

# Etiology of Female Infertility in age group 20-35 years - A study based on Laparoscopic findings

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## ABSTRACT

**Objective:** To find out laparoscopic findings in cases of infertility encountered in different age groups.

**Methodology:** This observational study was carried out in Department of Obs. & Gynae, Sir Ganga Ram Hospital, Lahore. 50 patients were enrolled during the study period of one year. The age range was between 20- 40 years. Duration of marriage was more than 2 years. These patients were not using any contraceptives and their husband's semen analysis was normal.

**Results:** Among fifty patients which were studied, laparoscopy revealed normal pelvic organs in 20% of the cases. Unilateral or bilateral tubal blockade was present in another 20% of the cases. Fourteen percent of the patients had peri-tubal, peri-ovarian and pelvic adhesions. Endometriosis was present in 16% of the patients. Polycystic ovaries(PCO) was another significant finding present in 16% of the patient. Ten percent of the patients had hydrosalpinx / pyosalpinx, whereas genital tract tuberculosis (T.B) was present in 4% of the cases.

**Conclusion:** Laparoscopy is a useful diagnostic tool in the evaluation of infertility in our setup.

**Key words:** Infertility, Laparoscopy, Etiology

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## INTRODUCTION

Infertility is defined as failure to conceive after one year of regular coitus, without any contraception. It is primary if the patient has never been pregnant or secondary if after one or more pregnancies, there is no further conception<sup>1</sup>. Infertility is a common problem resulting from one or more factors either in male or female. In female reproductive tract, uterotubal factors are important because they are generally manageable, tubal factor being the most common<sup>2</sup>. One measureable factor that clearly affects fertility is maternal age. Marital age-specific fertility rates in a series of historical population showed a dramatic decline after 35 years of age<sup>3</sup>.

Laparoscopy is more truly a revolution, advantage being the simultaneous diagnosis of lesions, establishment of prognosis and the actual treatment<sup>4</sup>. For the investigation of infertility, it is the method of choice, yielding much better results than hysterosalpingiography and abdominal ultrasound<sup>5</sup>. Presently laparoscopy has become the most important investigative tool for the evaluation of tubal disease in developed countries of the world<sup>6</sup>.

The primary use of laparoscopy is as a surgical tool, with sterilizations being the overwhelming indication. The laparoscope is used less frequently as a non-surgical tool with major indication being for the diagnosis of infertility and/or amenorrhoea or for evaluation of chronic pelvic pain<sup>7</sup>. Infertile patients with obvious pathologies diagnosed laparoscopically include tubal adhesions, uterine diseases, ovarian status, endometriosis or pelvic inflammatory disease<sup>8</sup>.

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Besides its diagnostic value, laparoscopy is a useful operative tool for the treatment of infertility<sup>9</sup>. A diagnosis of unexplained infertility is established only when standard clinical investigations yield normal results. When tubal patency has been established by hysterosalpingiography, laparoscopy has been suggested as a mandatory step to prove the existence of peritubal adhesions and endometriosis as causes of infertility<sup>10,11</sup>. Laparoscopic ovarian drilling in patients with polycystic ovaries produces long term improvement in menstrual regularity and reproductive performance<sup>12</sup>. Laparoscopy is a method of choice which provides safe diagnosis, estimation of disease and an optimal method of treatment<sup>13</sup>.

## METHODOLOGY

This study was carried out in the Department of Obstetrics and Gynaecology Unit-III, Sir Ganga Ram Hospital, Lahore from January 2011 to December 2011. It was an observational study. During this study, fifty patients were studied. Age of the patients, was between 20-40 years. Duration of marriage was more than 2 years. These patients were not using any contraception and their husband semen analysis was normal. A detailed history, general physical examination, systemic examination, pelvic examination and basic endocrinological investigation were carried out. Diagnostic laparoscopy was performed in post menstrual phase under general anaesthesia. Any associated contraindication to laparoscopy was excluded. All data was analysed with statistical package programme SPSS version 10. Student t-test was applied and P value calculated to

assess the degree of significance. P value <0.05 was considered as significant.

**RESULTS**

The present study showed maximum cases of infertility (52%) in the age group of 21-25 years followed by 28% cases in the age group of 26-30 years (Table 1). As per the period of infertility after marriage is concerned, majority of the cases came to the hospital within 1-5 years of infertility (Table 2).

On laparoscopy, forty out of fifty patients revealed abnormal findings While 10 patients had normal pelvic findings. Tubal blockade was present in 20% of the cases. Peritubal, peri-ovarian and pelvic adhesions were present in 14% of the cases. Eight cases (16%) had endometriosis, another 16% had polycystic ovaries. Hydro/pyosalpinx was present in 5 cases and genital tract tuberculosis was present in 2 cases (Table 3)

Table 1: Distribution of cases of infertility according to age

Age in years	No.	%age
21 – 25	26	52.0
26 – 30	14	28.0
31 – 40	10	20.0

Table 2: Distribution of cases according to the duration of infertility

Duration of infertility (years)	No.	%age
1 – 5	36	72.0
6 – 10	14	28.0

Table 3: Pelvic findings in study population (n=50)

Pelvic findings	No.	%age
Normal pelvic organs	10	20
Unilateral/ Bilateral tubal blockade	10	20
Peri-tubal, peri-ovarian and pelvic adhesions	7	14
Endometriosis	8	16
Polycystic ovaries	8	16
Hydrosalpinx / pyosalpinx	5	10
Genital tract tuberculosis	2	4

**DISCUSSION**

In our country infertility and uncontrolled fertility are two major problems affecting women’s health, quality of life, leading to social and psychological upsets. On one hand infertility brings misery and insecurity to many women who failed to conceive. Facing the threat of divorce, on the other hand, uncontrolled fertility is major cause of maternal morbidity and mortality.

Infertility is defined as the inability to conceive after one year of unprotected intercourse. Approximately 10% to 15% of couples in the reproductive age groups are affected by infertility.

The number of infertile couples rises with the increasing age of the women. Women are born with a finite number of oocytes (egg). Thus, as the reproductive years progress, the number and the quality of the oocytes diminish. Compared with women aged 20 to 24, the fertility of women age 30 to 34 is reduced by 14% and those aged 35-39 years by 31%. This reduction in fertility is noted to a much greater extent after the age of 40.<sup>14</sup> Age has a significant impact on the chance of being pregnant as well. Women over 35 have about 2/3<sup>rd</sup> decrease in the rate of pregnancy compared to women aged 20-25<sup>15</sup>.

Gynaecologists perform diagnostic laparoscopies for multiple indications. It is a commonly carried out investigation for pelvic pain, infertility, assessment of pelvic masses and to assess treatment efficacy. The diagnostic laparoscopy has the advantage of being quick, safe and an easy way of assessing the peritoneal cavity, which causes minimal discomfort<sup>16</sup>.

Over the last decade laparoscopic equipment has been refined and an office laparoscopy can be performed under light sedation and local anaesthesia<sup>17</sup>.

The study conducted at Agha Khan University Hospital analyzed 509 laparoscopic examinations in cases of infertility. In case of infertility, adhesions (20%) and tubal blockage (15%) obviously could not be diagnosed without laparoscopy. Their results are comparable to our study where adhesions were found in 14%, tubal blockage in 20% and PCO’s in 15% of cases They inferred that diagnostic laparoscopy is a minimally invasive procedure for accurate diagnosis of gynaecological disorders and can provide insight into the spectrum of disease seen in Pakistani women with pelvic pain and infertility.<sup>18</sup>

The age of the female partner is a very important in consideration of probability for conception. There is lack of awareness about the decline in fertility with advancing age of the female partner. There is a slow decline in pregnancy rate in the early 30s. This decline is more substantial in the late 30s and early 40s and few women over 45 remain fertile. The study by Tietzee et al reported that by age 30 year, 7% of couples were infertile, by age 35, 11% of couples and by the age 40 years 33% couples were infertile.<sup>19</sup> Another study was conducted in Europe center of natural family planning. The percentage of infertility was estimated at 8% for women aged 19-26 years, 13-14% for women 27-35 year, 18% for women aged 35-39 years. Increased prevalence of infertility in older couples is attributable to decline in fertility rate rather than to absolute sterility<sup>20</sup>.

There are variety of disorders such as endometriosis and certain sexually transmitted diseases (STDs), that may worsen overtime and eventually lead to infertility, meaning that older a person gets the more likely infertility will develop if she has any of such underlying conditions.<sup>21</sup> The Royal Commission on new reproductive technology estimated that at least 20% of all infertility among Canadian couples is attributed to damage to the female partner's fallopian tubes which is a direct result of PID caused by STD infection. It was more prevalent in age group between 25-34 years.<sup>21</sup> These result are comparable to our findings. The present study was carried to highlight the relative importance of laparoscopic evaluation in the etiology of infertility in our setup.

## CONCLUSION

This study was carried out to highlight the relative importance of laparoscopic evaluation in the etiology of infertility in our setup. Tubal abnormalities were detected in most of the infertile patients brought to the hospital for treatment. Laparoscopy is very effective for the evaluation of such cases and has got advantage of simultaneous diagnosis of other pelvic pathologies. Also it is important from therapeutic point of view as ovarian drilling can be done in case of polycystic ovaries which improves the chances of conception in these patients

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