

OUTLINE

- Introduction of infertility.
- Definition of infertility.
- Risk factors of infertility.
- Causes of infertility in men & women.
- Types of infertility.
- Diagnosis of infertility.
- Treatment of infertility.

INTRODUCTION OF INFERTILITY

- Infertility is a significant **social and medical problem** affecting couples world wide.
- Infertility refers to **an inability to conceive** after having regular unprotected sex.
- Average incidence of infertility is about **15% globally**. (varies in different populations).

- According to [Mayoclinic](#), USA :-
 - [20%](#) cases of infertility are due to a problem in [man](#).
 - [40%](#) to [50%](#) cases are due to [women](#).
 - [30%](#) cases are due to problem in [both](#) men & women.

DEFINITION OF INFERTILITY

- **Infertility** is the **failure** to achieve a birth ever a **12** months period of unprotected **intercourse**.

OR

- **Infertility** is the **inability** of a sexually active **non contracepting couple** to achieve pregnancy in



RISK FACTORS OF INFERTILITY



CAUSES OF INFERTILITY IN MEN & WOMEN

IN MEN:-

➤ Low sperm count:

- Less than 10 million sperm per ml of semen.
- Normal count is 20 million sperm per ml of semen or more.

➤ No sperm:



➤ Low sperm **motility**:

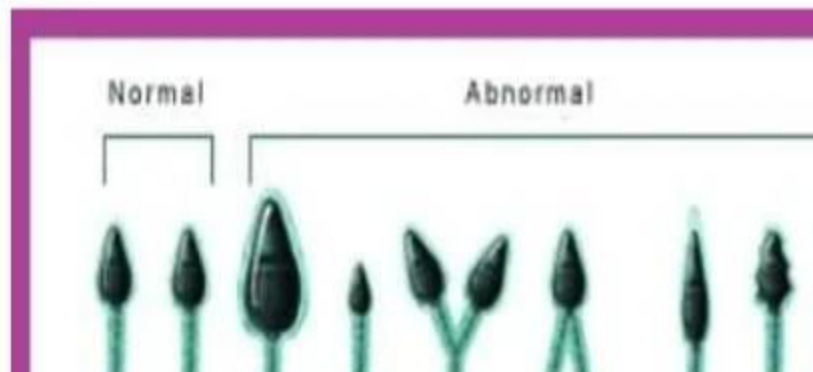
- Sperms are immotile, can not swim.

➤ **Abnormal** sperms:

(Unusual shape , more difficult to move and fertilize egg)

Its causes are:

- Testicular **infections**.
- Testicular **cancer**



Continued....

- **Overheating** testicles.
- **Ejaculation** disorders (Retrograde ejaculation).
- **Variocele** (includes varicose vein in scrotum).
- **Undescended** testicles.
- **Hypogonadism** (testosterone deficiency).
- Genetic **abnormality**.
- **Mumps** (testicular inflammation).

IN WOMEN:-

➤ Ovulation disorders:

- Premature ovarian failure (before age of 40)
- Polycystic ovary syndrome.
- Hyper-prolactinemia (in non pregnant state)
- Poor egg quality.

➤ Problems in uterus & fallopian tubes:

- Surgery.
- Sub-mucosal fibroids



➤ Medications:

- NSAID'S (aspirin & ibuprofen).
 - Chemotherapy.
 - Radiotherapy.
 - **Illegal** drugs.
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TYPES OF INFERTILITY

- Two types of infertility:
 - Primary Infertility.
 - Secondary Infertility.

1. Primary Infertility:

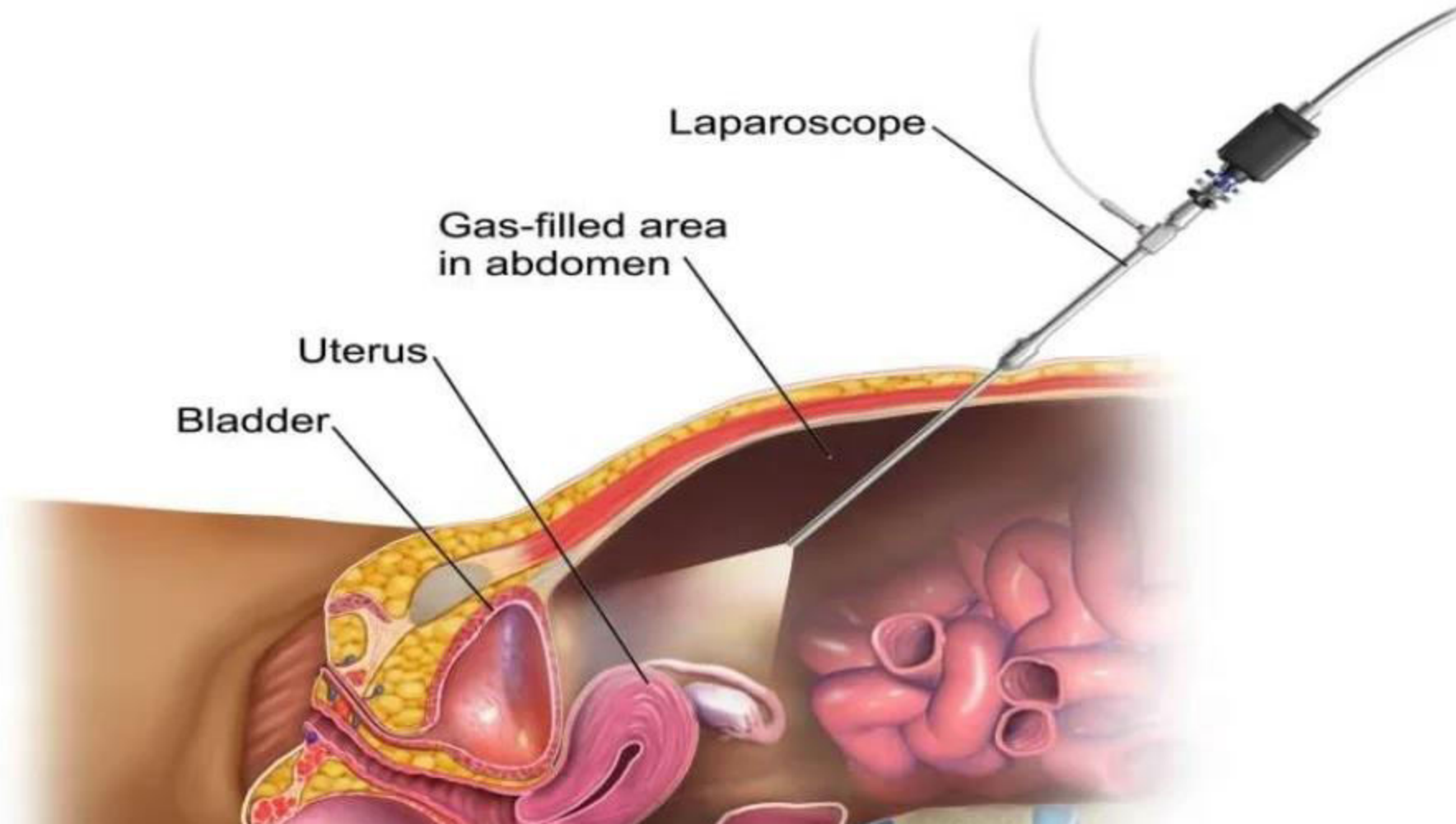
When a woman is **unable** to ever bear child .

2. Secondary Infertility:

When a woman has been pregnant but

DIAGNOSIS OF INFERTILITY





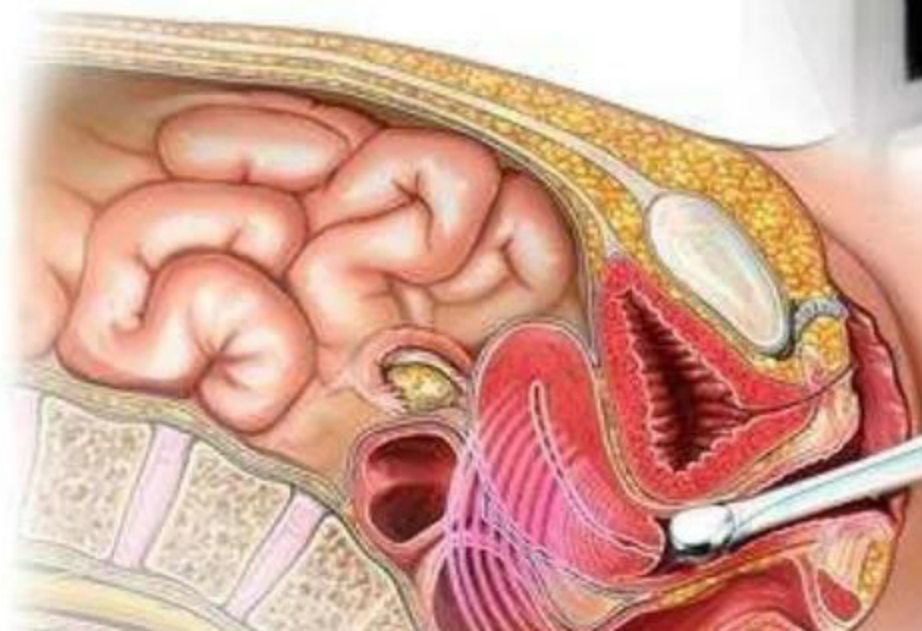
Laparoscope

Gas-filled area
in abdomen

Uterus

Bladder

Monitor



Ultrasound
transducer

TREATMENT FOR INFERTILITY



IN MEN:-

1. Premature ejaculation or Erectile dysfunction:

- Behavioral approaches (giving suggestions).
- or medications.

2. Varicocele:

- If there is varicose vein in scrotum, it can be **surgically removed**.

3. Blockage of the ejaculatory duct:

4. Retrograde ejaculation:

- Sperms can be taken directly from the bladder and injected into an egg in laboratory.

5. Surgery for epididymal blockage:

- A bypass of the blockage can be performed, called vaso-epididymostomy (vas deferens is re-connected to epididymis).

IN WOMEN:-

1. Ovulation disorder:

Fertility drugs are prescribed ...

a) Clomifine:-

- To encourage ovulation (in case of PCOS, etc).

b) Metformin:-

- Clients who do not respond to clomiphine.



c) FSH:-

- A hormone produced by pituitary.
- Controls estrogen production by ovaries.
- It stimulates ovaries to mature egg follicle.
- Ex: **Gonal-F, Repronex, Follistim, (given S/C)**

d) Human Menopausal Gonadotrophin:-

- **EX:** **Bravelle, Repronex, and Menopur (given I/M or can be S/C).**
- Genetically engineered products.
- Contains both **FSH & LH**

e) Human Chorionic Gonadotrophin :-

- Given in **combination** (clomiphine + HMG + FSH).
- It stimulates follicles to ovulate.
- given **I/M or S/C**.

f) Gn- RH :-

- For women who ovulate premature follicle during HMG treatment.
- Delivers **constant supply** of Gn-RH to pituitary gland , which alters the production of hormone that allows

g) Bromocriptane:-

- Stimulate ovulation by inhibiting production of prolactin.
- Prolactin stimulates milk production in lactating mothers.
- Ex: Parlodel, Cycloset, (given oral or i/v)

INFERTILITY COUNSELING

- Infertility counseling deals with the **psycho-social impact of infertility** in terms of :
 - Intervention,
 - Treatment, and
 - After-effects of **both successful and unsuccessful treatments.**
- It also involves **therapeutic work** to help

➤ Objectives & need of infertility counseling:

- Informed **consent**.
- To offer **coping strategies** to couples.
- To facilitate **decision making**.
- To **offer preparation** for procedures.
- To help client in achieving a **better quality of life**.

➤ **Counseling Services:**

- IVF- group discussion by staff.
- Third party reproduction for both donors & recipients.
- Therapeutic counseling.
- Crisis counseling.
- Assessment & Follow-up.

➤ **Advantages of infertility counseling:**

- Helps to deal with the emotional stress.
- Provide extra support.
- Allow the client in exploring all possible options for family.
- Help the couples in overcoming the dilemmas & deciding the right fertility treatment.



➤ **Role of Nurse in Infertility counseling:**

- Receiving the patient & family, and make them accessible & comfortable for counseling.

- Nurse need to obtain history as prenatal, family and other relevant history.
- Nurse has to perform primary physical examination and collect other relevant information regarding patient of reports.

- Give **psychological support** throughout the counseling.
- Collect other **information about tests, reports & documents.**
- Establish plan of care with family and coordinate care with other health care

- Maintain privacy and confidentiality of all cases.
- Performing inseminations.
- Performing embryo transfers.

ETHICAL & LEGAL ASPECT OF ASSISTED REPRODUCTION TECNOLOGY (ART)



- The aim of **ART** (fertility treatment) is to promote the chances of fertilization and subsequent pregnancy by bringing the sperm and egg close to each other.
- Different types are:

✓ **Intra-uterine Insemination (IUI):-**

- It is indicated as a first-line management where there are problems such as:
 - Hostile cervical mucus,
 - Anti-sperm or male fertility problem (low sperm count or premature ejaculation),
 - Although tubal patency of female partner must be assured.

- It is also useful for cases of unexplained infertility.
- In order to increase the chances of success:
 - Ovulation is monitored,
 - Ovulation is induced oftenly,
 - Sperms are prepared to maximize their fertility before insertion into uterus.

✓ **In- vitro fertilization (IVF)/ Embryo transfer:-**

- Describes lab techniques where the fertilization occurs outside the body and is one of the main types of ART.
- IVF is indicated in cases where the female partner has:
 - Uterine tube occlusion ,
 - Endometriosis or cervical mucus problems,

- Stimulation of the ovaries to produce more than one egg is required and treatment starts with pituitary desensitization (done by Gonadotrophin injection).

✓ **Intracytoplasmic sperm injection (ICSI):**

- Developed in 1992.
- It is a highly specialized variant of IVF treatment that involves the injection of a single sperm into the cytoplasm of an egg with

- It is useful technique when sperm quality is poor.
- In azoospermic man sperm can be obtained surgically from the epididymis or by extraction from testis itself.

✓ **Gamete intra-fallopian transfer (GIFT) & Zygote intra-fallopian transfer (ZIFT) :-**

- Both GIFT & ZIFT are laparoscopic techniques that offer little clinical advantage over in-vitro fertilization (IVF) and are no longer recommended.

❑ **Third party assisted ART:-**

When couples do not achieve pregnancy from the infertility treatments or traditional ART, they may choose to use a third party assisted ART method to have a child.

✓ **Sperm donation:**

- Couples can be donated sperm when a man does not produce sperm or produces very low no. of sperm and if he has a genetic disease.
- Donated sperm can be used with intra-uterine insemination or with IVF.

✓ **Egg donation:**

- This can be used when a women does not produce healthy egg that can be fertilized .
- An egg donor undergoes ovary stimulation and egg retrieval steps of IVF.
- Donated egg can then be fertilized by sperm

✓ Surrogacy:-

- Legal arrangements for surrogacy require the commencing (beginning) couple to both be over the age of 18, married to each other and the child genetically related to at least one of them .
- Surrogate mother acts as a host as the embryo

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