

# ORAL CONTRACEPTIVES VERSUS EXPECTANT TREATMENT IN THE MANAGEMENT OF FUNCTIONAL OVARIAN CYSTS

Talat Naz, Zubaida Akhter, Tanvir Jamal

Department of Gynaecology, Khyber Teaching Hospital, Peshawar - Pakistan

## ABSTRACT

**Objectives:** To describe the presentation of spontaneously occurring functional ovarian cysts and compare the effectiveness of oral contraceptive pills with expectant management in the treatment of these cysts.

**Material and Methods:** This study was carried out in the outpatient gynaecological clinic of Hayatabad Medical Complex and Khyber Teaching Hospital, Peshawar from January 2009 to December 2010. Patients with functional ovarian cysts diagnosed on ultrasound were included. Ovarian tumours, malignancies, premenarche and post menopausal cysts were excluded. Patients were offered oral contraceptives or expectant management for 2 months. A repeat ultrasound was performed for cyst resolution.

**Results:** Forty seven patients with functional ovarian cysts aged between 16-35 years (mean age 22.9 years  $\pm$  3.5 years) were included. Nineteen patients (40.42%) were nulliparous while 14 (29.7%) were unmarried. In 13 (27.65%) it was incidentally diagnosed while other presentations were, pelvic pain 7 (14.89%), dysmenorrhoea 7 (14.89%), menstrual irregularity 6 (12.76%) and infertility 6 (12.76%). The cyst size ranged between 2-3cm in 23 (48.93%), 3-4cm in 17 (36.17%) and 4-5cm in 7 (14.89%). Twenty two (46.80%) counseled for expectant management (Group A) and Oral contraceptives (Group B) were given in 25 (53.19%). Cyst resolution at 2 months by ultrasound was 72.72% in Group A and 80.0% in Group B. There were 2 persistent Cyst in Group A and 3 (12.0%) in Group B. Five patients were lost to follow-up, 3 in A and 2 in Group B. There was no statistically significant difference in Cyst resolution in the two groups.

**Conclusion:** Functional ovarian cysts are common in women of reproductive age and are often asymptomatic. Expectant management achieves similar cyst resolution rates to oral contraceptives, and is a better alternative.

**Key Words:** Functional, physiological, ovarian cyst, oral contraceptive, management.

## INTRODUCTION

Ovarian Cysts are a common gynaecological problem among women of reproductive age and the prevalence is around 7%<sup>1,2</sup>. Most of these cysts are benign, particularly functional or physiological. Functional ovarian cysts include both follicular and corpus luteum cysts and often resolve spontaneously within one to two menstrual cycles<sup>3</sup>. Resolution may occur following resorption of cyst fluid into the peritoneal cavity causing transient pain, however medical intervention is usually not necessary. When the cysts are large, persistent or painful, they may require surgical intervention<sup>4</sup>. Ovarian cysts are found either during the course of investigation of abdominal pain or as a result of investigation for other reasons. It is important to distinguish between cysts that will require assessment and management and those that will resolve spontaneously<sup>5</sup>.

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. The corpus luteum may persist beyond its natural life span, secreting progesterone, thus causing menstrual irregularity occasionally<sup>5</sup>. A normal follicular cyst upto 3cm in diameter requires no further investigation or treatment. In a simple cyst, unilocular, echofree, no solid component and less than 7.9cm diameter, USG is repeated at 3-6 months. If it persists or enlarges then laparoscopic removal is advised.<sup>5</sup> Since early oral contraceptive (OC) were associated with a reduced incidence of functional ovarian cysts as they suppressed ovarian activity, they were used to treat cyst as well<sup>4</sup>. The reduced risk of ovarian malignancies for oral contraceptive users is strong and the risk for functional cysts is reduced by current use of OC<sup>6</sup>.

In current clinical practice functional ovarian cysts are treated either with OC or expectant management alone.<sup>1</sup> Physiological ovarian cysts are frequently found in young women and adolescent girls attending the gynaecological outdoor clinic, seeking treatment for it. The present study was undertaken to describe the presentation of these cysts and to compare use of oral contraceptive pills with expectant management in these patients, with the primary objective to compare cyst resolution rates of spontaneously occurring functional cysts.

### Address for Correspondence:

Dr. Talat Naz

H.No. P-8, University Campus,  
University of Peshawar, KPK - Pakistan  
Phone: 091-5853576, Mobile:0333-9254807,  
E mail: muqjmsaadan@yahoo.com

## MATERIAL AND METHODS

This study was carried out in the outpatient department of Gynae units of Hayatabad Medical Complex and Khyber Teaching Hospital, Peshawar between January 2009 and December 2010. The women in their reproductive period and adolescent girls who attended the gynaecological outpatient clinic for any gynaecological problem or lower abdominal pain and were found to have a functional ovarian cyst by ultrasonography (USG) were enrolled in the study. Exclusion criteria were premenarche, postmenopause, ovarian tumours requiring surgery (dermoid, endometriosis or malignancies) and pelvic inflammatory diseases. Information regarding age, symptoms like abdominal pain, menstrual cycle pattern, dysmenorrhoea, dyspareunia, obesity, hirsutism and obstetrical history were recorded. Ultrasound findings including cyst size, site and characteristics were noted.

Patients were counseled and either expectant treatment or hormonal treatment with OC containing ethinyl estradiol 0.03mg and levonorgestrel 0.15mg were started. Convenience sampling was used for patient selection. Patients were counseled how to take OC and informed of possible side effects. An appointment was scheduled at one month for all patients and ultrasonography performed. If the cyst did not show resolution the women continued the same treatment and was followed by a second USG after another months treatment. If the cyst still persisted or had progressed in size after 2 months of OC or expectant management, the woman was referred for laparoscopic or surgical evaluation.

A functional ovarian cyst was taken as a cyst of 2-6 cm in diameter, unilocular, thin walled, anechogenic with no solid parts, papillary formation, peritoneal mass or ascites. The main outcome measure was cyst resolution i.e. USG showed no cyst or cyst was regressing/reducing in size. Persistence was when USG detected the same ovarian cyst with same size or decrease less than 50%. The data was collected and analyzed. Frequencies and percentages were calculated. P-value calculated using chi-square test, where applicable and  $P < 0.05$  was taken as significant.

## RESULTS

During the study period 47 patients presenting with functional ovarian cyst fulfilling the inclusion criteria were included in the study. The age of the patients ranged between 16 years and 35 years (mean age,  $23.9 \pm 3.5$  years) with 48.93% (23 cases) aged 21-30 years. Fourteen (29.78%) were unmarried girls with functional ovarian cysts. Nineteen (40.42%) were nulliparous. Ovarian cyst was incidentally diagnosed in 13(27.65%) cases who underwent sonography for some other reason. Pelvic pain and dysmenorrhea in 7(14.84%) cases each, menstrual irregularity in 6(12.76%) cases. In 6(12.76%) cases cyst was

diagnosed when routine baseline ultrasound was done for infertility. Hirsutism, weight gain and acne were the other symptoms as shown in Table 1. The cyst size was between 2-3cm in 23 cases (12 in expectant and 11 in OC group), 3-4cm in 17 cases (8 expectant, 9 OC) and 4-5cm in 7 (2 expectant, 5 OC) cases. It was commonly found on left side 24 (51.06%) cases while bilateral cysts in only 2 cases (4.25%) as shown in Table 2.

Patients were counseled regarding the physiological nature of the cysts and were given

**Table 1: Patient Characteristics and Presentation (n=47)**

Characteristics	No. of patients and percentage
<b>Age:</b>	
< 20 years	20 (43.56%)
21-30 years	23 (48.93%)
31-35 years	4 (8.51%)
<b>Parity:</b>	
Unmarried	14 (29.78%)
Nulliparous	19 (40.42%)
P <sub>1</sub> -P <sub>2</sub>	12 (25.53%)
> P <sub>3</sub>	2 (4.25%)
<b>Presentation:</b>	
Incidental finding	13 (27.65%)
Pelvic Pain	7 (14.89%)
Dysmenorrhoea	7 (14.89%)
Menstrual irregularity	6 (12.76%)
Weight gain	3 (6.38%)
Hirsutism	2 (4.25%)
Acne	3 (6.38%)
Failure to Conceive	6 (12.76%)

**Table 2: Cyst Size and Site (n=47)**

Size and Site	No. of patients and percentage
<b>Size:</b>	
2-3 cm	23 (48.93%)
3-4 cm	17 (36.17%)
4-5 cm	7 (14.89%)
<b>Site</b>	
Right ovary	21 (44.6%)
Left ovary	24 (51.06%)
Bilateral	2 (4.25%)

**Table 3: Management and Out Come (n=47)**

	<b>Expectant Treatment</b>	<b>OC</b>
Total patients	22/47 (46.80%)	25/47 (53.19%)
<b>OUTCOME:</b>		
Resolution at 1 month	13/22 (59.9%)	17/25 (68.00%)
Resolution at 2 months	16/22 (72.22%)	20/25 (80%)
Persistent cysts	2 (9.09%)	3 (12.0%)
Increased in size	1 (4.54%)	0
Lost to follow up	3 (13.63%)	2(8.0%)

expectant treatment or oral contraceptive pills. In patients with menstrual irregularity and dysmenorrhoea, OC were preferred while majority of the unmarried and nulliparous consented to expectant management. Only 2 patients put on expectant treatment wanted OC and were shifted to the other group. Table 3 shows the treatment and outcome. Twenty two (46.80%) patient were on expectant management (Group A) and 25(53.19%) were started on OC (Group B). At followup USG after 1 month the cyst had resolved in 13/22 (59.09%) in expectant group and 17/25 (68.00%) in patient using OC, where as at 2 months USG, cysts had resolved in another 3 in expectant and 3 in OC group making a total of 16(72.72%) and 20(80.00%) respectively. No statistically significant difference (p value = 0.1) was found in resolution rates in the 2 groups. Three patients were lost to follow-up in Group A, 2 in Group B, the cyst persisted in 2 (9.09%) in Group A and 3 (12.00%) in Group B, while it increased in size in 1(4.54%) in Group A. Symptoms like pain, dysmenorrhea improved with symptomatic treatment like mefenamic acid. Menstrual irregularity improved with OC treatment. Overall patient satisfaction and response with the treatment were equal in both groups. Patients in whom the cysts persisted or increased in size were admitted for laparoscopic or conventional surgery.

## DISCUSSION

The vast majority of ovarian cysts in women of reproductive age are functional, either follicular or cystic corpus luteum<sup>7</sup>. The findings of our study suggest functional ovarian cysts are often asymptomatic and seen in relatively younger age group. The mean age of patients was  $23.9 \pm 3.2$  years (range 16-35 years) with 43(91.48%) aged below 30 years. It was incidentally diagnosed in 13 (27.65%) while USG was done for pelvic pain and dysmenorrhoea in 7 (14.89%) cases each while 6

(12.76%) had menstrual irregularity. In other studies, Yousaf F. et al, reported 66.66% (38 cases) of the study population as less than 30 years, while 45.61% had dysmenorrhoea, 24.5% had menorrhagia and 19.29% had lower abdominal pain<sup>8</sup>. Others have reported follicular cysts a common finding with mean ages as 36.7 and  $39.1 \pm 6.5$  years and abdominal pain and discomfort as a common presentation<sup>1</sup>. Yasmin S reported in a series of 71 patients 89.71% ovarian tumours were benign and of these 27.86% were follicular Cysts<sup>9</sup>. In a histopathological profile of cases of oophorectomies done over a period of 10 years, 22.8% were corpus luteum cysts and follicular cysts were seen in 50% of bilateral presentation<sup>10</sup>.

Most simple cysts resolve spontaneously over a period of 3-6 months<sup>5</sup>. Suppression of ovulation results in decreased cyst development since many functional cysts occur as a result of ovulation, this led to the conclusion that oral contraceptives were useful in treating functional cysts<sup>11</sup>. Many previous studies have also indicated the use of OC with a lower risk of occurrence of functional ovarian cysts<sup>12-15</sup>. OC not only suppress ovulation but also suppress pituitary gonadotrophin release and a direct effect on gonads<sup>16</sup>. Expectant management has been suggested to have the same effectiveness as hormonal treatment<sup>17</sup>.

Most ovarian cysts resolved within one month in both the groups. At 2 months 72.72% in Group A and 80.00% in OC group complete cyst resolution was observed, irrespective of the cyst size, although the numbers were too small to reach a firm conclusion about this relationship. There was no statistically significant difference in 2 groups, (p value = 0.1, insignificant). Result of our study was in agreement with other studies<sup>3,7,11</sup>. Mackenna et al. have reported Cyst resolution rates of 72% in OC and 76% in expectant group<sup>7</sup>. These correlate with the findings in our study.

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<sup>17</sup>. While in another study, Guia et al reported remission rates of 75.3% and 70% with OC and placebo respectively<sup>18</sup>. The variation in disappearance rates in our study and other studies may be attributed to small number of subjects in both groups as well as the baseline characteristics of the study population might have been different. In the present study cysts were persistent in 2(9.09%) in Group A and 3(12%) in Group B, while 1 increased in size and they were referred for surgery and found to be serous Cystadenomas in 2, endometriosis in 3 and persistent follicular cyst in 1 case. Similar findings were reported for cysts persisting after 2 months by other authors<sup>1,16</sup>.

The present study results together with those of other studies show that OC are not superior to expectant management for functional ovarian cysts. A recent Cochrane review of seven randomized controlled trials concluded that combined oral contraceptives did not hasten the resolution of functional ovarian cysts compared with expectant management, regardless whether the cysts were spontaneous or related to ovulation induction<sup>3</sup>. Mckenna et al, suggested that OC should be used to treat functional ovarian cysts in cases having anovulatory cycles in order to induce the next period and to start a new cycle of ovulation induction<sup>7</sup>.

## CONCLUSION

Oral contraceptive therapy is very effective in functional ovarian cysts but expectant management achieves similar success rates and is therefore a good alternative to OC therapy in functional cysts.

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