

OBSTETRICS TEAM



Common Causes & Mechanisms of Infertility

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◆ very important ◆ mentioned by doctor ◆ team notes ◆ not important

INFERTILITY

Definition:

- A couple is considered infertile after unsuccessfully attempting to achieve pregnancy for **one year**.

Types:

- Primary
- Secondary
- 80% of couple will conceive within the first year:
- 25% within 1st month
- 60% within 6 months
- 75% by 9 months
- 90% by 18 months

After 18 months of unprotected sexual intercourse, the couple have low monthly conception rate without treatment.

CAUSES:

1. Female:

- **Ovulatory**
 - PCO
 - Hyperprolactinemia
 - Thyroid dysfunction
 - **Obesity (one of the most important causes of PCO that will cause the absence of ovulation)**
 - Age ***above 35 the fertility drops**
 - stress
- **Tubal**
 - Adhesions ■ Ectopic ■ PID (pelvic inflammatory disease)
- **Endometriosis (including any congenital anomaly that may affect the pregnancy)**
 - Bicornuate uterus doesn't affect the pregnancy
 - Septet uterus (one uterus divided into two by septa) will affect the pregnancy
- **Fibroid (leiomyoma)**
- **Cervical (may be the reproductive tract of the female will produce Anti-sperm Antibodies known as Immunologic infertility)**
- **Excessive exercise like athletic girls**

2. Male:

- **Azoospermia (a man not having any measurable level of sperms in his semen)**
- **Asthenospermia (abnormal shape of sperms or Immotility of sperms)**
- **Poor morphology**

3. Unexplained:

- **30% of couples will fall into this category**

4. Multiple causes will be in 40% of cases

Diabetes could lead to impotence in males. Also hypertensive drugs could cause impotence and could reduce the semen quality.

Management:

1. History:

- **Female** - most women with regular cycles (every 22 to 35 days) are ovulating especially if they have premenstrual molimina (molimina= premenstrual symptoms)
- **Male** - especially **smoking** (**Carboxyhaemoglobin will be high so, the hemoglobin that goes to the organs will be deprived of oxygen (Hypoxic state)**), type of work, mumps, sexually transmitted disease

Carboxyhemoglobin forms when carbon monoxide binds to hemoglobin. Because carbon monoxide has such a strong attraction to hemoglobin, the bond is irreversible. **Carboxyhemoglobin is unable to carry oxygen to the tissues and organs.**

2. Examination:

- **Female**
- **Male** - Height, size of the testes, secondary sexual characteristics

3. Investigation:

- Basal body temperature chart, spinnbarkeit test.
- **FSH, LH, Prolactin level, thyroid function (follicular phase of the cycle)**
- Progesterone, day 21 of the cycle
- Laparoscopy + dye test
- Hysteroscopy

4. Semen Analysis.

TREATMENT:

According to the cause:

1. Ovulation induction:

- Oral - Clomiphen citrate (which is anti oestrogen) → ↑FSH
- Injections – Gonadotropines, e.g. Menogon (which contains FSH and LH)
- Monitoring by ultrasound
- Risks of treatment
 - Multiple pregnancy
 - Hyperstimulation syndrome

2. Hyperprolactinemia– Bromocriptin (Dopamin receptor agonist)

3. Tubal:

- Laparoscopic adhesionlysis
- Salpingoplasty

4. Intrauterine insemination (IUI)

5. IVF or ICSI **

- Indications
 - Bilateral tubal blockage
 - Unexplained infertility
 - Serial treatment cycles with IUI and no pregnancy
 - Male factor

• **IVF: In Vitro Fertilization**
• **ICSI: Intracytoplasmic sperm injection**

Polycystic ovary (PCO)

dr.zainb saiad: in exams PCO is more important than infertility!

Polycystic ovary:

- Usually in obese woman
- Reversed FSH: LH ratio, in the proliferative phase of the cycle
- ↑ Oestrogen
- Hirsutism
- Raised level of circulating insulin
- Raised blood sugar

Diagnosis:

1. History

- Irregular cycle
- Oligonorrhoea
- Infertility
- Galactorrhoea
- Recurrent abortions

2. Examination:

- Usually obese but it can happen in thin patients
- Hirsutism

3. Investigation:

- ↑ LH
- FSH may be normal * or low
- ↑ Oestrogen
- Free testosterone may be ↑ or normal
- Ultrasound - multiple small cysts at the periphery of the ovary looks like necklace
- Laparoscopy – thick, enlarged non-active ovaries
- The prolactin level could be high or normal
- Fasting insulin level become high
- If the cycle is regular we measure the progesterone level at day 21

Treatment:

- Weight reduction
- Induction of ovulation
- Metformin
- Laparoscopic ovarian diathermy
- IVF

In vitro fertilization (IVF) is a process by which an egg is fertilized by sperm outside the body.

Hyperprolactinemia:

If prolactin level is increased that will lead to decrease FSH levels.

It could be due to:

- Stress – one reading is not enough to Δ hyperprolactinemia.
- Secondary to ↑ TRH as in cases of hypothyroidism.
- Drugs – antihypertensive or antidepressants dyes.
- Macro or micropituitary adenoma.
- Can lead to infertility by preventing ovulation or by causing luteal defects.

Diagnosis:

- History e.g. drugs
- Examination
 - Galatorrhoea
 - Visual acuity
- Investigation
 - Prolactin level
 - Lateral skull X-ray
 - CT Scan
- Treatment
 - Bromocriptin
 - Surgery

Hirsutism:

It could be because of:

- Pathological - PCO, adrenal cortex trauma, Cushing's syndrome
- Constitutional

Site:

- Face
- Chest
- Anterior abdominal wall

Investigation:

- Free testosterone level, ATCH, FSH, LH

Treatment:

- Difficult - needs reassurance
- Hair removal by different methods
- Diane
- Cyproterone acetate – antiandrogen
- Treatment will take long time

Questions

1- Which of the following terms express a man who doesn't produce sperms at all in the semen:

- A- Oligospermia.
- B- Hypospermia.
- C- Azoospermia.
- D- Asthenospermia.

2- Which of the following states will lead to DECREASE levels of FSH:

- A- Hypothyroidism.
- B- Hypoprolactinemia.
- C- Hyperthyroidism.

3- Which of the following results is correct in case of PCO:

- A- Decrease LH.
- B- Increase Estrogen.
- C- Decrease testosterone.
- D- Decrease Estrogen.

Answers:

- 1- C
- 2- A
- 3- B