

## SUBFERTILITY: EXPERIENCE IN A TERTIARY CARE HOSPITAL

ASIFA GHAZI, MUHAMMAD SADDIQUE\*, NASIMA SIDDIQ, SHAZIA JABBAR,  
TEHMINA ALI, SUNITA JAIPAL

Department of Gynaecology and Obstetrics (Unit III), DUHS & Civil Hospital, Karachi

Department of Surgery (Unit V), DUHS & Civil Hospital, Karachi\*

### ABSTRACT

**Objective:** To determine the frequency of different causes responsible for subfertility in our setup.

**Design & Duration:** Prospective cross-sectional study from March 2005 to March 2006.

**Setting:** Outpatients Dept. (OPD) of Gynaecology & Obstetrics (Unit III), Civil Hospital, Karachi.

**Patients:** All patients who were diagnosed as subfertile.

**Results:** Amongst the 156 women included in the study, 85 (54.5%) had primary and 71 (45.6%) secondary subfertility. Majority (59%) of cases were between 21-30 years of age; 78 (50%) complained of subfertility only, while 26 (17%) had history of vaginal discharge, 34 (21%) menstrual disorders and 12 (8%) weight gain. Nineteen (14%) cases had family history of subfertility, 18 (12%) of congenital anomaly and 3 (2%) of genetic disorders. Abnormal hormonal profile was seen in 37 (27%) patients, whereas 63 (40.3%) had positive findings on pelvic ultrasound and 43 (27%) patients tubal blockage on hysterosalpinography.

Out of 156 women, 27 (17.3%) had Ovarian factor in the form of anovulation, polycystic ovarian syndrome and premature ovarian failure and 51 (32.7%) had Tubo-Ovarian factor in the form of tubal blockage, endometriosis, endometritis and uterine fibroid; in 19 (12.2%) cases both the partners had abnormality, in 40 (25.6%) the male partners had semen abnormality (25.6%), while in 19 (12.2%) no cause could be found.

**Conclusion:** A significant number of patients had secondary subfertility, mostly due to previous surgical interventions, and were suffering from anaemia and vaginal infection. Tubal blockage and male factors were the predominant causes of subfertility.

**KEY WORDS:** Subfertility, Menstrual Disorders, Endometriosis, Uterine Fibroid, Male Sterility

### INTRODUCTION

Subfertility is inability to ensure child bearing when it is wanted<sup>1</sup>. There is a wide variation in defining subfertility in terms of duration<sup>2</sup>. It is best defined as the inability to conceive after one year of unprotected regular intercourse<sup>3,4</sup>; based on this 60-80 million couples all over the world can be labelled as suffering from subfertility<sup>5</sup>. The prevalence of subfertility in industrialized

countries has been quoted as 20%<sup>6</sup>, and seems to be on the rise<sup>1,2,7,8</sup>. Life style factors e.g. diet, obesity, substance abuse, increased exposure to environmental toxins and stress influence the reproductive process negatively. As a result of increased public awareness about subfertility and its treatment options, more and more couples are expected to seek treatment for the condition<sup>9-12</sup>.

Subfertility is of two types i.e. primary - when there is an absence of a preceeding pregnancy, and secondary-when there was a preceeding pregnancy, irrespective of the outcome. Previous studies in Pakistan suggest a high incidence of primary (55-65%) subfertility than that of secondary subfertility (35-45%)<sup>13</sup>.

### PATIENTS & METHODS

This cross-sectional study was conducted in the Out-

### Correspondence:

Dr. Asifa Ghazi, Associate Professor,  
Department of Gynaecology & Obstetrics (Unit III),  
DUHS & Civil Hospital, Karachi.  
Phones: 4575896, 0300-9209028.

Age Group	Number	%
16-20 years	34	21.8
21-25 years	43	27.6
26-30 years	49	31.4
31-35 years	26	16.7
36-40 years	4	2.5

**Table I. Age Incidence**

patients Department of Gynaecology & Obstetrics (Unit III), Civil Hospital, Karachi from March 2005 to March 2006, to determine the frequency of different causes responsible for subfertility.

All patients who were unable to conceive after one year of regular unprotected intercourse were included in the study, while those not living with their spouses or using contraception were excluded.

In all patients with normal menstrual cycle, serum progesterone was checked on day 21, while in those with irregular cycles or with anovulatory cycles serum FSH and LH was done. In patients with hirsutism, obesity or galactorrhoea serum prolactin and TSH was also sent for testing. Pelvic ultrasonography was carried out in all the cases. Hysterosalpingography was performed in cases who had a past history of surgical intervention.

Data was collected on a specially designed proforma, and the results were later compiled and analyzed.

## RESULTS

Out of the 11547 women who attended the Gynaecology OPD, 211 (1.83%) complained of subfertility. Amongst these 45 conceived during the study and 10 were lost

**Table III. Clinical Finding on Examination**

Clinical Finding	No.	%
Anemia	65	41.7
Purulent Vaginal Discharge	42	26.9
Hirsutism, Obesity, Galactorrhoea	16	10.3
Multilpe Findings	3	1.9
No Positive Findings	30	19.2
Total	156	100.0

Presenting Complaint	No.	%
Subfertility only	78	50
Vaginal discharge	26	17
Menstrual disorder	34	21
Weight gain, Hirsutism	12	8
Multiple Symptoms	6	4

**Table II. Presenting Complaints**

to follow; these were excluded. Hence the remaining 156 patients were finally included in the study. Eighty five (54.4%) women had primary and 71 (45.6%) secondary subfertility, with history of abortion in 28 (39.4%), live birth in 40 (56.3%) and intrauterine deaths in three (4.2%) patients. Their ages are shown in Table I.

Out of 156 cases 78 (50%) complained of subfertility only, other symptoms are shown in Table II. Frequency of coitus was adequate in both the primary and secondary groups. One patient of primary subfertility had a past history of donor nephrectomy, while in the secondary group 12 patients had D&E, 10 had Caesarean section, two had myomectomy and salpingectomy each, and three had appendicectomy. Amongst the total 156 patients 19 (14%) had a family history of subfertility, 18 (12%) congenital anomaly, 28 (19%) multiple pregnancies and 3(2%) genetic disorders. The examination findings are depicted in Table III.

Abnormal hormonal profile was seen in 37 (27%) cases and positive pelvic ultrasound findings in 63 (40.3%) cases, like absent follicular development, thickened endometrium, fibroid uterus, polycystic ovaries, endometrios and fluid in the cul de sac. Hysterosalpingography, revealed blockage in 43 (27%) patients with a past history of abdominal surgery. In 59(38%) couples the male partner was responsible for subfertility (Table IV).

Out of 156 patients, 27(32%) had Ovarian factor in the

**Table IV. Male Factors in Subfertility**

Cause	No.	%
Erectile Dysfunction	19	32.20
Azo/oligo/asthenospermia (mumps, varicocele, cryptorchadism)	30	50.85
Tight urethral stricture	10	16.95

form of anovulation, polycystic ovarian syndrome and premature ovarian failure as the cause of subfertility, other causes are shown in Table V.

## DISCUSSION

The diagnosis of subfertility can be made only on the basis of the result of assessments of both the partners, though the major problem may be with only one partner. The evaluation of the female partner starts with taking a detailed history<sup>4,8</sup>. Clinical examination is again an important component of the evaluation of the subfertile couples<sup>4,14</sup>; 40% patients had anaemia and 17% purulent vaginal discharge.

Proper evaluation of the male partner is very important; in this study 40 out of the 59 affected male partners were sole responsible for subfertility as they had abnormal semen analysis due to mumps, varicocele, cryptorchism and tight urethral stricture, while 19 had some form of erectile dysfunction.

Hormonal analysis in subfertile females is one of the basic tests<sup>1,3,4,15,16</sup>; all our patients had progesterone, FSH and LH levels done, while prolactin and TSH were performed where indicated. Out of 156 patients, 37(27%) had abnormal hormonal profile, indicating anovulation and high prolactin and polycystic ovarian diseases.

Pelvic ultrasound was performed in all cases; 63 (40.3%) had positive findings of polycystic ovaries, fibroid uterus, thickened endometrium etc. as in other series also<sup>17</sup>. Laparoscopy is the gold standard for the evaluation of tubal patency<sup>13,18</sup>. It could be offered to couples who have repeatedly failed subfertility treatment to detect subtle abnormalities such as early stage endometriosis<sup>18,19</sup>. Hysterosalpingography is an important diagnostic tool where laparoscopy is not available<sup>14,16,20</sup>; in this study it was done in 100 patients who had a normal hormonal profile, but there was a strong suspicion of tubal and uterine factor subfertility.

Semen analysis is a basic investigation among the male

**Table V. Causes of Subfertility**

Causes	No.	%
Ovarian Factor	27	17.3
Tubo-Ovarian Factor	51	32.7
Semen Abnormality	40	25.6
Both Partners Abnormal	19	12.2
Unexplained Subfertility	19	12.2

partners as mentioned by all workers<sup>21-23</sup>; in this study 40 (26%) males had abnormal readings like oligospermia, oligoasthenospermia and azoospermia. These values were similar to those of the world literature<sup>12,16,17</sup>.

In 30 (19.2%) cases we could not find the cause of subfertility; these were labelled as unexplained subfertility cases. Those patients in whom the salpingogram showed tubal blockage (32.6%), uterine synechae are labelled as tubal factor (uterine factor is included), while those who had a clear cut hormonal abnormality and absence of ovulation (17.3%) by different methods were labelled as ovarian factors. Cases where abnormalities was found in both partners (12%) were labelled as combined factor, whereas cases in which female patients were normal but their male partners had obvious pathology were labelled as male factors. Johnson<sup>22</sup> has quoted that male factors contribute 30%, ovarian factors 25% and tubal factors 25% cases of subfertility in her study, while in 20% cases there was no explanation.

## CONCLUSION

- A significant number of patients had secondary subfertility.
- Majority of secondary subfertility patients had a past history of surgical intervention which could have resulted in adhesions and tubal blockage.
- Majority of patients were anaemic and had genital infection which reflects on the nutritional and socio-economic status of our female population.
- Tubal and male factors were more common.
- The results of this study are similar to those of other series in the world literature.

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