

IN THE NAME OF GOD

Male Infertility Review

Dr.ghalenoee
Baharloo Hospital

- ▶ 20 percent of cases were attributed to male factors
- ▶ 38 percent to female factors
- ▶ 27 percent had causal factors identified in both partners,
- ▶ 15 percent could not be satisfactorily attributed to either partner

Categories of Male Infertility:

- ▶ Endocrine and systemic disorders: 2 to 5 percent
- ▶ Primary testicular defects in spermatogenesis: 65 to 80 percent
- ▶ Sperm transport disorders: 5 percent
- ▶ Idiopathic male infertility: 10 to 20 percent

Diagnostic Approach:

- ▶ History: Chronic disease, Infection, Sexual development, Drugs, Surgery, Trauma, Sexual history
- ▶ Physical examination
- ▶ Semen analyses
- ▶ Endocrine testing
- ▶ Imaging of accessory glands and ducts
- ▶ Genetic tests

Semen Analysis

Volume : 1.5 mL

Sperm concentration : 15 million spermatozoa/mL

Total sperm number : 39 million spermatozoa per ejaculate

Morphology : 4 percent normal forms

Vitality : 58 percent live

Progressive motility : 32 percent

Total (progressive and nonprogressive) motility : 40 percent

▶ Men with a normal semen analysis:

idiopathic male infertility/Female factor → consider referral to a specialist in ART, such as in vitro fertilization (IVF)

▶ Men with an abnormal semen analysis :

1_Normal sperm concentration, abnormal morphology and/or motility →
ART such as intracytoplasmic sperm injection (ICSI) might be useful

2_Sperm concentration <10 million/mL:Because Klinefelter syndrome is common →
serum total testosterone, FSH LH

3_Severe oligozoospermia or azoospermia :

- ▶ endocrine testing
- ▶ genetic testing
- ▶ transrectal ultrasound for evaluation of obstructive azoospermia (those who have normal endocrine testing, normal testicular volume, palpable vasa deferentia in examination, and azoospermia)

Endocrine testing:

- ▶ Low testosterone, and high FSH and LH : Primary (hypergonadotropic hypogonadism) →karyotype/poor prognosis
- ▶ Normal testosterone and LH, and high FSH : seminiferous tubule damage without Leydig cell dysfunction →ART such as TESE/ICSI
- ▶ Low testosterone, but FSH and LH not elevated (normal or low) : Secondary hypogonadotropic hypogonadism: -Serum prolactin -additional evaluation for a sellar mass -hypothyroidism -hypoadrenalism
- ▶ Normal testosterone, LH, and FSH : Further evaluation depends upon findings on semen analysis→no clearly effective medical therapy
- ▶ Low sperm count and very low LH in a man who is very muscular : Suspicious for androgen abuse

Genetic tests:

- ▶ **Chromosomal anomalies** → Karyotyping in infertile men with elevated serum FSH and LH concentrations and a sperm concentration less than 10 million/mL **Klinefelter syndrome** is the most common sex chromosome anomaly.

Y-chromosome microdeletions, X-chromosome defects

- ▶ **CFTR gene** in obstructive azoospermia → normal testicular volume; no vas deferens on palpation of the external genitalia; and normal serum LH, FSH, and testosterone concentrations

- ▶ Surgical repair of varicocele : infertile men with abnormal semen analyses and large, grade 3 varicoceles

Surgical repair is also reasonable in men (with or without infertility) with large varicoceles causing symptoms

- ▶ Retrograde ejaculation: In men with no or low semen volume (less than 1cc) and azoospermia (no sperms in the ejaculate), the observation of any sperm on postejaculatory urinalysis suggests retrograde ejaculation

Paternal Age and Pregnancy Outcomes:

- ▶ increase in chromosomal abnormalities with increased DNA fragmentation and higher frequency of point mutations
- ▶ increase in the prevalence of birth defects (e.g., neural tube defects, cardiac defects, and limb defects) and congenital diseases (e.g., Wilms tumor)
- ▶ increased risk for schizophrenia
- ▶ X-linked disease: hemophilia A and Duchenne muscular dystrophy
- ▶ increase in the risk of spontaneous abortion