

Frequency of Endometriosis in females presenting with Infertility

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ABSTRACT

Background: Infertility is an inability to get pregnancy or give birth to a child. Several factors may be involved in development of infertility. The endometriosis is the devastating syndrome which may be a cause of infertility in females.

Aim: To assess the frequency of endometriosis in females presenting with infertility in a tertiary care hospital.

Methods: This cross sectional study was conducted in the Department of Obstetrics & Gynecology, Services Hospital, Lahore for 6 months. 150 females underwent laparoscopic diagnosis of endometriosis. All this information was recorded on proforma. The collected data was entered and analysed statistically by using SPSS version 20.

Results: The mean age of patients was 29.28 ± 6.00 years. The mean weight of females was 67.68 ± 10.60 kg, mean height was 1.60 ± 0.05 meters and mean BMI was 26.60 ± 4.49 kg/m². The mean duration of marriage was 7.41 ± 5.57 years. In this study, 71 (47.33%) females had primary infertility while in 79 (52.67%) females had secondary infertility. There were 21 (14%) females who had endometriosis while 129 (86%) females did not have endometriosis.

Conclusion: Thus the frequency of endometriosis was low in females with infertility but not ignorable.

Key words: Endometriosis, females, infertility, laparoscopy

INTRODUCTION

In health sector, reproductive health is the primary goal. Infertility is the failure to get pregnancy after vulnerable intercourse for a long time. Infertility causes stress and emotional disturbances for both a couple. Several factors, like genetic, physiological, social, environmental, systemic and non-systemic diseases cause infertility. According to WHO infertility may also be develop particularly due to presence of sexually transmitted diseases or infections in the reproductive tract and are very challenging^{1,2}.

Infertility affects about 48 million females all over the world. The highest prevalence of females-related infertility is in South & Central Asia, North Africa / Middle East, Sub-Saharan African countries, & Central / Eastern Europe³. Out of all infertility cases, about 20-30% cases are owing to the male infertility, while 20-35% are because of female infertility, while 25-40% cases both partners showed infertility or incompatibility. While about 10-20% cases are idiopathic and seems no cause of infertility. In female's related infertility, the most common problem is ovulatory, that is usually indicated by female herself by amenorrhea or abnormality in menstrual cycle⁴. Endometriosis is the devastating complaint with high proportion of recurrence. The cause and pathogenesis of endometriosis are still uncertain. Characteristically, in endometriosis, abdominal pain is a common symptoms and also lead to infertility, while 20-25% females do not showed any symptoms.⁵ In around 20-50% females with infertility are diagnosed to have endometriosis⁵.

Endometriosis can disturb female of any reproductive age group i.e. from pre-menarche to post-menopausal age group, irrespective of the race or ethnicity, also in the females who showed primary or secondary infertility. Endometriosis is mainly the disease of reproductive age era. The prevalence of endometriosis in females of reproductive age group is around 6-10%.⁵ It is more prevalent in females having problem of infertility as well as in females with chronic lower abdominal or pelvic pain (35-50%)^{5,6}. Its prevalence is less in post-menopausal females,⁷ as well as the teenage girls may also develop endometriosis, even before reaching to the age of menarche. They some show symptoms but sometime may remain asymptomatic^{8,9}. This rate of endometriosis is higher as compared to the overall rate of endometriosis in females with problem of infertility, which is predicted as 30%^{10,11}. Meuleman et al observed that the prevalence of endometriosis in infertile females was 47%. The rate of endometriosis was significantly higher in females with primary infertility as compared to females with secondary infertility i.e. 56% vs. 30%, $P < 0.003$ ¹².

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Rationale of this study is to find the frequency of endometriosis in females presenting with infertility. Literature has shown that the incidence of endometriosis varies in infertile females. But no local evidence is present which show the extent of this problem in infertile females locally. So through this study we will get local evidence which could help us in planning the better management protocols for such cases.

The objective of the study was to assess the frequency of endometriosis in females presenting with infertility.

MATERIAL & METHODOLOGY

After permission from IRB, this cross-sectional study was conducted in the Department of Obstetrics & Gynecology, Services Hospital, Lahore for 6 months i.e. 1st July, 2021 to 31st Dec, 2021. Sample size of 150 cases was estimated by keeping confidence level as 95%, margin of error as 7% and percentage of endometriosis i.e. 25%⁵ in females having infertility. Sampling technique used was non-probability, -consecutive sampling

Sample selection: Married females of age 20 – 40 years with complaint of infertility (inability to get pregnant after a year of unprotected intercourse). Females with either type of infertility; primary and secondary were included. While females refused to undergo laparoscopy, with previous laparoscopic or other surgical diagnosis of endometriosis, hypertension, diabetes, PCOS, leiomyoma, fibroids, intrauterine, cervical or ovarian malignancy were excluded from the study

Data Collection Procedure: 150 females were included through OPD fulfilled the inclusion / exclusion criteria. Informed consent was obtained. Demographic profile (name, age, marriage duration, type of infertility) was also noted. Later on, females underwent laparoscopic diagnosis of endometriosis. Endometriosis was labeled if there was pain in lower abdomen and endometrial implants outside the uterus on laparoscopy. All the data was recorded on proforma.

Data analysis: The data was analysed in SPSS version 20. Numerical variables such as age, weight, height, BMI and duration of marriage were presented in form of mean \pm S.D. Categorical variables such as type of infertility and endometriosis were presented as frequency and percentage.

RESULTS

The mean age of patients was 29.28 ± 6.00 years. The mean weight of females was 67.68 ± 10.60 kg, mean height was 1.60 ± 0.05 meters and mean BMI was 26.60 ± 4.49 kg/m². The mean duration of marriage was 7.41 ± 5.57 years. In this study, 71 (47.33%) females had primary infertility while in 79 (52.67%) females had secondary infertility (Table 1).

There were 21(14%) females who had endometriosis while 129 (86%) females did not have endometriosis (Fig 1).

Data was stratified for age of patients. In patients aged 20-30 years, endometriosis was present in 16(17.2%) patients. In patients aged 31-40 years, endometriosis was present in 5(8.8%) patients. The difference was insignificant (p value > 0.05). Data was stratified for BMI of patients. In normal BMI patients, endometriosis was present in 10(16.9%) patients. In overweight patients, endometriosis was present in 4(7.7%) patients. In obese patients, endometriosis was present in 7(17.9%) patients. The difference was insignificant (P value > 0.05). Data was stratified for duration of marriage. In patients who were married for 1-10years, endometriosis was present in 17(15.7%) patients. In patients who were married for 11-0years, endometriosis was present in 4(9.5%) patients. The difference was insignificant (P value > 0.05). Data was stratified for type of infertility. In patients with primary infertility, endometriosis was present in 14(19.7%) patients. In patients with secondary infertility, endometriosis was present in 7(8.9%) patients. The difference was insignificant (p - value > 0.05) (Table 2).

Table 1: Demographics of females (n = 150)

Age (years)	29.28 \pm 6.00
Weight (kg)	67.68 \pm 10.60
Height (m)	1.60 \pm 0.05
BMI (kg/m ²)	26.60 \pm 4.49
Duration of marriage (years)	7.41 \pm 5.57
Type of infertility	
Primary	71 (47.3%)
Secondary	79 (52.7%)

Fig 1: Distribution of endometriosis

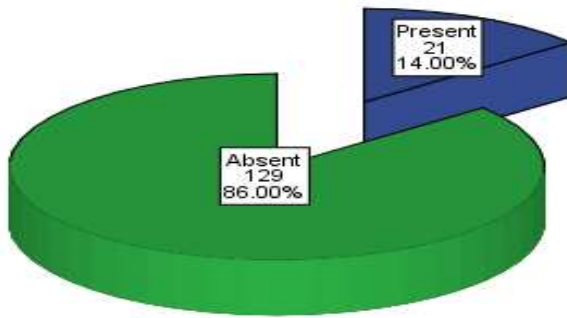


Table 2: Comparison of endometriosis in different effect modifiers group

Endometriosis		Present	Absent	P - value
Age (years)	20-30	16 (17.2%)	77 (82.8%)	0.149
	31-40	5 (8.8%)	52 (91.2%)	
BMI	Normal	10 (16.9%)	49 (83.1%)	0.266
	Overweight	4 (7.7%)	48 (92.3%)	
	Obese	7 (17.9%)	32 (82.1%)	
Duration of symptoms	1-10	17 (15.7%)	91 (84.3%)	0.324
	11-12	4 (9.5%)	38 (90.5%)	
Type of infertility	Primary	14 (19.7%)	57 (80.3%)	0.056
	Secondary	7 (8.9%)	72 (91.1%)	

DISCUSSION

Endometriosis can be predicted in about 10-15% of reproductive aged females¹³. The relationship between infertility and endometriosis is well-supported in previous literature, but the certain cause-effect relationship is still under debate. The rate of endometriosis rises significant from 25-50% in infertile females and 30-50% females with endometriosis have problem of infertility¹⁴.

In our study, the mean age of patients was 29.28 \pm 6.00 years. The mean weight of females was 67.68 \pm 10.60 kg, mean height was 1.60 \pm 0.05 meters and mean BMI was 26.60 \pm 4.49 kg/m². The mean duration of marriage was 7.41 \pm 5.57 years. In this

study, 71(47.33%) females had primary infertility while in 79(52.67%) females had secondary infertility. There were 21(14%) females who had endometriosis while 129(86%) females did not have endometriosis.

This 30% prevalence of endometriosis has been predicted in infertile females which is higher than overall prevalence of endometriosis in such females^{10,11}. Meuleman et al., conducted a study in infertile females and found the frequency of endometriosis in 47% cases as the cause of infertility. The frequency of endometriosis was also observed to be significantly more in females who presented with complaint of primary infertility as compared to females presented with complaint of secondary infertility i.e. 56% vs 30%, P value < 0.003 ¹². The overall frequency of endometriosis is predicted to be 30% in females who had complaint of infertility, either primary or secondary¹⁵.

But the frequency of endometriosis rises in females who also have complaint of chronic lower abdominal or pelvic pain along with infertility i.e. $> 33\%$ ¹⁶. The laparoscopy is a gold standard method for the detection and confirmation of endometriosis. Much improvement has been occurred during the last 25 years for the diagnosis & classification of the endometriosis. But the outcomes concerning the incidence & prevalence of endometriosis in infertile females must be interpreted carefully^{17,18,19}.

Epidemiological data indicated that the frequency of the endometriosis is stable and did not increase during last three decades. It remains at 2.37-2.49 per 1000 persons per year, which parallels to an estimated prevalence of about 6 - 8%.²⁰ Waller et al., piloted a study on 174 females who presented with complaint of infertility. They done laparoscopic procedure in all females to determine the cause of endometriosis. Females with azoospermic husbands showed the prevalence of endometriosis as 20.7%, and this is probable to reveal the true prevalence of endometriosis in the group of randomly selected ordinary females²¹.

We stratified data for age of patients. In patients aged 20-30 years, endometriosis was present in 16(17.2%) patients. In patients aged 31-40 years, endometriosis was present in 5(8.8%) patients. The difference was insignificant (p - value > 0.05). We stratified data for BMI of patients. In normal BMI patients, endometriosis was present in 10(16.9%) patients. In overweight patients, endometriosis was present in 4(7.7%) patients. In obese patients, endometriosis was present in 7(17.9%) patients. We stratified data for duration of marriage. In patients who were married for 1 - 10 years, endometriosis was present in 17(15.7%) patients. In patients who were married for 11-12 years, endometriosis was present in 4(9.5%) patients. We stratified data for type of infertility. In patients with primary infertility, endometriosis was present in 14(19.7%) patients. In patients with secondary infertility, endometriosis was present in 7(8.9%) patients.

CONCLUSION

Thus the frequency of endometriosis was low in females with infertility but not ignorable. Now we have got the local evidence and we are now able to plan screening and management protocols to rectify the problem.

Conflict of interest: Nil

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