

Dr. Pandit Palaskar

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Male Infertility FAQ

Infertility: A couple is usually considered to be infertile when pregnancy has not occurred after one year of unprotected intercourse.

Primary infertility: Inability to conceive within one year of marriage by regular unprotected intercourse.

Secondary infertility: Inability to conceive within one year of regular unprotected intercourse, after having first pregnancy.

Incidence of infertility: Worldwide the incidence of infertility is 10 to 15 % of married couples.

Male factor: 30%

Female factor: 30%

Both factors: 30%

Unexplained infertility: 10%

This means both partners are equally responsible for infertility. So both male and female partner requires simultaneous investigation and treatment.

Causes of male infertility: Male infertility is caused by

1. Abnormal sperm production and function

A. Oligozoospermia: sperm count less than normal is called oligozoospermia.

B. Asthenozoospermia: decreased motility of sperms is called asthenozoospermia.

C. Teratozoospermia: abnormal structure of sperms is called teratozoospermia

D. Azoospermia: absence of sperms in semen is called azoospermia.

Usually the above abnormalities are present in various combinations. These abnormalities are caused by following defects in male reproductive system.

Undescended testis- occurs when the testis fails to descend from the abdomen into the scrotum during fetal life. This leads to total absence of sperm production.

Varicocele: This consists of dilated and tortuous testicular veins that contain stagnated blood. This leads to impaired sperm production in testes.

Hydrocele: This consists of collection of fluid in coverings around the testis. This may lead to impaired sperm production.

Infection of testis (orchitis): This can be caused by sexually transmitted diseases, prostatitis, urethritis, etc.

Genetic diseases: Chromosomal disorder like Klinefelter's syndrome having 47xxy karyotype can cause low sperm count or azoospermia.

Sperm antibodies: Sperm antibodies can form in individual's blood that can lead to infertility.

2. Impaired delivery of sperm:

Impaired delivery of sperms to the female genital tract can be due to

- Erectile dysfunction
- Premature ejaculation
- Retrograde ejaculation
- Blockage of epididymis or ejaculatory ducts
- Spinal cord problems
- Hypospadias
- Cystic fibrosis
- Severe injury or major surgery involving the male reproductive system.

Medical conditions can be associated with infertility such as:

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- Diabetes
- Thyroid disorders
- Disorders of pituitary gland
- Disorders of adrenal glands
- Liver or kidney failure
- Genetic diseases
- HIV/AIDS

Risk factors & life style issues:

1. Emotional stress and depression can lead to infertility.
2. Chemotherapy and radiation can severely impair sperm production and reduce their motility.
3. Smoking, alcohol, drugs and anabolic steroids can reduce sperm counts and impair sperm motility.
4. Occupational exposure to excessive heat, pesticides and other chemicals may contribute to male infertility.

Investigations:

History & examination: Male partner is interviewed and examined by the infertility specialist. Examination of genital system is done and necessary investigations are advised.

Semen analysis: Semen analysis is the most important and easy investigation for male partner. You should have abstinence of at least three days before giving semen for examination. Semen is usually given by masturbation in a sterile semen collection container in laboratory. Laboratory usually has well maintained semen collection room with adequate privacy.

Analysis of semen usually includes the following components:

Sperm volume is the total amount of semen in a single ejaculation.

Sperm concentration is the number of sperms present in one ml of semen.

Sperm motility is the ability of sperm to move.

Morphology indicates the structure of sperms.

Minimal requirements for male fertility:

- Semen volume: more than half ml
- Sperm concentration: more than 20 millions/ml
- Total sperm count: more than 40 millions/ml per ejaculate
- Motility : more than 50% sperms having grade 3 to 4 motility(forward progression)
- Morphology : more than 30% normal sperms

Evaluation of male hormones:

Testosterone, Follicle stimulating hormone (FSH), Luteinising hormone (LH), Prolactin (PRL), Dehydroepiandrosterone sulphate (DHEAS)

Other hormones: Thyroid hormones (T3, T4, TSH)

Scrotal sonography & Color Doppler: this can diagnose hydrocele, hernia or varicocele.

Testicular biopsy: when semen analysis shows absent sperms in repeated semen samples and testicular size is normal, then testicular biopsy is usually indicated to know the cause of azoospermia. In this small piece of one or both testis is taken for histopathological examination under local or general anesthesia.

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Genetic karyotyping: This test is done when some genetic disorder is suspected in male partner or in patients with severe sperm defects. This also requires before proceeding for IVF or ICSI.

Treatment:

Changing the life style:

1. Reduction of mental & physical stress by stress relaxation exercises like yoga, meditation, swimming, outdoor games, etc.
2. Stop using tobacco, alcohol, recreational drugs and anabolic steroids.

Treatment of abnormal sperm production or function:

- Fertility drugs: These are given to increase sperm production and motility
- Hormone replacement therapy: to correct hormonal problems.
- Antibiotics: to treat infections
- Surgical treatment: varicocele is corrected by venous ligation and embolisation.

Treatment of hormonal problems

- Hormone replacement therapy

Treatment for erectile dysfunction

- Oral medications like sildenafil, vardenafil, tadalafil
- Urethral suppositories
- Vacuum devices
- Penile implants involve surgical insertion of malleable or inflatable rods or tubes into the penis under anesthesia.
- Vascular reconstructive surgery
- Venous ligation

Treatment of azoospermia due to vassal or epididymal blocks

When semen analysis shows absent sperms but testicular biopsy shows production of sperms in testes then various surgical sperm retrieval techniques are used to retrieve the sperms from testes or the collection system. ICSI treatment is done with these surgically retrieved sperms to achieve the pregnancy. These techniques are

- Testicular sperm aspiration (TESA)
- Testicular sperm extraction (TESE)
- Percutaneous epididymal sperm aspiration (PESA)
- Microepididymal sperm aspiration (MESA)
- Vas deferens aspiration
- Spermatocele aspiration

Intrauterine insemination of semen (IUI): IUI is done to improve the fertility before opting for IVF or ICSI. IUI increases the sperm motility and sperm concentration in a given sample.

Donor IUI: Donor IUI (Intrauterine insemination of donor semen): When the male partner is azoospermic or has some transmissible genetic diseases, with the consent of the couple, donor IUI is done. The donor semen is taken from authorized semen bank. Complete matching of donor is done with male partner i.e. blood group, color of skin, eye & hair, ethnic & intellectual background, built of bones & height, etc. The donors are screened for HIV, hepatitis, syphilis, and other sexually transmitted diseases.

IVF: IVF is useful for patients with good sperm count and motility, unexplained infertility.

ICSI: ICSI is useful for patients with low sperm count or motility.

(Refer to section on female infertility for details)

Adoption: This can be an initial option or useful for couples with repeated IVF or ICSI failures.