant management and oral contraceptives for the management of functional ovarian cysts. Literature has reported that the oral contraceptive method is successful in the resolution of the functional ovarian cyst but it is also observed in randomized trials that expectant management is also equally effective or has a higher success rate although insignificant. So because of this controversy, we are unable to implement one standard treatment for functional ovarian cyst. Most of the studies were done on a small sample size. Through this study, we want to establish a standard way to resolve functional ovarian cyst. This study was conducted to compare the expectant management and use of oral contraceptives for the management of ovarian cysts.

Methodology

This was a comparative study, conducted in the department of Obstetrics and Gynaecology, Sheikh Zayed Medical Hospital, Rahim Yar Khan, from January 2017 to December 2018. Total 870 females; 435 females in each group were calculated with 80% power of the test, 5% level of significance, and taking the expected percentage of success i.e. 59.9% with expectant management and 68.0% with OC in females presented with functional ovarian cysts.⁷ They were selected through non-probability, purposive sampling.

Inclusion criteria:

- Patients of age 16-40 years with the functional ovarian cyst

Exclusion criteria:

- Patients with pre-menarche, post-menopause, ovarian tumors requiring surgery (dermoid, endometriosis or malignancies), and pelvic inflammatory diseases.
- Patients with a history of allergy to or gastric intolerance for oral contraceptives.\
- Contraindications for the use of oral

contraceptives (thrombosis, IHD, Hypertension.)

Data Collection: After obtaining approval from the Institutional Review Board, 870 patients; according to inclusion criteria were included in the study from the Department of Obstetrics and Gynecology. Informed verbal consent for enrolment in the study was obtained. Demographic data (age, address, and contact) was also recorded. Ultrasound (USG) abdomen and pelvis, was performed to measure the cyst size, site, and characteristics. Two groups of study participants were made using the lottery method.

Patients received expectant treatment (placebo) in group E, and patients were prescribed hormonal treatment with OC containing ethinyl estradiol 0.03mg and levonorgestrel 0.15mg was started group OC. Then patients were counseled and followed up for one month. After one month, USG was performed again to measure success. All the information was collected on a prescribed proforma. The collected data were analyzed through SPSS 16. Quantitative variables like age and size of the cyst were calculated through mean and standard deviation. Frequency and percentages were calculated for qualitative variables like the site of cyst and success. Chi-square test by taking p-value ≤ 0.05 as significant was used to compare success in both groups.

Results

A total of 870 females were included in our study, with a mean age of 26.4 ± 7.5 years. The minimum and maximum age of females was noted as 16 years and 40 years. In this study, there were 488 (56%) married females while 382 (44%) were unmarried. Among married females, there were 301 (61.7%) females who were nulliparous, 122 (25%) had parity 1 and 65 (13.3%) had parity 2. The mean cyst size was observed as 3.93 ± 1.28 cm. The minimum and maximum cyst size of females was noted as 2cm and 6cm. There were 303 (34.8%) females who had an ovarian cyst on the left side, 437 (50.2%) females had a cyst on the right side and 130 (14.9%) females had bilateral cysts. Cyst resolution was achieved in 605 (69.5%) females while among 265 (30.5%) cases, the cyst was not resolved. Overall success was achieved in 605 (69.5%) females while among 265 (30.5%) cases, success was not achieved. Out of 605 cases in whom cyst was resolved, 259 (59.5%) had expectant management while 346 (79.5%) had oral contraception. A significant difference was observed ($p=0.000$).

Table-I: Comparison of cyst resolution between both groups

Variable		Group		Total	P value
		Expectant management	Oral Contraceptive		
Cyst resolution	Achieved	259 (59.5%)	346 (79.5%)	605 (69.5%)	0.000
	Not achieved	176 (40.5%)	89 (20.5%)	265 (30.5%)	
Total		435 (100%)	435 (100%)	870 (100%)	

Out of 605 cases in whom success was achieved, 259 (59.5%) had expectant management while 346 (79.5%) had oral contraception. There was a significant difference observed ($p=0.000$). (Table-I)

Discussion

The most common type of ovarian cysts are functional cysts, such as follicular cysts or corpus luteum cysts. Normally functional ovarian cysts may be formed during a normal menstrual cycle and do not contribute to infertility.⁹ Functional ovarian cysts often do not require treatment. These cysts usually resolve on their own within 8-12 weeks. If a female has a history of recurrent cysts formation, birth control pills (combined oral contraceptives) can be prescribed. These pills may reduce the risk of new ovarian cysts formation.¹⁰ Studies evaluating the effect of combined oral contraceptives on cyst occurrence have mixed results. High-dose oral combined hormonal contraceptives were shown in early epidemiologic studies to protect against cyst development.¹¹

We included a total of 870 females in our study with a mean age of 26.42 ± 7.59 years. In this study, there were 488 (56%) married females while 382 (44%) were unmarried. The mean cyst size was observed as 3.93 ± 1.28 cm. There were 303 (34.8%) females who had an ovarian cyst on the left side, 437 (50.2%) females had a cyst on the right side and 130 (14.9%) females had bilateral cysts. In current clinical practice, functional ovarian cysts are treated either with OC or expectant management alone.⁶ In our study, out of 605 cases in whom cyst was resolved, 259 (59.5%) had expectant management while 346 (79.5%) had oral contraception. There was a significant difference observed ($p=0.000$) and oral contraception showed more cyst resolution as compared to expectant management, hence oral

contraception showed more success as compared to expectant management. Results of a study done by Naz T, matched with our study and reported that complete resolution of functional ovarian cyst after one cycle or 1 month was achieved in 59.9% (13/22) of females given placebo or has expectant management while with OC; there were 68% (17/25) females who had complete resolution of functional ovarian cyst. In that study, the success rate is higher with OC as compared to expectant management while the difference was insignificant (p -value=0.2630).⁸

The result of our study was in agreement with a study conducted by Horlen C in 2010.¹² MacKenna reported that complete resolution of functional ovarian cyst after one cycle or 1 month was achieved in 76% (19/25) of females given placebo or has expectant management while with OC; there were 72% (18/25) females who had complete resolution of functional ovarian cyst.

The difference between both groups was insignificant (p -value=0.374). In conclusion, expectant management is as effective as the OC method and even success is higher with expectant management and it was suggested that studies are required with a large sample size.⁷ The disappearance rates of spontaneously formed functional cysts in women using high dose OC, low dose monophasic OC, or multiphasic OC were similar to those of expectant management and reported as 88.9% in OC and 76% in expectant and as 100% and 94% respectively at 5 and 10 weeks.¹³ While in another study, Guia et al reported remission rates of 75.3% and 70% with OC and placebo respectively.¹⁴ Most ovarian cysts resolved within one month in both the groups. At 2 months 72.72% in Group E and 80.00% in OC group complete cyst resolution was observed. These results were irrespective of the cyst size. Although, this number was too small to reach a firm conclusion about this relationship. Statistically, no

significant difference was found in 2 groups, (p-value=0.1, insignificant).

Conclusion

It was concluded that oral contraceptives are more effective and successful in the resolution of ovarian cysts as compared to expectant management. We have also got local estimates on the basis of which we can suggest the use of oral contraceptives for the management of ovarian cysts.

Authors Contribution: **MN:** Design of work, acquisition and analysis of data and drafting. **SB:** Conception, Design of work and revising. **NR:** Conception, Interpretation of data and revising. **SZ:** Conception of work and drafting.

All authors critically revised and approve its final version.

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