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Study on causes of infertility

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Abstract
Background: Infertile women are severely stigmatized by Indian society. A new definition of reproductive health envisages the provision of a woman's health package which includes family planning and healthy motherhood, the treatment of reproductive infections, and the support of infertile couples for the delivery of children.
Objective: Prevalence of female infertility causes to be measured. To explore the various causes that affect women's infertility.
Methods: Detailed history of the patient, thorough general examination, height, weight, speculum, TFT, urine routine, and USG abdominal and pelvic.
Results: Majority of the patients belonged to the age group of 21 to 25 yrs with 38%. Majority of the patients were married for around 5 to 10 yrs around 53% of them. Family history was seen in 28% of the cases. Around 43% were overweight and 10% were obese. In 44% of the cases menstrual cycle was irregular. Dysmenorrhea was seen in 33% of the cases. Vaginal discharge was seen in 30% of the cases. During hysteroscopy tubal block was seen in 10% of the cases. In pelvic examination Foul smelling vaginal discharge was seen in 28% of the cases. Bulky uterus was seen in 10% of the cases. Fornixes tender restricted mobility was seen in 7% of the case. In USG examination PCOD was seen in 50% of the cases. Fibroid and Chocolate cyst was seen in 7.5% of the cases each and adenomyosis was seen in 2.5% of the cases.
Conclusion: Female infertility causes should be systematically analyzed starting from history, analysis and research. The main cause of female infertility is polycystic ovarian disease (PCOD), which is rising because of lifestyle changes. PCOD is also easy to deal with and a good prediction of infertility relative to the other factors. Other medical conditions such as thyroid dysfunction and hyperprolactinemia will coexist with PCOD, which must be tested and treated accordingly for better outcomes.

Keywords: PCOD, hysteroscopy, dysmenorrhea, tubal block

Introduction
Parenthood is a human necessity. There is a virtual universal desire to replicate. All humans want to become parents and look after their children. Parental desire itself is a step in forming a family [1].
Infertility is generally characterized as unwanted failure after a year of unprotected intercourse. If after sexual intercourse, a woman has never conceived after one year it is primary infertility. Whether a woman has conceived and then cannot reproduce for a span of one year despite sexual intercourse, it is secondary infertility [2].
One contradiction in Indian culture is that fertility and childbirth in marriage are extremely important on the one hand. If a woman does not conceive within one year of marriage, she is seen in Indian culture as a shame. Sadly, the finger is pointed at the woman for infertility, not the husband. Couples may be reluctant to pursue medical advice by being fearful of definitive diagnosis, psychological anguish, physical pain in testing and a lack of conceivability. Primary infertile couples typically have a greater priority in care than secondary infertile couples [3].
The WHO predicts a general infertility rate of 3.9 to 16.8 percent in India. Supportive and therapeutic advice is an integral aspect of a fertility unit's programmes. The anxiety of infertiles, the apprehension and frustration involved with systems of therapy, the uncertainty of success and the probability of failure was there in the back of the mind. They should be helped with professional guidance [4].
According to the literature review, 80 million individuals are infertile across the globe (10%-15%) and two-thirds of cases of infertility are exclusively attributable to women. In this study the causes of female infertility are identified and assessed and the risk percentage determined for patients presenting at the outpatient department [5].

Material and methods

Study Design: Non-randomized cross-sectional study
Study setting: Outpatient department of obstetrics and gynecology.

Research duration: One year

People with a history of infertility visiting the outpatient department of Obstetrics, taking into account inclusion and Criteria for exclusion.

Inclusion Criteria

The following criteria apply to women in the outpatient gynecology department:

- 20 to 40 years of age
- married for >1 year and staying with a husband;
- Do not use any contraceptives
- couples that do not conceive after a pregnancy,
- For two years, in the absence of abortion, lactation or postpartum amenorrhea.

Exclusion Criteria

- Those unwilling to participate.
- Women on *In vitro* fertilization (IVF) treatment.

A comprehensive history of patients including socio-economic status, menstrual history, coital history, obstetrical history, the previous medical history, family history, psychological history and the history of patients was noted after receiving informed consent from patients. History of surgery. The thoroughness and breast examination, cardiovascular system, metabolic system, abdominal system, was followed by a thorough general physical assessment of height, weight, pulse, blood pressure, respiratory rate and thyroid examination, speculum examination, pelvic examination and rectal exam, also performed and recorded.

Ethical Clearance: Ethical clearance was obtained from the institutional committee prior to the commencement of the study.

Observation and results

Table 1: Distribution of patients according to age, socio economic, marital duration, Family history and BMI parameters

Age (In yrs)	No. of patients	Percentage
21 – 25	15	37.5%
26 - 30	13	32.5%
31 - 35	10	25%
36 - 40	2	5%
Total	40	100%
Socio economic status		
Middle	2	5%
Upper middle	38	95%
Married for yrs		
<5 yrs	16	40%
5-10 yrs	21	52.5%
>10 yrs	3	7.5%
Family History		
Present	11	27.5%
Absent	29	72.5%
BMI		
18.5-24.9	19	47.5%
25-29.9	17	42.5%
>30	4	10%

Majority of the patients belonged to the age group of 21 to 25 yrs with 38% and the least belonged to the age group of 36 to 40 yrs with 5%. Majority of the patients around 95% belonged to the upper middle class. Majority of the patients were married for around 5 to 10 yrs around 53% of them. Family history was seen in 28% of the cases. Around 43% were overweight and 10% were obese.

Table 2: Distribution based on menstrual cycle, Dysmenorrhea, Vaginal discharge and Hysteroscopy

Menstrual cycle	No. of patients	Percentage
Irregular	18	44.2%
Regular	22	55.8%
Dysmenorrhea		
Present	12	32.6%
Absent	28	67.4%
Vaginal discharge		
Present	11	30.2%
Absent	29	69.8%
Hysteroscopy		
Normal	36	90%
Tubal block	4	10%

In 44% of the cases menstrual cycle was irregular. Dysmenorrhea was seen in 33% of the cases. Vaginal discharge was seen in 30% of the cases. During hysteroscopy tubal block was seen in 10% of the cases.

Table 3: Distribution based on Co-morbidities

Co-morbidities	No. of patients	Percentage
Diabetes Mellitus	6	15%
Hypothyroid	2	5%
Tuberculosis	2	5%
None	30	75%

Comorbidities found were, Diabetes mellitus was seen in 15% of the cases, hypothyroidism was seen in 5% of the cases. TB was seen in 5% of the cases.

Table 4: Pelvic Examination

Pelvic Examination	No. of patients	Percentage
Normal	22	55%
Foul smelling vaginal discharge	11	27.5%
Bulky uterus	4	10%
Fornixes tender restricted mobility	3	7.5%

In pelvic examination Foul smelling vaginal discharge was seen in 28% of the cases. Bulky uterus was seen in 10% of the cases. Fornixes tender restricted mobility was seen in 7% of the case.

Table 5: USG examination outcomes

USG	No. of patients	Percentage
PCOD	20	50%
Normal	13	32.5%
Fibroid	3	7.5%
Chocolate cyst / Endometriosis	3	7.5%
Adenomyosis	1	2.5%

In USG examination PCOD was seen in 50% of the cases. Fibroid and Chocolate cyst was seen in 7.5% of the cases each and adenomyosis was seen in 2.5% of the cases.

Table 6: Patients opting for Treatment for infertility

Treatment for Infertility	No. of patients	Percentage
Ovulation induction	15	37.5%
Laparoscopy	3	7.5%
None	22	55%

Patients who are getting treated for infertility were 45%, of which Ovulation induction was done in 37.5% of the cases and laparoscopy was done in 7.5% of the cases.

Discussion

This study investigated 40 women who came to OPD with infertility complaints. They were screened for infertility by routine blood tests, thyroid function tests, ultrasound of abdomen and pelvis and hysteroscopy.

Women aged 21-40 years are part of the research sample. In a study by Abha maheshwari *et al*. stated women aged 35+ are about twice as vulnerable to unexplained infertility [6].

95% of women had the highest socioeconomic status, depending on the distribution of the study population, according to the socioeconomic status of women. F Grodstein *et al*. reported that about 70% of unfertile women had a comparatively high socioeconomic status in his research [7].

Approximately 53 percent of the study population had been married and suffered infertility for five to ten years. In a study by Karla Lucian and Bretherick *et al*. stated that the incidence of infertility increases as marital age increases [8].

In this research, 28 percent of women had symptoms of foul smelling vaginal discharge, which was suggestive of infection. WESTROM *et al* said that about 28.6 percent of women's infertility is primarily attributed to pelvic inflammatory disorder, a preventable cause if early diagnosis and treatment was performed [9].

George Schaefer *et al*. has suggested that genital tract tuberculosis can be present in 5 percent or more people with infertility without apparent clinical signs and symptoms [10].

B M Zaadstra *et al*. in their analysis concluded that body fat distribution appears to have more effect on fertility than age in women of reproductive age [11].

In our study, 50% of women assessed for infertility had PCOD, followed by tubal blocks due to multiple causes, pelvic inflammatory disorder, diabetes, tuberculosis and fibroid uterine adenomyosis.

Table 8: Percentage of causes of female infertility

Causes of Infertility	Percentage
PCOD	50%
PCOD with DM	12.5%
Tubal Block	10%
• PID	2.5%
• DM	2.5%
• Tuberculosis	5%
Fibroid Uterus	7.5%
Endometriosis	7.5%
Unexplained	10%
Adenomyosis	2.5%

Infertility is the big concern that has risen at this era. Female infertility causes should be carefully evaluated, investigated and studied from history. PCOD is the primary cause of infertility in women, which rises because of changes in the lifestyle. PCOD can also be quickly handled and the forecast is strong relative to the other causes. The next big cause is tubal block due to PID, DM, and TB infertility for women. Any women who present with infertility also have endometriosis. In this group of people, the outcome is bad and it is not entirely treatable. Very small infertile population with adenomyosis and fibroid uterus. There is an explicit definition of infertility, also known as idiopathic infertility, which involves the population whose cause is uncertain.

Conclusion

Infertility is the biggest concern that has risen at this era. Female infertility causes should be systematically analyzed starting from history, analysis and research. The main cause of female infertility is polycystic ovarian disease (PCOD), which is rising because of lifestyle changes. PCOD is also easy to deal with and a good prediction of infertility relative to the other factors. Other medical conditions such as thyroid dysfunction and hyperprolactinemia will coexist with PCOD, which must be tested and treated accordingly for better outcomes.

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