

Routine laboratory tests

2-Basic laboratory tests:

- *LH, FSH, testosterone
- *Serum prolactine.
- *ACTH, TSH, Growth hormone in patients with hypogonadotrophic hypogonadism.

Routine laboratory tests

3-Additional laboratory tests:

A-Quantitation of the leukocyte in semen:

By monoclonal antibody technology.

Pyospermia indicate infection.

Anderson has shown that infertile men have higher WBC counts in their ejaculate than normal men.

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3-Additional laboratory tests:

B-Anti sperm antibody testing (ASA):

Indication: IF their history of :

- 1-Genital infection.
- 2-Testicular trauma or biopsy.
- 3-Heat- induced testicular damage.
- 4-Genital tract obstruction.
- 5-If there is clumping or agglutination or SFA sampling.
- 6-Poor post coital test.

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4-Transrectal ultrasound (TRUS):

Indications:

- *Low volume sperm.
- *Acidic azoospermic semen specimens (incomplete ejaculatory duct obstruction and absence of seminal vesicle fluid).

Dilated seminal vesicles: Ejaculatory duct obstruction due to transurethral resection of the ejaculatory duct (TURED).

- *As guidance during needle aspiration of the seminal vesicle to determine ejaculatory duct obstruction.

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5-Vasography:

Can be performed at time of testicular biopsy by transverse micro incision in the vas., detect distal and proximal obstruction of vas.

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6-Testis biopsy (open biopsy):

Reports by Charnny in 1940 about it's important in male infertility.

Indications especially in:

- *Azoospermic patient to differentiating obstruction from non-obstructive testicular pathology.
- *Severe unexplained oligospermia.
- *Asymmetrical testicular lesion.
- *For mopping of the tests for later sperm aspiration for ICSI.

Testicular needle biopsy: Little pain and morbidity.

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7-Assessment of sperm morphology by fixation of spermatozoa with Papanicolaou stain.

Criteria of normal spermatozoa:

- *Smooth, oval sperm head.
- *Head measure 3-5 micrometers in length and 2-3 micrometers in width.
- *No neck defect, mid piece and tail.
- *Acrosome comprise 40-70% of sperm head

Any abnormality in morphology of sperms called teratozoospermia.

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8-(CASA): Used since 1980, it's costly.

9-Hypo-osmotic swelling test: Based up on the principle that living spermatozoon can maintain an osmotic gradient where's dead cells can't.

Normally more than 60% of spermatozoa react.

No swelling----very poor IVF results

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10-Viability stain assay: Determine if spermatozoa are alive and plasma membrane intact.

- *Live cells exclude dye.

- *Damaged dead cells can't.

11-Cervical mucus/ sperm interaction assay.

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12-Genetic evaluation: Specially in cystic fibrosis when there is gene mutation:

- *Congenital absence of vas.
- *Y-chromosome micro deletions leading to spermatogenic impairment and karyotype abnormalities.
- *Deletion in Y-chromosome lead to oligospermia and azoospermia.

If sperm density less than 10 million /ml do Y-chromosome analysis in peripheral blood.

Treatment of infertility

A-Fertility drugs: (forms of hormone therapy).

B-IUI: Washed, concentrated sperm from seminal plasma, placed into uterus through special catheter.

C-IVF: Meet egg and sperm invetro and the resulting embryo implanted into the uterus.

Indication:

- *absence or damaged sperm.
- *ovarian failure.
- *male factors.
- *resistant PCOS.
- *sever endometriosis.
- *unexplained infertility.

Treatment of infertility

Steps of IVF:

1-Ovarian stimulation.

2-Egg retrieval.

3-Fertilization.

4-Embryo transfer.

GIFT---High pregnancy rate and luteal support.

Treatment of infertility

Assisted Reproductive Technology (ART)

ART: Is term that describe several different methods used to help infertile couples.

Success rate depend on:

- 1-Age of the partner.
- 2-Reason for infertility.
- 3-Clinic.
- 4-Type of ART.
- 5-If the egg is fresh or frozen.
- 6-If the embryo is fresh or frozen.

Treatment of infertility

Assisted Reproductive Technology (ART)

Results of pregnancy:

- *37.3% in women under 35 years.
- *30.2% in women aged 35-37 years.
- *20.2% in women aged 37-40 years.
- *11.0% in women aged 41-42 years.

Treatment of infertility

Assisted Reproductive Technology (ART)

Types:

1-IVF.

2-ZIFT: Freshly fertilized eggs (zygotes) are placed into tubes during laproscopy after they have reached the embryo stage.

3-GIFT: Transferring eggs and sperm into the woman's fallopian tube. So fertilization occurs in the woman's body.

4-ICSI: Specially in severe sperm disorders, older couples and failed IVF, single sperm injected into mature egg then the embryo is transferred to the uterus or fallopian tube.

@Donor egg (women can't produce egg).

@Donor sperm.

Both can be used for women or man has a genetic disease than can be passed on to the baby.

Treatment of infertility

Assisted Reproductive Technology (ART)

5-Donor insemination.

6-SUZI.

7-TESA: In non-obstructive azoospermia.

8-PESA: In obstructed azoospermia.

9-MESA: In obstructed azoospermia.

Classical treatment of infertility

- 1-Stop toxic factors.
- 2-Treatment of systemic diseases.
- 3-Treatment of endocrinopathies.
- 4-Treatment of prostatitis and anti sperm antibodies (systemic steroid).
- 5-Treatment of sexual dysfunction.
- 6-Non-specific drug treatments.
- 7-Treatment of infection by appropriate antibiotics.
- 8-Anti oxidant like Vitamin E and Vitamin C.
- 9-Varicocele ligation in symptomatic cases but improvement in fertility is not confirmed.

THANKS