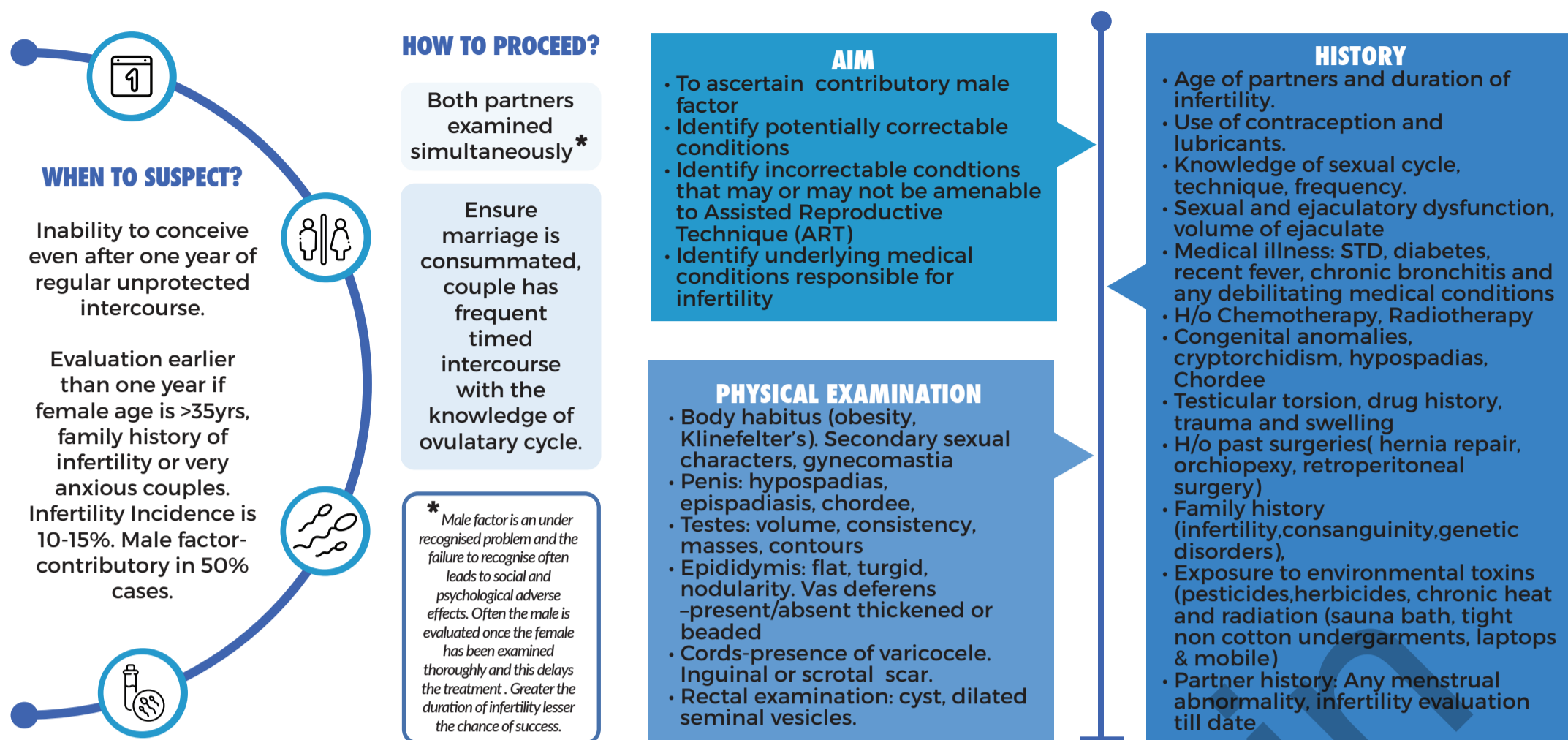




Standard Treatment Workflow (STW) for the Management of MALE INFERTILITY

ICD-10-N46.9



INVESTIGATIONS

SEMEN ANALYSIS (ESSENTIAL)

- At least two- samples 1-2 months apart; Abstinence of 1-3 days; Collected in sterile, medical grade plastic wide mouth containers.
- Provided within the lab or transported within an hour at room temperature and examined immediately
- WHO 2010 criteria for normal report. Volume: >1.5, ml Sperm conc.: >15 million/ml, Sperm motility: >40% Progressive >32%, Sperm morphology: >4% normal forms, Leukocyte density: <1 million/mL

DIAGNOSTIC CATEGORIES ACCORDING TO SEMEN ANALYSIS REPORT

Normal Semen Analysis:

Rule out sexual dysfunctions, Anatomic abnormalities, Female factor and unexplained

Low volume semen:

Incomplete Collection, Retrograde ejaculation, Ejac. duct obstruction, Cong. Absence of VasDeferens, Hypogonadism

Azoospermia:

Obstructive (Epididymal, vasal)
 Nonobstructive: (Genetic, Chromosomal, Hormonal, CT/RT, Post torsion testes, orchitis, Cryptorchidism, Idiopathic)

Oligo-astheno-teratospermia:

Isolated Asthenospermia: Antisperm antibodies, Sperm structural defect, Hypogonadism
 Multiple defects: Varicocele, Cryptorchidism, Genital tract infection, Systemic illness, Prolonged abstinence, Drugs (Sulfasalazine, NFT, Colchicine, Chemotherapy, GnRh analogs, Spironolactone, Ketokonazole, Anabolic steroids, cocaine, alcohol, Chemicals: heavy metals, herbicides, organic solvents, fungicides, pesticides)

Note: If a patient is unable to produce semen consider retrograde ejaculation and anejaculation. Need further evaluation.

OPTIONAL INVESTIGATIONS

- Hormonal assay: Serum FSH, LH, Prolactin, Testosterone, Estradiol, T/E ratio
- Culture: Urine, Semen, Prostatic fluid, Antisperm antibodies, Viability assay, Sperm function tests, Scrotal USG & doppler, TRUS, Genetic studies,
- Testicular biopsy (Multiple bilateral preferable)

MANAGEMENT

PHC/CHC

- History and Physical examination (PE)
- Proper Semen analysis
- Normal Semen report: (Rule out unconsummation, sexual dysfunction, anatomic abnormalities)
- Abnormal Semen report:
- Refer to Urologist/infertility centre
- Preventive measures: Avoid gonadotoxins, gonadotoxic drugs, smoking, tobacco, chronic heat, excess use of mobiles; Encouraging healthy life style: Nutritious diet, regular physical exercise, avoid stress, use of antioxidants and vitamins (Vit. C, Vit E, Zinc)
- Female partner to be evaluated by gynecologist
- Management of reversible nonsurgical causes (Infections etc.) and surgical cause i.e. varicocele if surgeon available.
- For further evaluation refer to district/tertiary hospital.

DISTRICT HOSPITAL

- Hormonal assay and Testicular biopsy
- Management of sexual and ejaculatory dysfunction
- Management of Varicocele and Hypogonadotropic hypogonadism
- ART: AIH/AID and counselling for adoption.

TERTIARY LEVEL

- Additional testing: TRUS, Genetic, ASA, Sperm function tests
- Advanced surgery: Microsurgical VVA, VEA, Varicocelectomy, TURED, Sperm retrieval techniques, Cryopreservation and sperm banking
- Advanced ART: IVF-ET/IVF ICSI

TREATMENT ALGORITHM

AZOOSPERMIA

(Low volume, ↓pH, Fructose -ve)

Retrograde ejaculation ruled out

Examine Vas

Not palpable

CABVD

CFTR Gene Mutation
 ICSI

DI/ Adoption
 Counselling

Palpable

E.D.O.

TRUS
 Cystic SV & ED
 TURED
 Vasography guided
 TRUS guided

Fibrous
 Non-operable
 PESA + ICSI

AZOOSPERMIA

(Normal volume, Fructose +ve)

Clinical Examination & FSH

Obstructive (FSH-N, Epid, turgid)

Normal testes
 Exploration, check vasal patency
 Needle biopsy (if required)
 Microsurgical VEA

Equivocal (N-FSH, N-testes)

B/L Multiple testicular biopsy
 Normal
 VEA/ ICSI

No Sperms
 DI/ Adoption

Focal Sperms
 TESE-ICSI

P.T.F. (Testes small, FSH>2N)

Discuss options
 DI/ Adoption
 Considering ICSI
 Genetic study
 Multiple testicular biopsy
 Sperms absent
 Sperms present
 Cryo preservation
 ICSI

OLIGO-ASTHENO-TERATOSPERMIA

(↓ count, ↓ motility, poor morphology)

↑ FSH
 Severe Germ epith damage

↑ ASA
 Steroids ±

Varicocele
 Varicocelectomy

Infection
 Antibiotics

Idiopathic
 Empirical Medical Rx

Refer for Assisted Reproductive Technique (IUI/IVF/ICSI)

KEEP A HIGH THRESHOLD FOR INVASIVE PROCEDURES

ABBREVIATIONS

FSH: Follicle Stimulating Hormone
EDO: Ejaculatory Duct Obstruction
CABVD: Congenital Absence of Bilateral Vas deferens
VVA: Vaso Vasostomy

PTF: Primary Testicular Failure
VEA: Vasoepididymal Anastomosis
TRUS: Trans Rectal Ultrasonography
PESA: Percutaneous Epididymal Sperm Aspiration
ASA: Anti Sperm Antibodies

DI: Donor Insemination
TESE: Testicular Sperm Extraction
SV & ED: Seminal Vesicle & Ejaculatory Duct
TURED: Trans Urethral Resection of Ejaculatory Duct

ART: Assisted Reproductive Technique
AIH: Artificial Insemination Husband
AID: Artificial Insemination Donor
ICSI: Intra Cytoplasmic Sperm Injection
IVF-ET: In Vitro Fertilization - Embryo Transfer
GUTB: Genito Urinary Tuberculosis