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History Taking in Infertility

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Abstract

Infertility, a disease affecting the reproductive system, is a widely prevalent condition. Globally, it affects millions of couples trying to conceive. A systematic evaluation of couples seeking fertility treatment is essential to provide appropriate treatment and also to help in avoiding delay in time to pregnancy.

Clinically diagnosing the underlying probable cause for infertility and proper management helps these couples conceive a child. History collection plays a pivotal role in the clinical diagnosis of the cause. Since infertility is multifactorial, paramount importance should be given to eliciting a detailed history of events from childhood to date for both men and women. The scheme of the history of infertility is discussed in this article.

Keywords: *infertility, history taking, cause of infertility*

Introduction

Infertility or the inability to conceive a child is a global issue affecting millions of couples in the reproductive age group. Globally, 8 – 12% of couples[1] are suffering from infertility with men contributing to 40 - 50%[2] and women contributing to 46.2%.[3] In India, it was estimated that the percentage of infertility in different states ranges from 3.7 – 15%.[2]

The World Health Organization defines infertility as a disease of the male or female reproductive system defined by the failure to achieve a pregnancy after 12 months or more of regular unprotected sexual intercourse. [4] Since the very Definition of infertility is so varied, patient-centric care is vital. An exhaustive history and a thorough clinical examination help in tailoring treatments to individual needs.[5,6]

To identify the probable cause, history should also include lifestyle, occupation, past and present medical conditions, surgery and sexual history. It is important to recollect that the oocyte and spermatozoon are specialized single cells. Any systemic disease, dysfunction or disorder would profoundly influence the functioning of these vulnerable gametes. Infertility being a condition involving a couple, a detailed history taken from both the male and female partner individually is essential.[7]

Prerequisites for history taking

'Listen to your patient; he is telling you the diagnosis' — Sir William Osler

The following are the ideal requirements for eliciting a detailed history from the couples.

- Consultation room – The ambience of the consultation area should be comfortable to provide comfort and utmost privacy to the couple.[8]
- The patient's flow of narrating history should not be interrupted by the physicians for the patient's benefit and to precisely arrive at the diagnosis.[9]
- Patients are allowed to narrate their concerns without redirecting them so that they do not refrain from providing relevant data.[10]
- When a scenario arises wherein either of the partners is not at ease with sharing history,

he/ she should be encouraged to talk to the physician privately.

The major aspects of history taking in couples seeking infertility treatment are listed in Table 1.

Table 1: *Scheme of history in couples seeking fertility treatment*

1. General history and demographic details	Name Date of Birth & Age Qualification Occupation Address& Location
2. Fertility history	Primary or secondary Duration of infertility The first or second union Use of contraception (type and duration) Consanguinity of marriage Previous evaluation or treatment outcomes for infertility
3. Coital history	Frequency Knowledge regarding the fertile period Use of lubricants Dyspareunia
4. Medical history	Past and present medical conditions Drugs
5. Surgical history	History of surgeries in childhood and adulthood
6. Lifestyle	Smoking Alcohol/ hard drugs consumption Sleep duration
7. Family history	H/o infertility in siblings or family members Genetic disorders Comorbidities and other diagnosed diseases
8. Specific history (Female partner)	Age at menarche Menstrual history Cycle regularity Cycle duration Detailed past obstetric history History of vaginal discharge History of nipple discharge
9. Specific history (Male partner)	Libido Erection Ejaculation

1. General history and demographic details:

General aspects of history taking are as follows

Name: Registration and record maintenance is essential for any medical treatment and more so for infertility treatment. The collection of identity proof and proper documentation is a requirement for infertility treatment, especially for intrauterine insemination (IUI) and assisted reproductive techniques (ART) to avoid adversities during gamete or embryo handling. The latest ART regulation act 2021 has made it mandatory for the couple to provide proof of identity (e.g., Aadhar card) before treatment.

Date of Birth (DOB) & Age: The prognosis of infertility treatment is affected by age as it is a well-known fact that fertility of both men and women declines with age, the decline happening earlier in women when compared to men.[11]Routine counselling should be given, emphasizing increased risk in the birth of chromosomally abnormal children in couple with advanced maternal[12] and paternal age.[13]

Qualification: Knowing qualifications is useful for the physician to understand the patient's ability to comprehend the information provided and thereby improving physician-patient communication.

Occupation: Nature, hours and duration of work are usually enquired about. Occupational hazards are known to cause deleterious effects on the reproductive health of both men and women. Altered sperm parameters are noted in men exposed to cell phone radiation,[13] heat, stress, pesticides, environmental chemicals, aromatic hydrocarbons etc.[14] Altered dietary habits and lifestyle due to odd working hours have become common these days. This also seems to affect the marital relationship and sometimes sexual function and thereby fertility.

Address & Location: Address is useful for communication purposes, follow-up and also to identify factors like environmental toxins, climate change, pollution etc., which are known to cause subfertility.[15]

2. Fertility history

Primary or secondary: Primary infertility is when a couple have not achieved a pregnancy at all, and secondary infertility is when the couple has achieved a pregnancy before, which may have either resulted in a live birth or miscarriage. Identifying the type of infertility will help the physician understand and counsel the couple on fertility treatment and future pregnancy outcomes.[16]

In the case of secondary infertility, the history of the method of previous conception, the number of live births, antenatal and neonatal outcomes, and associated complications should be elicited.

Duration of Infertility: Duration of infertility is a major component in clinical practice in the initiation of investigations and treatment for infertile couples. But in cases of obvious medical grounds for infertility, like poor semen parameters, amenorrhea, bilateral tubal block etc., infertility treatment should be provided at the earliest irrespective of the duration of infertility.[6] Generally, evaluation for infertility is done after 1 year of regular unprotected intercourse. Earlier evaluation is recommended if the age of the female partner is more than 30 years of age with evident features of hypogonadism and there is medical or surgical history which could affect fertility.

First or second union: History of remarriage and if present, history of conception with a previous partner(s) is helpful for physicians to decide on the treatment options.

Use of contraception (type and duration): Couples who are willing to postpone childbearing use contraceptives. Duration and method of contraception should be recorded and should be kept in mind while calculating the duration of infertility. In long-acting reversible contraceptives (LARC), like intrauterine devices or combined oral contraceptives, fertility of the individual is resumed after cessation of contraception.[17]

Consanguinity of marriage: Couples with consanguineous marriages do not always present with infertility, but may have recurrent pregnancy loss due to chromosomal abnormalities.[18] These children have a greater risk of genetic abnormalities[19] when compared to children born out of non-consanguineous marriages. Invitro fertilization (IVF) and preimplantation genetic testing can be offered to them to identify known genetic illnesses in parents and normal embryos can be transferred to achieve a normal healthy live birth.[20]

Previous evaluation or treatment outcomes for infertility: History should be collected in detail regarding investigations and treatment done earlier, number of cycles, drugs used and outcome of the procedures should be noted. This will help in planning the current treatment. Details of surgeries done for infertility should be evaluated in detail.

3. Coital history

Frequency: A history of the frequency of sexual intercourse per week should be noted. In coupled with inadequate coital frequency, a delay in conception is well documented.[21]

The prime point here is to confirm the occurrence of intra-vaginal intercourse. Some couples are either ignorant or shy and don't practice intra-vaginal ejaculation. This is a simple fact from history that remedies the issue of "infertility".

Knowledge regarding fertile period: In women with regular menstrual cycles, calculating the fertile period from the LMP helps in timing the intercourse. Stronger evidence is not available in favour of timed intercourse,[22] still it is believed to increase the probability of conception.

Use of lubricants: The history of lubricant usage is also important as most of the lubricants available in the market are toxic to spermatozoa (either spermiostatic or spermicidal).[8]

Dyspareunia: A history of pain during coitus should be elicited. Inadequate lubrication, phimosis, vaginismus, infections, inflammatory conditions and deep endometriosis cause dyspareunia in men and women.

4. Medical history

Past and present medical conditions: Medical conditions may directly or indirectly affect the fertility of both men and women. A detailed history of medical illness in the past and present should be noted. Some of the medical conditions like cystic fibrosis (immotile cilia syndrome),[23] mumps orchitis,[24] in men and overt uncorrected hypothyroidism[25] in women can cause infertility. Conditions like sexually transmitted diseases,[26] genital tuberculosis[27,28] affects the fertility of both men and women.

Drugs: A list of drugs used in treating other systemic illnesses has been proven to affect sexual function and spermatozoa quality in men[29]. History of chemotherapy/ radiotherapy is essential as these encompass a group of immunosuppressive drugs and toxic radiation possess gonadotoxic effects[7,30] leading to infertility.

5. Surgical history

History of surgeries in childhood and adulthood: In men, a history of surgery during childhood like surgeries in the inguinal region, hernia repair, or orchidopexy is to be taken in detail as they can lead to infertility later in life. Surgeries in adulthood like varicocelectomy, hydrocelectomy, and testicular surgeries can have an impact on fertility.[7,8]

In women, the history of surgery performed on ovaries like ovarian drilling or cyst removal should be asked in detail. History of salpingectomy, dilatation and curettage[31] and any other pelvic surgery should be elicited as they contribute to delay/ failure in conception. Although not a prerequisite for fertility treatment, the outcome of previous diagnostic laparoscopy and hysteroscopy if done, are to be noted.

The history of vasectomy in men and tubal ligation in women is important in cases of secondary infertility.

6. Lifestyle

Smoking: It is a well-known fact that smoking affects general health and can result in various illnesses from simple respiratory disease to malignancy. Similarly, smoking can also adversely affect the quality of the gametes and cause infertility. [16] Smoking impairs all the parameters of the semen. In women, smoking during pregnancy also increases the risk of miscarriage, preeclampsia and fetal growth restriction.[16]

Alcohol/ hard drugs consumption: Alcohol consumption affects the fertility of both men and women and also affects perinatal outcomes in women.[32] Similarly, the use of recreational drugs

and hard drug impairs fertility. Although we are not aware of the direct implications, it is imperative to know the duration, frequency and quantity of alcohol and other drug consumption.

Sleep duration: Lesser duration and poor quality of sleep may affect fertility in men by increasing the risk of sexual dysfunction due to stress. In women, altered sleep patterns may lead to inappropriate diet habits and reduced activity, which in turn will lead to weight gain and anovulation.[33,34]

7. Family history

History of infertility in siblings or family members: History of the number of siblings and their fertility status is important in assessing genetic conditions which could predispose to infertility, like cystic fibrosis and Y-chromosome micro deletion[35] in men.

Genetic disorders: Family history with known genetic disorders should be asked in detail. Existing familial genetic conditions can cause infertility[36] and also have a greater risk of disease transmission to the offspring. Selection and transfer of embryos with a normal genome and achieving a normal live birth is possible with assisted reproductive techniques. This is also helpful in providing genetic counselling to the couple.[20]

Comorbidities and other diagnosed diseases: A history of comorbidities and other medical conditions of the parents could help in assessing the risk of inheriting them. History of breast or genital tract malignancies in close relatives mandates evaluation for the same before initiating hormone therapy for fertility treatment.

8. Specific history (Female partner)

Age at menarche: The age at which a woman attained menarche is essential. A detailed history should be taken whether the onset of puberty was spontaneous or hormone-induced. Recent studies suggest fertility rate is impacted by the age at which a woman attains menarche.[37] Both precocious[38] and delayed puberty[39] affect the fertility of the woman due to various underlying causative factors.

Menstrual history:

- **Cycle regularity:** Ovulatory dysfunction is the commonest cause of infertility in women.[40] Absent or irregular ovulation may present as amenorrhea or irregular menses, respectively. In case of irregular cycles, it should be noted whether the menses occurs spontaneously or is induced with hormonal pills. Absent menses even after intake of progesterone suggests either a hypothalamic-pituitary disorder or non-functional ovaries. Failure to induce menses with estrogen and progesterone pills suggests endometrial damage like Asherman syndrome.
- **Cycle duration:** A history of the length and frequency of each menstrual cycle and details about the menstrual flow should be obtained. History of menorrhagia and dysmenorrhea should be elicited. Women's last menstrual period (LMP) should be documented. This helps in identifying and counselling regarding the fertile period.

Detailed past obstetric history: Details of parity, miscarriages, termination of pregnancies, mode of delivery and any post-delivery complications should be documented.

History of vaginal discharge: A history of altered vaginal discharge should be noted to rule out sexually transmitted diseases[41] which can affect the endometrium, and fallopian tube and cause infertility.

History of nipple discharge: History of galactorrheais useful in identifying elevated levels of serum prolactin in women causing infertility.[42]

9. Specific history (Male partner)

Libido: A history of the desire to have sexual intercourse should be noted. Decreased libido in men due to stress or psychological factors is mostly reversible with proper counselling. In cases of altered hormone levels, medical intervention is required as it may affect fertility.[43]

Details of sexual orientation are also important.

Erection: A detailed history of achieving an erection is important. The penile erection helps in the deposition of semen in the female genital tract. Physical and psychological causes can contribute to erectile dysfunction (ED). In some cases, correction of ED can help a couple conceive naturally.

Evidence indicates that a longer duration of infertility can precipitate erectile dysfunction in men.[44]

Ejaculation: The history of antegrade ejaculation and details of intravaginal ejaculation should be noted down. Men with anejaculation may remain infertile and proper history collection will aid in identifying the type of anejaculation.[45] Retrograde ejaculation of semen into the urinary bladder can be found by asking about the history of the passage of cloudy urine after masturbation or coitus.[46] History of nocturnal emissions is important as psychogenic causes can cause an ejaculation in some men[45] and also rules out the diagnosis of retrograde ejaculation.

Conclusion:

History taking is the first and crucial step in medicine. This is done daily and often provides clues to diagnosis. The importance of details in history that are to be collected for couples seeking infertility treatment is emphasized here. History, when collected appropriately and fulfilling the requisites, builds patient-physician rapport and also gains the patient's confidence. Data collected will guide the physicians to decide the treatment protocol, follow up and prognosis.

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