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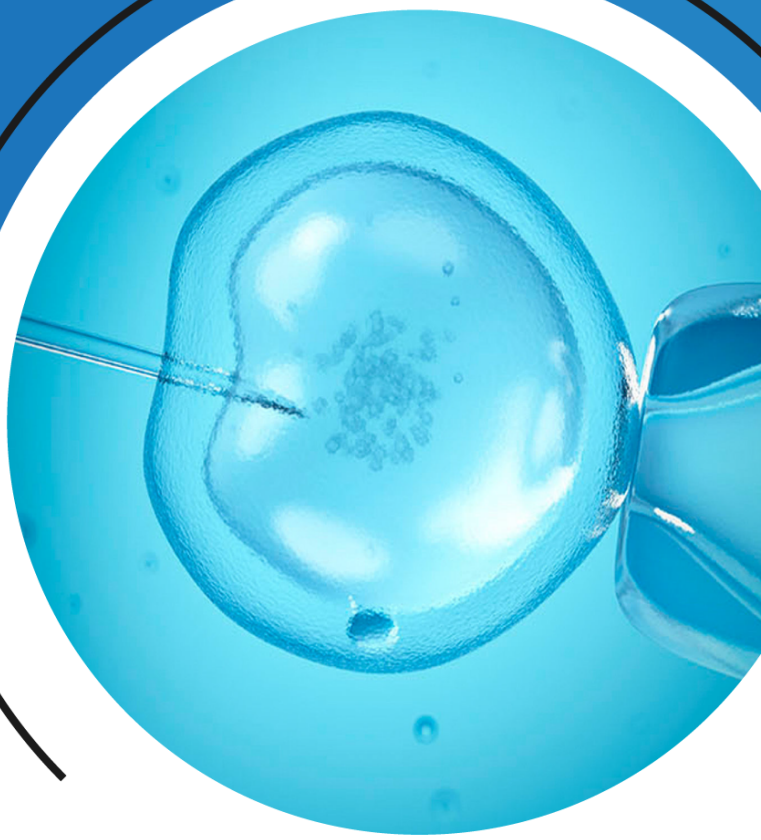

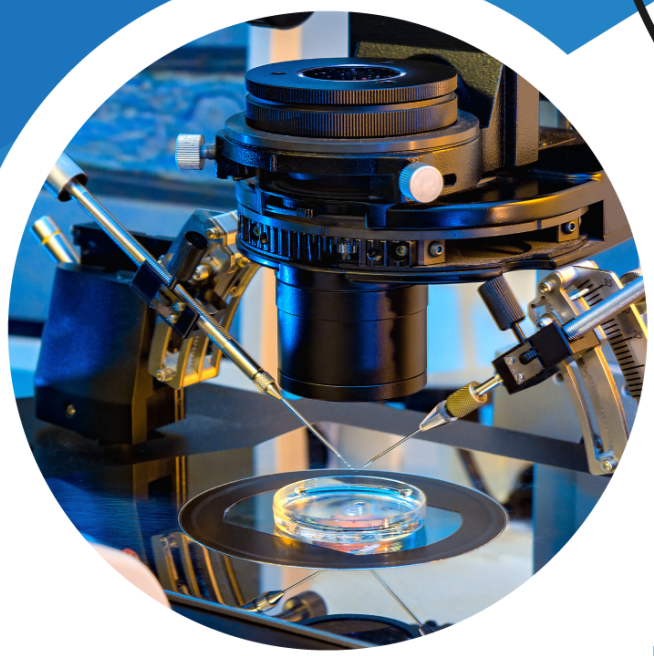

Male Infertility

Clinical Perspectives

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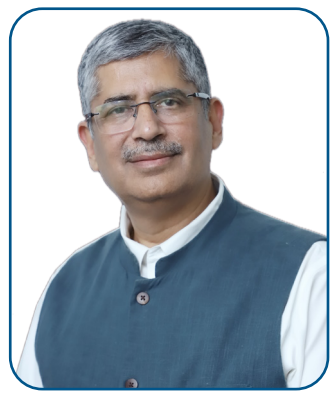
Message from the **President's Desk**



Dr Pankaj Talwar
President

Dear Friends,

It is indeed a pleasure to address you all on this issue of IFS Conversations. We look forward to seeing you all at New Delhi, from 14th to 16th Dec. 2025.

In this IFS conversation we have dealt with Male Infirtility: Clinical Perspectives. The editorial team and the authors have worked very hard towards it. Hope you all will find it very useful. The conversation also showcase various recent academic activities conducted by our extremely enthusiastic and committed members of state chapters and Special interest groups.

Wishing you all a very pleasant reading of this issue of IFS Conversation!

Message from the **Secretary Desk**

Dr Shweta Mittal
Secretary General

Dear Friends,

Greetings from team IFS
IFS conversations is the official newsletter, this particular issue focuses on "Male Infertility: Clinical Perspectives" in the fiield of Reproductive medicine and infertility. Hope all members enjoy reading and keeping them professionally updated.

Please go on to the IFS website and answer the surveys we have put in for pan India data collection We look forward to seeing you participate actively in Fertivision 2025 at New Delhi where you would see IFS at its best – academically, socially and culturally bringing together global and national leaders in the field and please go through the iterature published by IFS. Do not miss it!

Message from the **Editor's Desk**

Dr Rupali Bassi Goyal
Editor

Dear Friends,

Greetings from team IFS
We are pleased to release this edition of IFS Conversations which is based on theme "Male Infertility: Clinical Perspectives" It specially covers the topic as a handbook for clinicians for quick reference.

We sincerely thank all our authors for their wholehearted contribution towards this issue of IFS conversation. We would love to hear your comments and suggestions and encourage all our readers to contribute in our forth-coming issues of IFS conversations.

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Invited Articles

Male Factor Infertility

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Abstract:

Clinical infertility is defined as the inability of the couple to conceive after 1 year of regular, unprotected sexual intercourse. Although, the causes of infertility may vary, around 40% cases are attributed to female factor, 40% to male factor and 20% of the cases have no detectable cause.

Causes of male sub-fertility may be related to congenital, acquired and idiopathic factors which includes testicular dysfunction, endocrinopathies, lifestyle factors (such as tobacco and obesity), congenital anatomical factors, gonadotoxic exposures and ageing. A thorough evaluation of patients to identify treatable or reversible lifestyle factors or medical conditions remains the cornerstone for management of male infertility. This includes detailed history taking, focused physical examination and selective laboratory testing, including semen analysis.

Treatment options include lifestyle optimization, empirical or targeted medical therapy as well as surgical therapies. The use of assisted reproductive techniques has also substantially improved the ability of couples with infertility to have biological children.
It is crucial to address male infertility as it affects the quality of life of the couple.

Keywords: Male factor, Infertility

Introduction:

Infertility is defined clinically as inability to achieve a clinical pregnancy after 12 months of regular unprotected intercourse.[1] Today, many couples tend to plan their families much later in life than they did three decades ago. This has led to an increase in the infertility trend in India as well as worldwide. It has been estimated that around 180 million couples worldwide deal with infertility.[2]

Male infertility is defined by the World Health Organization (WHO) as the inability of a male to make a fertile female pregnant for a minimum of at least 1 year of regular unprotected intercourse. 30-40% of all cases of infertility can be attributed to male factor.[3]

Multiple factors, both modifiable and unmodifiable contribute to male sub-fertility. Partner factors such as age, medications, surgical history, genetic or systemic diseases, environment also play an integral part to influence reproductive outcomes.
The primary goal of male partner evaluation is to identify the contributing factors, provide a comprehensive care plan and evaluate whether the patient fits the criteria that can benefit with assisted reproductive techniques.[4]

Etiology:

The causes of male infertility are numerous and can be attributed to:[5]

1. Endocrinological causes- Kallmann syndrome, Prader-villi syndrome
2. Urogenital abnormalities-Undescended testis, Phimosis,hypospadias, CABVD
3. Genetic causes - CFTR gene mutation, Y-chromosome microdeletion,

Klinefelter syndrome

4. Iatrogenic - Vasectomy, Hernia surgery
5. Immunological - Hemochromatosis, Sarcoidosis
6. Sexual dysfunction- Premature ejaculation, Erectile dysfunction
7. Urogenital tract infection- Gonococcal, Chlamydia, Syphilis
8. Environmental- Chemicals, Alcohol, Smoking
9. Idiopathic

Causes of male infertility can also be classified based on the origin of the pathology:

Pretesticular	Testicular	Post-testicular
Low gonadotropin levels	High gonadotropin levels	Normal gonadotropin levels
Hypothalamic cause	Cryptorchidism	Obstruction
Pituitary cause	Anatomic abnormalities	Epididymal dysfunction
05.08.2024	Hernia repair	Infection of accessory gland
	Varicocele/ Hydrocele	Prostatic hypertrophy
	Infections	Retrograde ejaculation

It has been observed that males with infertility tend to be at a higher risk of developing health-related co morbidities[6,7] with azoospermic men having a higher propensity to develop testicular cancer later in life.[8,9]

Semen parameters of males who have recovered from COVID-19 indicate reduced fertility and even infertility, especially if the infection was severe. The virus appears to affect the testis directly at the cellular level via a cytokine storm and also via the immunological treatments used for treatment.[10]

Spermatogenesis is the process in which primordial germ cells develop into haploid spermatozoa. In mammals, it occurs in the seminiferous tubules of the testicle. This process starts in the region located close to the basement membrane of the tubules. The stem cells in this area undergo mitotic division to form spermatogonial stem cells.[12]
Two types of cells are produced due to this mitotic division- Type A and Type B cells. Type A cells replenish the stem cells whereas the type B cells differentiate into primary spermatocytes.
The primary spermatocytes divide meiotically (Meiosis I) into two secondary spermatocytes which further divides into two equal haploid spermatids by Meiosis II. These spermatids, are then transformed into spermatozoa (sperm) by the process of spermiogenesis. [13]

Thus, the primary spermatocyte gives rise to two cells, the secondary spermatocytes, and the two secondary spermatocytes by their subdivision produce four spermatozoa and four haploid cells.

Physiology of sperm production (Spermatogenesis):

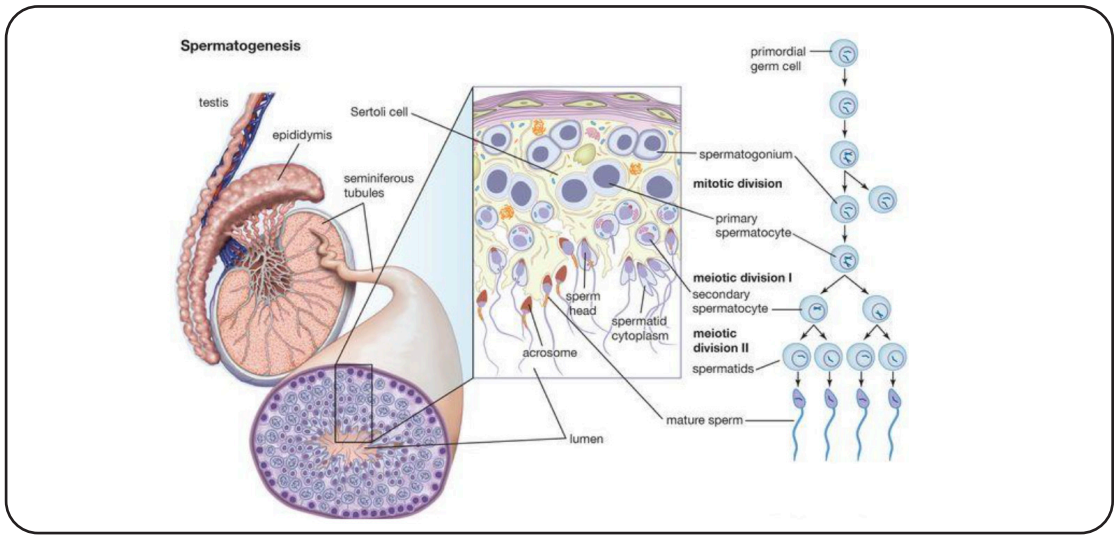

Fig 1. Spermatogenesis[11]

Pathophysiology of sperm damage

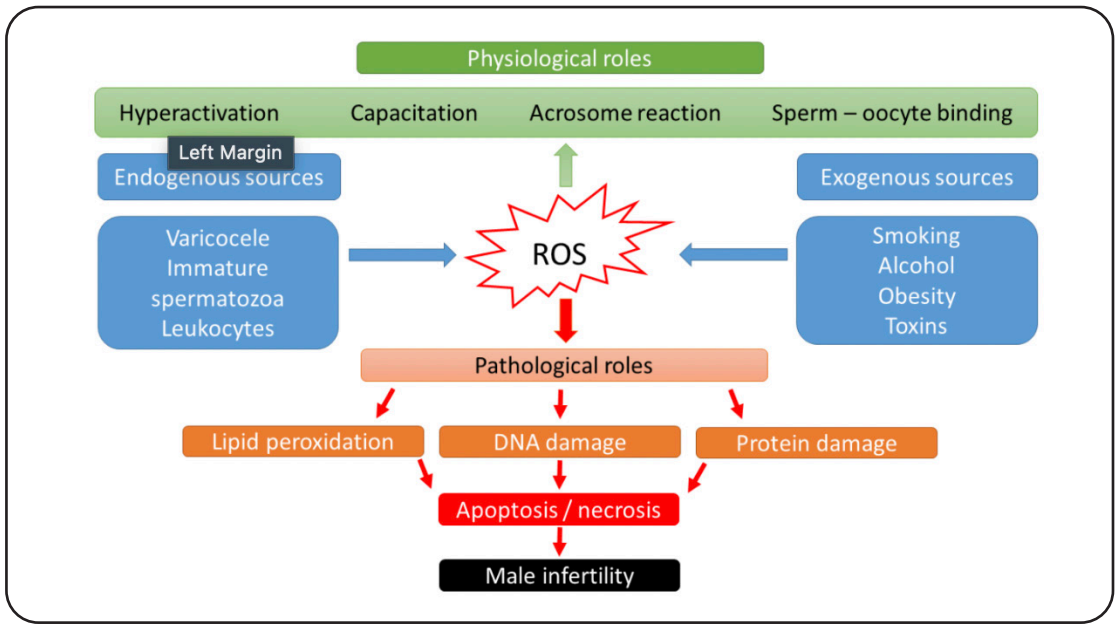

Fig. 2: Physiological and pathological effects of reactive oxygen species (ROS) on male fertility[14]

Reactive oxygen species (ROS) are physiologically produced by human spermatozoa. They act as signaling molecules that trigger biochemical cascades.[15] Low amounts of ROS stabilize the nuclear chromatin and mitochondrial capsule.
The balance between the rates of ROS production and clearance determines the concentrations of intracellular ROS. When the ROSAconcentration exceeds the physiological limit, sperm viability, motility, and fertilisation potential are disrupted owing to their inadequate cell repair systems, as well as insufficient antioxidant defences due to low cytoplasmic content.

This is evidenced by the presence of significantly higher levels of ROS in the semen of infertile men when compared to fertile controls.[16]

Risk factors:

1. Obesity
2. Alcohol/tobacco/drug abuse
3. Toxins/chemotherapy
4. Increased local temperature
5. Prior trauma
6. Hereditary blood dyscrasias (sickle cell disease)
7. Testosterone supplementation

Evaluation of male partner:

The primary objective of evaluation of male partner is:

1. To determine if the male factor is contributing to the couple's infertility issue
2. To identify cases that can be normalized with medical treatment
3. To determine if ART would benefit the couple

A. History:
Primary evaluation starts with a complete and comprehensive sexual and medical history.

Reproductive history	Intake of toxic substances
Family history	Previous chemo/ radiotherapy
Pubertal development	Testicular descent
History of trauma to the pelvis	Infections (mumps, tb, sti)
Surgical history	Anosmia (asso. with Kallmann syndrome)
Occupational history	Breast enlargement and galactorrhea
Systemic diseases	Precocious puberty

It is crucial to assess a couple in totality to be able to provide the best possible care. Cryptorchidism, whether unilateral or bilateral, can affect male fertility even when surgically repaired. Sickle cell disease can cause intratesticular ischemia.
Hypogonadism is observed in patients with chronic renal failure while liver failure sometimes causes gynecomastia (from increased estrogen levels), testicular atrophy, and reduced secondary sex characteristics.
Vasal scarring and obstructive azoospermia is seen in patients with recurrent genital tract infections due to tuberculosis, prostatitis, epididymitis, and STIs (especially gonorrhea), while mycoplasma infections tend to reduce sperm motility.[17]

B. Physical examination:

- Body habitus- To evaluate for signs of endocrinopathy, gynaecomastia and secondary sexual characteristics. Muscular males with low sperm counts should be evaluated for endocrine parameters. A low LH may be suggestive of testosterone abuse[18] Obesity tends to increase peripheral conversion of testosterone to estrogen which tends to decrease sperm counts.[19]
- Secondary sexual features- Testosterone deficiency might cause various physical signs depending on its severity and age of onset. Atypical genitalia is seen in adults with history of hypogonadism in early gestation. However, testosterone deficiency in late gestation causes micropenis. Hypogonadism in childhood causes delayed puberty, while in adults, it causes decreased libido, erectile dysfunction, decreased body hair, infertility, and loss of secondary sexual characteristics.
- Examination of genitalia-
  i. Penis-to rule out hypospadiasis and phimosis
  ii. Testis- size of the testis should be measured with an orchidometer. Largest dimension <4cm with volume <15 ml is considered to be small testis
  iii. Epididymis- hardening of the epididymis is seen in cases of chronic infection. Active infection may lead to tenderness in the epididymal area.
  iv. Vas deferens- bilateral absence of vas, although rare, warrants for genetic testing to rule out mutations of cystic fibrosis transmembrane conductance regulator (CFTR) gene.[20]
  v. Hydrocele/varicocele- testicular ultrasonography with colour doppler should be done in presence of these pathologies.[5]

C. Laboratory parameters:

- Semen analysis- Semen analysis is the cornerstone for diagnosing male infertility. 2 semen samples atleast 6 weeks apart after a minimum of 3 days of abstinence should precede each specimen. Any abnormality in this , warrants further evaluation. (5)(21)

Table 1- WHO semen analysis 2021

Semen characteristics	Lower reference limit (5th centile)
Semen volume (mL)	1.4 (1.3-1.5)
Total sperm count (10^6 per ejaculate)	39 (35-40)
Vitality (%)	54 (50-56)
Progressive motility (%)	30 (29-31)
Total motility (%)	42 (40-43)
Morphology (%)	4 (3.9-4)
Round cells	1-2/ HPF
Semen pH	7.2-7.8

Hormonal testing is indicated in men with abnormal semen parameters. A comprehensive lab test panel would include serum follicle-stimulating hormone (FSH), testosterone, luteinizing hormone (LH), prolactin, estradiol, blood sugar levels and thyroid-stimulating hormone (TSH) levels.

- Low testosterone with high FSH and LH suggests primary hypergonadotropic hypogonadism. A karyotype should be performed.
- Low testosterone with normal or low FSH and LH indicates secondary hypogonadism. Rule out hyperprolactinemia.
- Normal testosterone and LH with a high FSH are suggestive of primary spermatogenic failure. The normal LH indicates proper Leydig cell function, but the high FSH suggests damage to the seminiferous tubules. Check testicle size and consider karyotyping as well as Y chromosome microdeletion testing.
- Normal testosterone, LH, and FSH with azoospermia and normal testicle size, this would indicate obstructive azoospermia, which can potentially be treated surgically

Specialised sperm tests-

i. Antisperm Antibodies (ASA): associated with sperm agglutination or isolated asthenozoospermia. These antibodies can form after testicular surgery or in prostatitis, anytime sperm comes into contact with blood. In women, the cause is an allergic response to sperm.
ii. Sperm DNA fragmentation index (DFI): associated with recurrent implantation failures or pregnancy losses.[22] According to ESHRE, it is not recommended in men with WHO normal semen parameters.
iii. Hypoosmotic swelling test (HOS): Live sperm tend to swell with exposure to very dilute solutions as opposed to dead sperm.

i. Therefore, this can differentiate between dead sperm and viable but non-motile sperm for ICSI.

- Genetic testing: warranted in men with severely abnormal semen parameters, recurrent implantation failure/pregnancy losses or family history of infertility. Commonly associated conditions include Y-chromosome microdeletion and CFTR gene mutation. Although ICSI has helped men with defective genes to father children, there is also the increased risk of transmission of various genetic defects to the progeny, and this should be carefully considered before proceeding

- Scrotal ultrasound: it provides an accurate size measurement for the testes, and helps identify pathology not otherwise clinically detectable, such as small spermatoceles, subclinical varicoceles, and testicular cancers[5] The American Urological Association (AUA) guidelines do not recommend the routine use of scrotal ultrasound in male infertility. However, due to it's effectiveness with added advantage of being safe and inexpensive, it has become a valuable diagnostic tool.

- Post-ejaculatory urinalysis- is recommended with a semen volume <1.0 ml, as a post-ejaculatory analysis for sperm may be required to confirm retrograde ejaculation. Sperm obtained from this sample can be used in IVF/ ICSI

- Trans-rectal ultrasound (TRUS)- can identify ejaculatory duct obstruction where dilated ejaculatory ducts and seminal vesicles are seen. (23) It should be considered, along with a postejaculatory urinalysis, when the semen volume is low (<1.5 mL), the pH is acidic, and in azoospermia when the vas are palpable, and the serum testosterone is normal, as this is suggestive of ejaculatory duct obstruction.[5]

Management:

The prognosis of male infertility is individualized and depends upon the cause. An appropriate workup should be done based on need and necessity.

Following an appropriate workup, counselling, surgery, or assisted reproductive technology can be offered to the couple.

- Lifestyle changes- Reasonable healthy lifestyle changes should be recommended. These include stopping smoking, limiting or eliminating alcohol intake, adopting a more nutritious diet, weight loss, daily exercise, reducing stress and elimination of exposure to toxic substances. (24) (25)

- Oral medications- Oral therapies are considered optional and categorized as antioxidant-based, nutrition-based, and hormonal

i. Antioxidants: these work by reducing the effects of oxidative stress on semen and sperm. In a 2020 single-blinded study involving 50 idiopathic infertile men with abnormal semen analyses antioxidants taken for 3 months resulted in statistically significant improvements in sperm count, concentration, motility, progressive motility, and morphology as well as better semen volume and pH.[26]**Coenzyme Q10 or CoQ10** appears to have a beneficial effect on sperm quality by reducing sperm cell oxidative stress. (27) The usual recommended dose is 300 mg daily.

Folic acid is involved in cell division and the synthesizing and repairing of DNA and RNA.(28) Folic acid improves spermatogenesis by enhancing the methylation of DNA and limiting the activity of apoptotic genes.[28] The recommended daily dose of folic acid is 500 to 1000 mcg. (29) Higher doses are not recommended and may actually decrease sperm quality by downregulating DNA methylation.[30]

Lycopene is a powerful antioxidant shown to increase male fertility and significantly improve semen parameters.[31] Sperm counts can increase up to 70% and progressive motility up to 54%, while morphology improves by up to 40% in various studies. The recommended dosage of lycopene used as a supplement for male infertility is 6 mg daily.[32]

N-acetyl cysteine therapy increases sperm counts, enhances motility, reduces abnormal morphology, decreases DNA fragmentation, improves acrosomal activity, and acts as an effective semen antioxidant.[33,34] The usual dose is 600 mg to 1200 mg daily.

Vitamin C (ascorbic acid) is a potent antioxidant which protects against DNA damage and may improve semen viscosity.[35] It also appears to improve the hormonal profile of subfertile men and their semen parameters. Daily dosage of supplemental vitamin C is 500 mg to 1000 mg daily.

Vitamin D supplementation may help with sperm motility. There is also evidence that men with unexplained infertility and low vitamin D levels may suffer increased sperm DNA damage.[36]

- Hormonal agents- includes aromatase inhibitors, clomiphene, and tamoxifen. **Clomiphene** citrate is a selective estrogen receptor modulator (SERM) and in small daily doses can increase gonadotropins (FSH and LH) and stimulate spermatogenesis, making it useful in cases of idiopathic male infertility. The mechanism of action is inhibition of the estradiol negative feedback response to the hypothalamus, which results in a higher release of LH, causing higher testosterone levels.[37] Improved semen parameters are seen within 3 months. **Tamoxifen** is also a SERM which competes with the hormone for binding sites, acting as a competitive inhibitor. It acts by selectively blocking hypothalamic estrogen receptors, thereby, increasing FSH and LH levels and ultimately promoting spermatogenesis. (38) It is best used for idiopathic oligospermia as it tends to be most effective in boosting sperm count and concentration.[39]

- Gonadotropin therapy- it is indicated in men with idiopathic infertility. A meta-analysis of 6 randomized trials of gonadotropic therapy in male infertility patients by Finkelstein et al; reported higher pregnancy rates than the placebo group.[40] FSH stimulates Sertoli cell activity and sperm production. However, when used alone as a therapy for male factor infertility, it appears to have only a limited benefit on sperm production.[41] sperm parameters have shown considerable improvement when human chorionic gonadotropin (HCG), LH, FSH, GnRH, and human menopausal gonadotropin (HMG) were used in conjunction with each other. HCG acts similarly to LH but is cheaper and has a longer half-life. HMG contains both FSH and LH and works similarly to GnRH

- Varicocelectomy- Varicocele repairs are generally only recommended in infertile men with abnormal semen parameters who have large, clinical grade 3 varicoceles, apparent on clinical examination.[42] Infertile men with small varicoceles that are not palpable on physical examination (typically with varicose vein diameters <3 mm) are not likely to benefit from varicocelectomy.[42,43] Men with extremely low sperm counts (severe oligospermia/ azoospermia) or raised FSH with bilateral small testes may not benefit from varicocele surgery as these features suggest extensive testicular germ cell damage.[42]

- **Assisted reproductive techniques (ART)**

i. **Intrauterine insemination (IUI):** it is a process in which semen and sperm of the male partner (or a donor) is processed and artificially instilled into the fertile female uterus. It helps to bypass vaginal allergic responses and toxic cervical mucus. It is indicated in unexplained or mild male factor infertility. (44) A total motile sperm count of at least 5 million is needed for successful intrauterine insemination. The pregnancy rates is about 18% per attempt of IUI.

ii. **In-vitro fertilization (IVF)/Intra-cytoplasmic sperm injection (ICSI):** IVF can be used in couples when IUI with ovarian stimulation has failed, female partner age over 40 years of age, bilateral tubal disorders or severe male factor infertility.(44) It involves the fertilization of the female egg outside the body. Fresh or cryopreserved sperm may be used along with sperm retrieved by surgical techniques.[42]

iii. **Surgical techniques of sperm retrieval:** These include Microsurgical Epididymal Sperm Aspiration (MESA), Percutaneous Epididymal Sperm Aspiration(PESA), Testicular Sperm Aspiration (TESE) and Microsurgical Testicular Sperm Aspiration (MicroTESE).

Prognosis:

The prognosis of male infertility is individualized and depends upon the cause. An appropriate workup should be done based on need and necessity. Following an appropriate workup, reasonably selected treatments, counseling, surgery, or assisted reproductive technology can be offered to the couple.

ART plays a crucial role in treating male factor infertility and helps couple achieve their dream of having a healthy baby.

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Recent Advances in Medical Management of Male Infertility

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Introduction

Male infertility accounts for approximately 40-50% of infertility cases. Advances in diagnostic modalities and treatments have increasingly focused on tailored therapeutic interventions based on specific aetiologies.

Aetiological classification

There are multiple etiological factors responsible for male infertility, which can be widely classified based on various criteria .
Apart from the long established classification of pre-testicuar causes, testicular and post testicular causes of spermatogenesis defects . They can be further classified on the basis of the medical amenability factors – as in

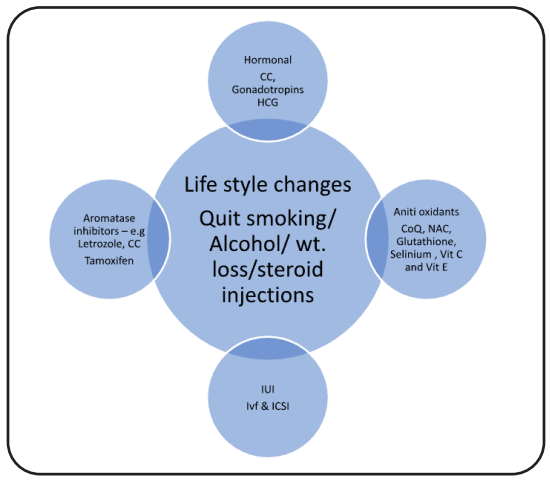
- Modifiable Causes of male infertility - 18% of cases - obstructive azoospermia, ejaculatory duct and prostatic midline cysts, gonadotropin deficiency, sexual function disorders, sperm autoimmunity, varicoceles, and reversible effects of toxins.
- Unmodifiable -causes of male infertility or subfertility is found in 70% of cases - oligozoospermia, asthenozoospermia, teratozoospermia, and normospermia with functional defects. ART will generally be necessary for reproduction.
- Untreatable male sterility is seen in 12% of cases - primary seminiferous tubular failure, Sertoli cell-only syndrome, and bilateral orchiectomy.

General guidelines for medical management

Multiple medications, tumors, and /or disease processes affecting the pituitary gland or hypothalamus can potentially cause male infertility by altering gonadotropin releasing hormone or causing gonadotropin deficiency such as idiopathic hypogonadotropic hypogonadism (IHH), Kallmann syndrome (IHH with anosmia), and combined pituitary hormone deficiency.

Pituitary neoplasms such as sellar tumors, macroadenomas, and prolactinomas also lead to infertility due to alterations in gonadotropin production as well as various genetic causes such as Prader-Willi, Young, and Laurence-Moon-Biedl syndromes. Even, acquired disorders, such as primary androgen overproduction and exogenous testosterone supplementation, also directly decreases gonadotropic secretion, causing reduced sperm counts and infertility.

So, an evaluation of the general condition is must for patients with male infertility. Liver and renal failure also leads to abnormalities in semen parameters . The levels of the Thyroid and Prolactin hormones must be assessed and rectifies before subjecting a patient to further medical management.



No Treatment

When left untreated, some infertile couples still manage to achieve a pregnancy. Studies have shown that 23% of untreated infertile couples conceive after 2 years, which goes up to 33% after 4 years. Even in men with severe oligozoospermia (<2 million sperm/mL), 7.6% of these untreated male infertility patients are able to produce a pregnancy within 2 years[1]

Pyospermia or leukospermia:

Refers to the presence of increased amounts of WBCs in the semen

Leukocytes are normally found in the semen, and levels >1 million/mL in the semen are considered excessive and possibly indicative of infection. It has been suggested that excessive numbers of leukocytes in the semen could contribute to infertility by the release of free radicals from the neutrophils, resulting in oxidative damage to the sperm.

The benefit of treating pyospermia with antibiotics or nonsteroidal anti-inflammatory drugs (NSAIDs) is of doubtful significance. As of now there is paucity of data supporting treatment, and there is the potential for adverse effects on general health and fertility from drug therapy.

Amongst patients may have chronic prostatitis, although specific organisms may be identified, but a clear benefit to fertility has not been demonstrated by antibiotics or other treatments in controlled trials.

Men with increased round cells on SA (>1million/mL) should be evaluated further to differentiate white blood cells (pyospermia) from germ cells. (Expert Opinion)[2,3]

Lifestyle Changes

A healthy lifestyle is the key to successful management of male infertility in the treatable group.

Life style modifications like stopping smoking, limiting or eliminating alcohol intake, adopting a more nutritious diet, weight loss measures if obese, increased exercise, avoiding potentially toxic artificial lubricants during sexual activity, reducing stress, eliminating illegal and recreational drug use (such as marijuana), minimizing prescription drugs, avoiding exposure to pesticides and heavy metals (such as lead, mercury, boron, and cadmium), and eliminating any unnecessary chemical exposures. Low body weight and obesity are also possible risk factors for male infertility.[4]

Loose fitted clothes around the scrotum to maintain the temperature help in normal spermatogenesis. are also suggested in patients. Whereas hot baths, saunas, and tight-fitting underwear are suggested to be avoided, although the are of not much clinical significance.

Pharmacotherapy

Oral therapies can be broadly classified among the three categories as re considered optional and categorized as antioxidant-based, nutrition-based, and hormonal.

The benefit of the drugs is still a grey zone and needs to be discussed with the patients regarding the marginal benefits they may offer in patients with abnormal semen parameters.

Aromatase inhibitors

Aromatase Inhibitors have shown an ability to improve semen parameters but have not been conclusively proven to improve pregnancy rates, as most of the available studies are either case reports, anecdotal, or of low quality. A recent review and meta-analysis of aromatase inhibitors for male infertility have suggested that these drugs can statistically improve abnormal semen and hormonal parameters, plus they appear to be safe.5
Rationale – They are indicated in patients who have an low testosterone to estradiol ratio. This kind of a scenario is more commonly observed amongst the patients belonging to the obese category where the production of estrogens is higher due to peripheral conversion in fat.

Both the steroid-based (testolactone) and nonsteroidal (anastrozole and letrozole) drugs appear to have equivalent efficacy.

Dosage - Anastrozole is given in a dose of 1 mg 3 times a week, while the dose for letrozole is 2.5 mg also 3 times weekly.

SERMS (selective estrogen receptor modulator)

Clomiphene and Tamoxifen are the two most commonly used SERMs .
Clomiphine

Rationale - It works by inhibiting the estradiol negative feedback response to the hypothalamus, which resulting in a higher release of LH, causing higher testosterone levels but also resulting in higher estradiol levels. This results in an increase in the androgen levels causing enhanced spermatogenesis. It helps in idiopathic male infertility cases as well as hypogonadotropic hypogonadism cases.

Dose - in small doses (25 mg every other day up to 50 mg daily, with 25 mg daily being

Tamoxifen acts by selectively blocking hypothalamic estrogen receptors, tamoxifen stimulates GnRH secretion, greatly increasing FSH and LH levels and ultimately promoting spermatogenesis. It is best used for idiopathic oligospermia as it tends to be most effective in boosting sperm count and concentration. Various studies have reported an improvement in the motility, viability, and morphology of the sperms to a certain extent.[6]

Gonadotropins

Various combinations of HCG, FSH, GnRH, and HMG have been successfully used to treat male infertility in men with idiopathic hypogonadotropic gonadism.

Rationale - FSH stimulates Sertoli cell activity and sperm production, HCG acts similarly to LH but is cheaper and has a longer half-life. HMG contains both FSH and LH and works similar to GnRH.

These hormones when administered in varying combinations for over a period of 1 to 2 years have shown to benefit the patients with idiopathic hypogonadism. Studies have reported a response rate of 20 to about 50 % amongst these patients for normalizing fertility.[7]

Dosage - Optimal dosing of HCG has not been definitively determined. Still, it has been given by IM injections in doses of 3000 to 10,000 IU 2 to 3 times a week, along with either anastrozole, clomiphene, tamoxifen, or FSH, which is typically administered concomitantly.

APHRODITE' (Addressing male Patients with Hypogonadism and/or infeRtility Owing to altereD, Idiopathic TEsticular function) is a novel and standardized patient stratification system for dealing with male infertility independent of etiological causes. This system also helps in establishing a standardized system of communication amongst the clinicians, researchers and patients thereby contributing towards improved management of these patients.

Antioxidants

Apart from the anti oxidant effect these drugs also give a psychological benefit to the couple. It also helps them to try for conception by natural means.

Oral Therapies: Antioxidants, Aromatase Inhibitors, Clomiphene, L-Carnitine, N-Acetyl Cysteine, Nutritional Supplements, and Tamoxifen.

Rationale – reactive oxygen species are a known miscreant for male infertility. The Antioxiants help to damage caused by Oxidative stress amongst these patients.

Various agents have been and are available for the patients with idiopathic male infertility. The most commonly studies

The most studied vitamins, minerals, and antioxidants used for male infertility include coenzyme Q10, folic acid, L-carnitine, lycopene, N-acetyl cysteine, vitamin C, vitamin E, folic acid, selenium, and zinc.

L-carnitine is an amino acid and antioxidant that is normally found in the epididymis.

Mechanism of action - It is known to increase fatty acid transport into sperm mitochondria, which is needed for epididymal sperm energy production. Overall it appears to increase sperm motility, morphology, and maturation while reducing apoptosis.

Dose - 3 gm per day has been suggested for patients with male infertility.

In a study of 180 infertile male patients with idiopathic oligo-astheno-teratozoospermia were given an L-carnitine supplement and demonstrated significant improvements in sperm count, concentration, and morphology. However, in these patients motility was not affected, and the study was of insufficient duration to determine if pregnancy rates were affected.8

Coenzyme Q10 or CoQ10

Mechanism - appears to have a beneficial effect on sperm quality. It reduces organic peroxides in the semen, which decreases sperm cell oxidative stress. It reportedly improves sperm motility, morphology, and concentration. The usual recommended

Dose – A dosage of 300 mg to 600 mgs daily is recommended.

A study conducted on a group 50 idiopathic infertile men with abnormal semen analyses (oligozoospermia and asthenozoospermia) showed that a proprietary daily antioxidant mixture of coenzyme Q10 (30 mg), zinc (8 mg), vitamins C (100 mg), and E (400 IU), folic acid (400 mcg) and selenium (200 mcg) taken for 3 months resulted in statistically significant improvements in sperm count, concentration, motility, progressive motility, and morphology as well as better semen volume and pH. Better quality studies are needed for the benefit to be proved beyond a doubt.

Folic acid, also known as vitamin B-9, apart from being an active vit of the B complex series has also shown to have antioxidant activity.

Mechanism – Folic acid is actively involved in numerous cellular functions, including cell division and the synthesizing and repairing of DNA and RNA.. it also improves spermatogenesis by enhancing the methylation of DNA, limiting the activity of apoptotic genes in the testes, reducing reactive oxygen species through its antioxidant activity, and managing abnormal testicular methylenetetrahydrofolate reductase (an enzyme involved in DNA methylation).

Folic acid is often used together with zinc supplementation.

Dose – The daily dose of folic acid is 500 to 1000 mcg.

Lycopene is a carotenoid antioxidant and the organic pigment that makes fruits and vegetables yellow, orange, or red.

Mechanism - It is a powerful antioxidant shown to increase male fertility and significantly improve semen parameters. Sperm counts can increase up to 70% and progressive motility up to 54%, while morphology improves by up to 40% in various studies.

Dose - The required dosage of lycopene used as a supplement for male infertility is 6 mg daily.

N-acetyl cysteine (NAC) is a dietary supplement and mucolytic agent sometimes used to treat overdoses of acetaminophen and paracetamol.

Mechanism - A thiol-based derivative of the amino acid L-cysteine and a precursor to glutathione peroxidase, it possesses significant anti-inflammatory, mucolytic, and antioxidant properties. In males with infertility NAC increases sperm counts, enhances motility, reduces abnormal morphology, decreases DNA fragmentation, improves acrosomal activity, and acts as an effective semen antioxidant.

Dosage - Dose is 600 mg to 1200 mg daily

Selenium, is a micronutrient, an element that is required in micro quantities in the body.

Mechanism - it is known to help improve sperm concentration, motility, and morphology by acting to enhance enzymatic antioxidant activity. It is involved in the biosynthesis of testosterone and sperm production.

Dosage- The recommended dosage when is 200 mcg per day and is often used together with 400 IU of vitamin E.

Vitamin C (ascorbic acid) is a potent antioxidant normally found in large amounts in the semen,

Aphrodiate Ceiteria

Group		Treatment	
Hypogonadotropic hypogonoadism	1	CONGENITAL r - hFSH + hCG	ACQUIRED HCG (r-hFSH, if needed)
Lowered semen parameters, normal FSH and TT levels Reduced GN action & functional Hypogonadism	2	r-hFSH monotherapy	
Lowered semen parameters, normal FSH and reduced TT levels Reduced GN action & biochemical Hypogo	3	R-hFSH (+ hCG)	
Lowered semen parameters, Increased FSH, nornmal or reduced TT levels	4	hCG (+ r-HFSH if needed)	
Unexplained male infertility	5	r-HFSH monotherapy	

Mechanism – It protects against DNA damage and may improve semen viscosity. Vitamin C also appears to improve the hormonal profile of sub fertile men and their semen parameters. The infertile patients have shown improved progressive motility, sperm counts, concentration, morphology, and pregnancy rates. Vitamin C supplementation for male infertility is often given with 400 IU of vitamin E daily.

Dose - The recommended dosage of supplemental vitamin C is 500 mg to 1000 mg daily.

Vitamin D supplementation may help with sperm motility. There is also evidence that men with unexplained infertility and low vitamin D levels may suffer increased sperm DNA damage.

Zinc is the most abundant metal in the human body after iron.

Mechanism - Zinc is important for sperm maturation and testicular development, protecting spermatozoa from damage by oxidized thiols, improving sperm function, and maintaining fertilization capacity. Zinc is often given together with folate, which seems to improve the results. Seminal zinc levels appear important in maintaining sperm counts, but excessive levels can adversely affect motility.

Dose- The dosage for supplemental zinc is 200 mg (25-400 mg). (Note that zinc sulfate 220 mg has only 50 mg of elemental zinc.)

Overview of Oral Therapies for Male Infertility

Overall, there is a paucity of high-quality data to support definitively recommending any of these nutritional or antioxidant therapies. Most studies are low quality, small, short-term, fail to follow through to actual pregnancy rates, or lack an adequate control group, and few show consistent benefits. Even where improved semen parameters and sperm quality can be documented, the pregnancy rate may not necessarily change. Further, too many nutraceuticals and antioxidants or the wrong combination may actually impede essential oxidative mechanisms or increase reductive stress, resulting in poor sperm function with reduced fertility.

Couples should be informed that published guidelines do not recommend the use of supplements, nutraceuticals, or vitamins for male infertility, as existing studies are generally inadequate to definitively prove efficacy.[3,11]

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Genetics and Male Infertility

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Male infertility is characterized by impairments in sperm production, function, or transport, ultimately affecting a man's ability to conceive. The primary diagnostic criterion for defining male infertility is semen analysis. Based on the findings of semen analysis, male infertility is classified as azoospermia (absence of sperm in ejaculate), oligozoospermia (subnormal sperm concentration), asthenozoospermia (reduced sperm motility), and teratozoospermia (a high percentage of morphologically abnormal sperm). Following an abnormal semen analysis, the next step involves a detailed medical, reproductive, and sexual history along with a thorough physical examination. Based on the physical examination of azoospermia males, they are classified as obstructive azoospermia and non-obstructive azoospermia.

Male infertility is associated with a wide range of causes, including hormonal imbalances, testicular dysfunction, structural abnormalities, lifestyle factors, and genetic defects.[1] Broadly, these causes are classified as pre-testicular (hormonal or endocrine disorders affecting spermatogenesis), testicular (intrinsic defects in sperm production), and post-testicular (obstructions or functional issues affecting sperm transport). Genetic factors play a significant role in male infertility, where chromosomal abnormalities (e.g., Klinefelter syndrome, Y-chromosome microdeletions) and single-gene mutations.[2,3] Emerging evidence also highlights the role of mitochondrial DNA mutations in sperm dysfunction.[3] Understanding the genetic basis of male infertility is crucial for accurate diagnosis, genetic counseling, and potential therapeutic interventions.

Genetic testing in men with obstructive azoospermia

Obstructive azoospermia is due to blockage or absence of the vas deferens, preventing sperm transport despite normal spermatogenesis. It exists in five forms: (a) congenital bilateral absence of the vas deferens (CBAVD) with normal kidneys, (b) CBAVD with unilateral renal anomalies (CBAVD-URA), (c) congenital unilateral absence of the vas deferens (CUAVD), (d) CUAVD-URA, and (e) CBAVD/CUAVD with ejaculatory duct obstruction. Distinguishing obstructive azoospermia from non-obstructive azoospermia and its sub classification is crucial as the genetic testing required in these cases are different.[3]

CBAVD is a monogenic autosomal recessive conditions. In 60–70% of men with CBAVD without renal involvement, mutations in CFTR gene are reported. In the remaining 30–40% linked to other genetic factors are involved. CFTR mutations are classified as severe (leading to cystic fibrosis) or mild. Most CBAVD cases have one severe and one mild mutation, while some have two mild mutations.[3] Inheritance of two severe mutations lead to cystic fibrosis. Sequencing of the CFTR gene is recommended in all cases of men with CBAVD without renal involvement. In CFTR-negative CBAVD cases, variants in ADGRG2, PANK2, SCNN1B, and CA12 genes have been identified, though their clinical relevance remains uncertain.[3]

As men with CBAVD and CFTR mutations maintain normal spermatogenesis, they are candidates for testicular sperm extraction (TESA) and Intra Cytoplasmic Sperm Injection (ICSI) for biological parnethood. However, as the condition is autosomal recessive and these many carry a severe mutation, there is a significant risk of cystic fibrosis in the offspring if the female partner is also a carrier. Therefore, genetic testing of the female partner is crucial when the male carries a CFTR mutation. If both partners are carriers, prenatal diagnosis or preimplantation genetic testing for monogenic disorders (PGT-M) is recommended to prevent cystic fibrosis in offspring. If the female partner has a normal CFTR genotype, prenatal testing is unnecessary.

Genetic testing in non-obstructive azoospermia and oligozoospermia

Once the diagnosis of non-obstructive azoospermia or oligozoospermia is established, karyotyping and Y chromosome microdeletion testing are the clinically recommended tests.

Routine G-banding karyotyping at standard resolution is adequate for diagnosing chromosomal abnormalities in men with non-obstructive azoospermia and oligozoospermia. Although very rare, there are men with 46, XX karyotype without frank genital anomalies or sexual ambiguity may present in an infertility clinic. In such men (46,XX males), PCR or FISH for presence of the SRY gene is usually recommended. However, such men will not have any spermatogenesis in in absence of other Y linked gene and are not candidates for TESA-ICSI. Donor sperm or adoption is recommended in such cases.

Around 10-15% of men with non-obstructive azoospermia and oligozoospermia have karyotype anomalies, including Klinefelter's syndrome (47, XXY) and 45, X/46, XY mosaicism Structural abnormalities such as Robertsonian translocations, inversions, and Y chromosome defects (ring Y, truncated Y, or isodicentric Y) may also be present. Polymorphic chromosome variants are detected in karyotyping and are also found in normozoospermic men, albeit at lower frequencies. While not considered pathogenic, some studies suggest they may disrupt meiosis, potentially contributing to azoospermia or oligozoospermia.

As spermatogenesis is often seen in such cases men with karyotypic abnormlzities can be offered TESA-ICSI for biological parenthood. However in in couples where karyotype abnormalities are detected, the embryos generated may be aneuploid, leading to implantation failure or miscarriage. Thus in cases of 47, XXY (and its mosaic forms) and 45, X/46, XY mosaics PGT-A (Preimplantation Genetic Testing for aneuploidy) is recommended to improve pregnancy success rates. In men with translocations, PGT-SR (PGT for structural rearrangements) is done to select blastocysts without the aneuploidy resulting in improved success rates. The use of PGT-A/ PGT-SR reduces the time to pregnancy and risk spontaneous abortion thereby improving the outcomes of assisted reproduction.

The primary microdeletions implicated in male infertility are those occurring in the AZFa, AZFb, and AZFc regions, as they result in the loss of essential genes required for normal spermatogenesis, ultimately leading to infertility.[2] Additionally, sub-deletions within the AZFc region, such as gr/gr, b1/b3, and b2/b3, have also been linked to male infertility, with gr/gr deletions being notably more common in the Indian population (2). Detecting these Y chromosome microdeletions requires PCR-based testing using a panel of sequence-tagged site (STS) markers. However, the selection of markers can vary across laboratories, and the standard EAA-recommended markers may not be universally applicable to all populations. This variability poses a risk of misdiagnosis if inappropriate markers are used. Therefore, it is crucial for clinicians to ensure that the selected genetic markers are appropriate for the population being tested to achieve accurate and reliable diagnostic outcomes.

Leading medical organizations, including the European Academy of Andrology (EAA), the American Society of Reproductive Medicine (ASRM), and the Indian Council of Medical Research (ICMR), recommend Y chromosome microdeletion testing for men diagnosed with non-obstructive azoospermia or oligozoospermia clinically as it aids in guiding clinical decision-making regarding treatment strategies, assisted reproductive options, and genetic counseling for men with infertility. Since the loss of genes in the AZF loci disrupts spermatogenesis, men with these microdeletions do not respond to conventional medical interventions such as hormonal therapy, antioxidant supplementation, lifestyle modifications, or varicocele surgery, which are typically aimed at improving sperm count and motility. Unlike some cases of oligozoospermia, where semen quality may improve with these interventions, men with Y chromosome deletions do not experience any benefit. Therefore, such medical management approaches are not recommended for this patient group.

For men with AZF deletions, residual spermatogenesis is observed in the testicular biopsies making them potential candidates for testicular sperm aspiration (TESA) followed by intracytoplasmic sperm injection (ICSI). The chance of a positive TESA outcome is higher in men with AZFc and gr/gr deletions.[4] However, sperm retrieved from these individuals often results in compromised embryo quality, reduced blastocyst formation, and lower success rates with assisted reproductive technologies.[ART, 4, 5] Additionally, while ICSI enables men with AZF deletions to achieve biological parenthood, it is important to emphasize that all male offspring will inherit the deletion and, consequently, experience infertility.[2]

This raises significant ethical and reproductive considerations that should be discussed with couples during genetic counseling, allowing them to make informed decisions about their reproductive options. Clinicians should ensure that patients receive thorough pre-procedural counseling regarding these challenges and the likelihood of treatment success before proceeding with TESA-ICSI.

Beyond karyotype abnormalities and Y chromosome microdeletions, men with azoospermia or oligozoospermia may carry mutations in autosomal, X-linked, or mitochondrial genes. Identifying these mutations requires exome or mtDNA sequencing.[3] However, despite promising research, most associations remain speculative without established causality. Therefore, these tests are not recommended for routine clinical use and are currently suited for research purposes.

Genetic testing in men with Multiple Morphological Abnormalities of the Sperm Flagella (MMAF)

Multiple Morphological Abnormalities of the Sperm Flagella (MMAF) is a severe form of asthenozoospermia characterized by sperm with structural flagellar defects, such as short, coiled, absent, or irregularly thickened tails. While the WHO Laboratory Manual for the Examination and Processing of Human Semen does not classify MMAF as a distinct diagnostic category, it provides criteria for assessing sperm motility and morphology, including flagella abnormalities. However, as MMAF leads to significantly impaired sperm motility, reducing the success of natural conception and affecting outcomes in assisted reproduction, particularly intracytoplasmic sperm injection (ICSI). Given its complex etiology, clinicians should consider a comprehensive semen analysis, targeted genetic evaluation, and personalized ART strategies to optimize reproductive outcomes.

Genetic factors play a crucial role in Multiple Morphological Abnormalities of the Sperm Flagella (MMAF), with several mutations identified in genes involved in axonemal and cytoskeletal development. Mutations in genes such as DNAH1, CFAP43, CFAP44, CFAP69, and TTC29 disrupt the assembly and function of the sperm flagellum, leading to characteristic motility defects.[3,6] Many of these genes encode proteins essential for the dynein arms, central microtubules, and peri-axonemal structures, which are critical for proper flagellar movement. MMAF is primarily inherited in an autosomal recessive manner, emphasizing the importance of genetic counseling for affected individuals (6). While genetic testing is not yet a routine part of male infertility workups, whole-exome sequencing (WES) or targeted gene panels can aid in confirming a diagnosis, guiding personalized management, and informing reproductive decisions.

Summary

Genetic evaluation has become an integral part of male infertility diagnosis and management, offering crucial insights into the underlying causes, treatment strategies, and reproductive risks. Genetic testing has enhanced the ability to identify genetic defects contributing to impaired spermatogenesis, sperm function, and structural abnormalities. These findings are particularly relevant in guiding assisted reproductive treatments, as they help clinicians assess the feasibility of sperm retrieval techniques, predict ART success rates, and counsel couples regarding potential risks to offspring. Given the growing recognition of genetic determinants in male infertility, there is an urgent need to establish androgenetics as a specialized field, to ensure that healtjhc are providers and patients understand the implications of their genetic diagnosis. As genetic research continues to evolve, incorporating genetic insights into routine infertility care will enable more precise and personalized approaches, ultimately improving reproductive outcomes for affected individuals and their partners.

Acknowledgments

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Psychological Counselling in Male Infertility

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The inability to conceive children causes significant personal suffering and social repercussions for both men and women. However , psychology of men in the area of infertility remains an under explored territory. Most of the studies in the existing literature focus on the female's psychology. ART works mostly on the female body. They are direct recipients of major infertility treatments, procedures, its outcomes (cycles of ovulation induction, intra-uterine inseminations, in vitro fertilization, oocyte pickups, embryo transfers, fetal reduction, pregnancies, miscarriages, child-birth). Men described their role in infertility settings as being overlooked and ignored by the health care team and saw their role as a bystander. They felt marginalized during treatment process and report feelings of detachment and uncertainty .In recent years, social research concerning the consequences of infertility has increasingly focused on the male perspective, The psychological burden of infertility is relevant for men as well, most commonly being associated with increased rates of depression.[1]

The psychological states of men receiving male infertility treatment have been assessed in both quantitative and qualitative studies. (2) conducted the systematic review with meta-analysis of all English language studies published before August 2022 . Out of the 1171 records , 12 studies were retrieved for further analysis . Various psychological dimensions such as stress, quality of life, and self-esteem were examined , using self-report questionnaires in cross-sectional and longitudinal studies. Open accounts of challenges during treatment have also been analysed in phenomenological studies of smaller sample size. The treatment settings were variable across these studies, and included TESE alone, TESE and intracytoplasmic sperm injection (ICSI), as well as broad or unspecified urological treatment. Despite the different study designs with diverse setting and outcome measures, a consistent pattern of psychosocial strain due to male factor infertility (MFI) and its treatment became evident among men.

Psychological burden of male factor infertility and its treatment

Men with MFI are a particularly vulnerable patient population, displaying a higher risk for sexual, emotional, and psychological strain compared to men in infertile couples without male factor involvement If the reproductive failure was caused by isolated male or combined male and female aetiology, there was an immediate significant negative impact on the emotional status, the somatic or psychophysiological distress in men. It also effected negatively the marital relationship. This impact remained throughout the study period of nearly one year This distress was not seen in men for female factor or idiopathic infertility.[3]

Emotional Distress Before TESE :

Taniguchi et al. (2018)[4] conducted a study evaluating health-related quality of life (HR-QOL) in 89 infertile couples using the Short Form Health Survey (SF-8). The male partners were categorized into non-obstructive azoospermia (NOA; n = 52) and obstructive azoospermia (OA; n = 37) groups. The study found that men with NOA scored significantly lower in the mental health domain compared to those with OA (mean ± standard deviation : 48.8 ± 6.8 vs 51.6 ± 6.6, P = 0.049**). This suggests that men with NOA may experience greater psychological distress before undergoing testicular sperm extraction (TESE) . Men with NOA scored lower on mental health assessments compared to those with obstructive azoospermia (OA) before undergoing TESE

Self-Esteem Changes Post-TESE:

Bendayan et al. (2022)[5] conducted a study assessing self-esteem changes in 44 men with non-obstructive azoospermia (NOA) before and after testicular sperm extraction (TESE). The study found that successful TESE (n = 24) led to a significant improvement in overall self-esteem , particularly in family-related self-esteem (mean ± s.e.m.: 6.7 ± 0.3 to 7.5 ± 0.2, P = 0.002). Conversely, failed TESE (n = 20) resulted in a significant decline in self-esteem across all domains including personal, social, professional, and family-related self-esteem. The findings of this longitudinal show that men with successful TESE experienced an increase in self-esteem, especially regarding family relationships. Conversely, those with failed TESE reported a decline in self-worth suggest that TESE outcomes strongly influence psychological well-being, reinforcing the need for psychosocial support for men undergoing infertility treatment.

Avoidance Coping Strategies

Many men engaged in avoidant coping behaviours during fertility treatment, which contributed to relationship and emotional strain and difficulty processing treatment outcomes .
Stevenson et al.[6] and Johansson et al.[7] conducted thematic analyses of challenges reported in semi-structured interviews of 19 men who had received male infertility treatment. Recurring themes of avoidance and affective symptoms were identified. Throughout 6 months of treatment with a fertility-trained urologist, men with MFI avoided thinking about their infertility problem and disclosing their situation to friends and family, even distancing from friends with children altogether. This was echoed by men with OA who had failed and terminated ICSI following surgical sperm extraction, where the stress of contact with families that have children drove them to seek out families without children. Psychological symptoms of shock, depression, and grief progressed with diagnosis, treatment, and treatment failure.

There is a lack of openness about male factor infertility. Secrecy surrounds the diagnosis, sometimes to the point that women take the blame for the couples' infertility. Relatives of man are less likely to be informed about use of donor sperm than relatives of the woman even after successful treatment. Studies carried out in various cultural or ethnic settings demonstrate that males may find it difficult to disclose the outcomes of infertility testing or unsuccessful treatments, and display their emotions (e.g., shame, guilty feelings) even to their partners. They are also reluctant to share their feelings or concerns with the natural support networks in the family or at work (e.g., parents or -in laws, co-workers). Moreover, males from couples are even unwilling to openly discuss their health status or infertility issues with their fertility doctor or other medical staff. Women on the other hand tend to seek emotional support from others and may be more willing to discuss their feelings openly.

Feelings of inadequacy due a threatened sense of masculinity

Male infertility is a taboo . Media reports on sperm decline equate stereotypical masculinity and virility with fertility. Infertility is equated with impotency , though this was followed by a feeling of redress and regain of self-esteem when sperm was detected through TESE.[8]

Sexual Functioning and MFI

TESE was linked to erectile dysfunction and reduced testosterone levels, suggesting psychological distress influenced sexual health[8]
Several studies have exposed relationship dynamics throughout men's infertility and treatment journey. Most of these studies have focused on the impact of male infertility treatment on male sexual functioning, measured by tools that also evaluated sexual health and well-being. Therefore, these studies have important implications on the sexual dynamics of intimate relationships. Other studies, though fewer, have highlighted emotional and communicative aspects of relationships through diverse study designs.

Infertility is a specific 'crisis', in which the quality of sexual function is closely associated with treatment procedures. Attitudes to sexuality change through the course of the ART, affecting men and women differently. The constant focus on fertility and medical interventions affects the intimacy and sexual relationship between the couple. The intrusiveness of the procedures, medicalization of sex and intimacy, and increased psychological pressure in case of treatment failures impact the sexual relations. During ART, medical investigations and female expectations have been reported to cause sexual dysfunction in the male partner . Men often felt uneasy with their involvement as "sperm donors": 11% of men cannot provide the sample on command, following transient erectile dysfunction or orgasmic disorder, in particular after detection of an abnormality in the results of semen analysis . Giving semen samples in the IVF clinic is perceived as intrusive, thereby contributing to the onset of erectile dysfunction or worsening of subclinical symptoms in subjects with a longer duration of infertility and with increased levels of anxiety . In infertile men, a close association between erectile dysfunction and psychological burden has been demonstrated (especially anxiety and depression)

The "Inferto-sex syndrome" **Fig1** below explains the interrelatedness of the emotional factors

contributing to sexual dysfunction in the couple during ART. These would get further exacerbated in male factor infertility.[9]

ED (erectile dysfunction), HSDD (hypoactive sexual desire disorder)[9]

benefit from online social support networks.

- Fifth, if high stress is detected it is necessary to refer the couple to a mental health practitioner for professional counselling: Seeking therapy or counselling from specialists in reproductive health can provide tailored emotional support.

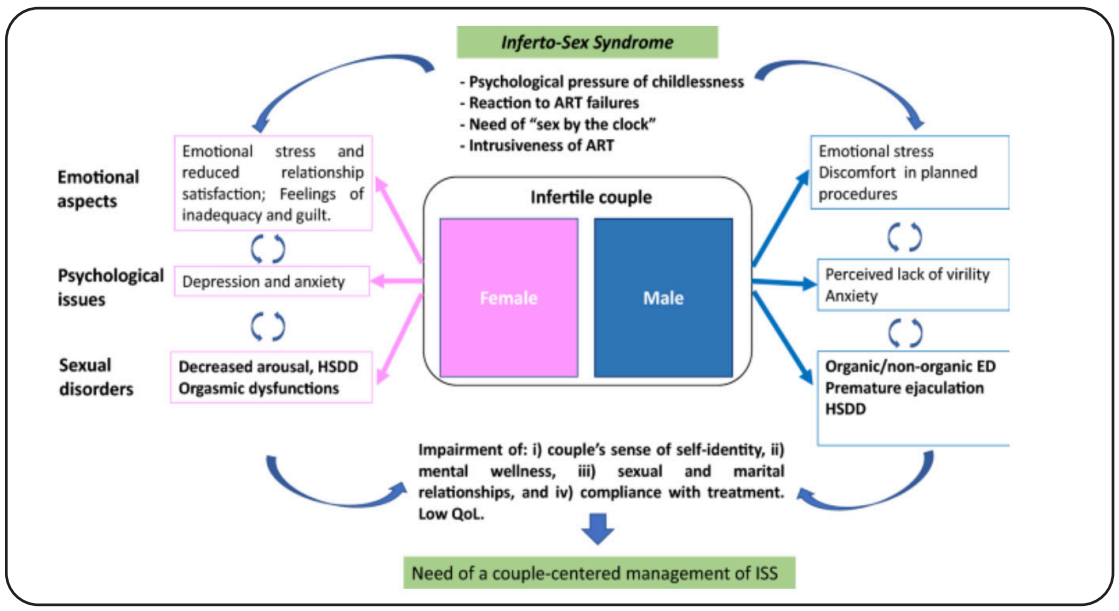

Fig 1: The Sexual Intimacy in infertility

Implications for counselling support for men. [10,11]

Overall, these studies emphasize that men undergoing infertility treatment often face significant emotional challenges. There are several effective psychological support strategies that can help them cope:

- First and foremost, there is a need for routine psychosocial screening in cases of male infertility. Ongoing psychosocial assessment and psychological support must be provided continuously for men undergoing TESE, especially in cases of treatment failure.
- Secondly the correct, Information , resource provision and education is very important Providing clear, comprehensive information about treatment options and outcomes can significantly reduce uncertainty and empower men to make informed decisions.
- Thirdly open communication, not only in terms of information and education but also in terms of the possible psychological impact is needed for the men . It can foster a sense of inclusion and addresses reported issues of marginalization and uncertainty in men . There is a need to encourage men to talk about their experiences with their partners, friends, It reduces feelings of isolation and stress. For men, perhaps the greatest challenge is simply opening up and talking about the experience. It is recommended (10,11) that both partners be involved in treatment right from the beginning so that they learn to work together as a team. This can strengthen their relationship and provide an invaluable and powerful source of social support for each other during the challenging journey of ART. Better psychological state results in improved treatment compliance and success rates for the clinic .
- Fourthly the clinic can provide information about online support groups. Connecting with others who have similar experiences can provide validation , reduce sense of shame and avoidance coping . Males may find it easier to connect with their peers using social media support networks or online discussion boards. Consequently, they are more likely to

Couples therapy to address relationship dynamics can strengthen bonds and improve communication between partners. Counselling Reframing masculinity may be needed . Challenging outdated notions that link fertility to in order to reframe the concept of masculinity can help men redefine their self-worth beyond their reproductive ability.

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Recent advances in male infertility

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Male infertility is a growing concern worldwide, affecting approximately 50% of infertile couples. Having had so many advances in reproductive medicine, male infertility still has high prevalence and is often underreported due to social stigmas1 .This article delve into the latest development exploring the causes, diagnosis and treatment options available with relevant latest guidelines.
There have been a number of technological advancements in both the diagnostic and therapeutic management of male infertility, necessitating all ART practitioners to be updated with contemporary changes in guidelines and practices.

The key diagnostic criteria of male infertility include medical history, physical examination and semen analysis. While Volume, appearance and viscosity of sperms can be evaluated macroscopically; for concentration, morphology, motility, viability and agglutination microscopic analysis is needed. Some advanced methods focused on sperm functions would test the reactive oxygen species (ROS), DNA fragmentation index (DFI), and acrosome reaction but efficacy of all these newer tests are yet to be proved by larger studies.

Recent advances in male infertility treatment include latest WHO semen analysis criteria, refined surgical sperm retrieval techniques, sperm selection technologies, use of artificial intelligence and the exploration of stem cell therapy, offering improved outcomes and hope for subfertile males with previously untreatable conditions.

The latest sixth edition of WHO laboratory manual for examination and processing of human semen [2021][2] comprises three parts including semen examination [basic examination, extended analyses and advanced examination], sperm preparation and cryopreservation, and quality assessment and quality control.

Table1. WHO semen analysis parameters [2010 vs 2021]

Parameter	WHO 2010	WHO 2021
Semen volume (ml)	1.5 (1.4–1.7)	1.4 (1.3–1.5)
Total sperm number (106 per ejaculate)	39 (33–46)	39 (35–40)
Total motility (%)	40 (38–42)	42 (40–43)
Progressive motility (%)	32 (31–34)	30 (29–31)
Non-progressive motility (%)	1	1 (1–1)
Immotile sperm (%)	22	20 (19–20)
Vitality (%)	58 (55–63)	54 (50–56)
Normal forms (%)	4 (3–4)	4 (3.9–4)

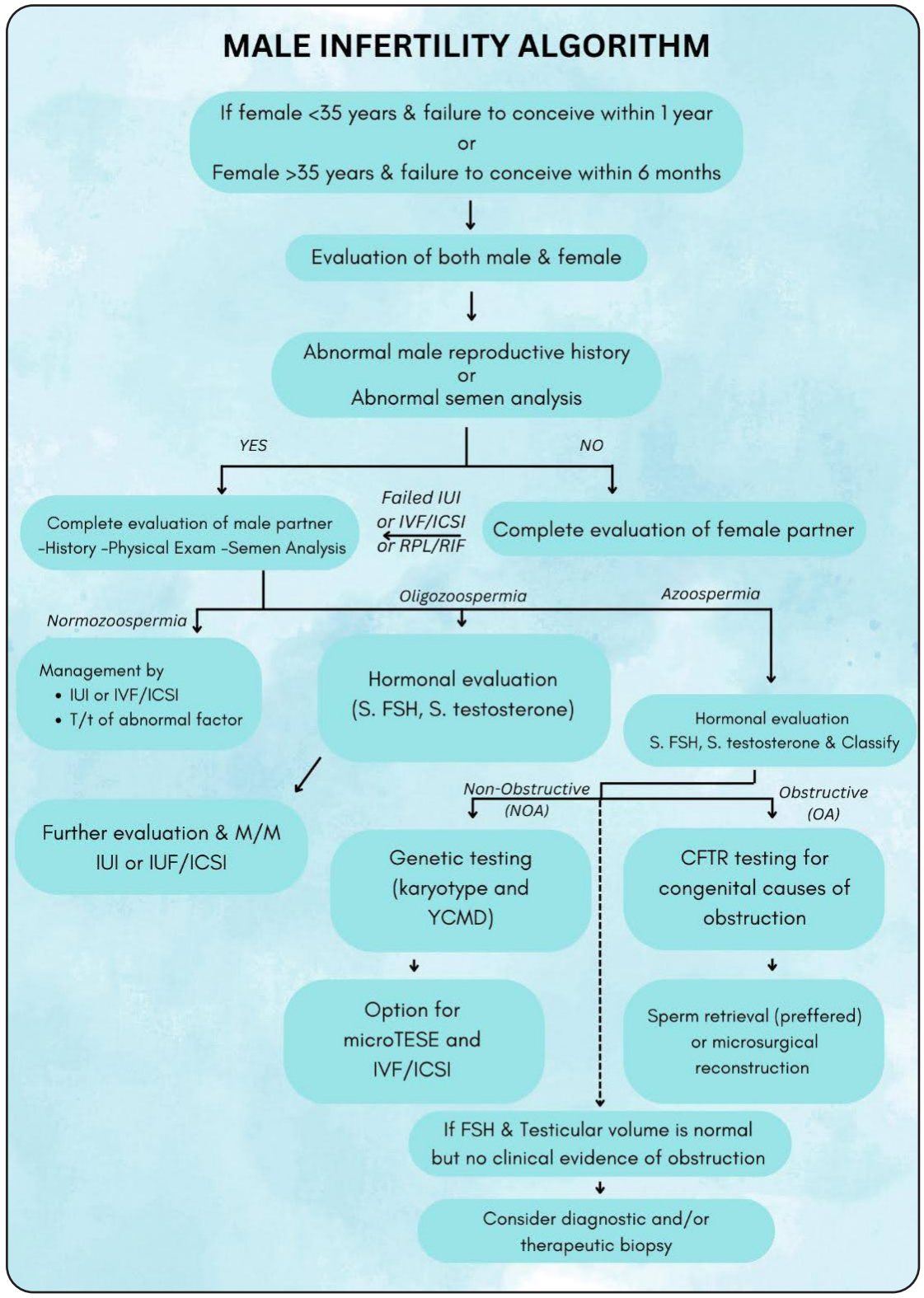

Fig 1: Evaluation algorithm for male Infertility

Inspired by the POSEIDON (Patient-Oriented Strategies Encompassing IndividualizeD Oocyte Number) concept, which was an approach to stratify low prognosis subfertile females, a new approach to classify subfertile males seeking paternity was designed named as APHRODITE criteria with the possibility of treating such populations with hormonal therapy.

This novel classification system 'APHRODITE' is an acronym Addressing male Patients with Hypogonadism and/or infeRtility Owing to altereD, Idiopathic TEsticular function3. It offers a nuanced framework for categorizing subfertile males into 5 subgroups enabling clinicians to tailor hormonal treatment strategies to meet unique need of each subgroup to improve sperm quantity and/or quality.

Table 2, The APHRODITE criteria

Group	Subgroups	Characteristics	Suggested hormonal T/t
Group 1	Hypogonadrotpic hypogonadism [acquired and congenital] (incidence- 1.6%)	Lowered semen analysis parameters with Reduced FSH, LH and Testosterone	Congenital- Rfsh+hcg Acquired- hcg [FSH if needed] 1000-2500 IU of HCG twice weekly for 8-12 weeks[3]
Group 2	Lowered semen analysis parameters [Reduced Gonadotropin action and functional hypogonadism]	Normal FSH, normal testosterone levels	FSH monotherapy
Group 3	Lowered semen analysis parameters [Reduced Gonadotropin action and biochemical hypogonadism]	Normal FSH, reduced testosterone levels	FSH [+ Hcg]
Group 4	Lowered semen analysis parameters [Functional hypogonadism]	Elevated FSH levels, normal or reduced Testosterone levels	Hcg [+ FSH]
Group 5	Unexplained male infertility in context of unexplained couple infertilty	Normal semen analysis parameters, normal FSH and Testosterone	FSH monotherapy?

Surgical sperm retrieval techniques

"A solution for challenging Azoospermia cases"

Male with obstructive azoospermia (OA) and those with non-obstructive azoospermia (NOA) not responding to medical management can fullfill their dream of parenthood by advanced sperm retrieval techniques.

In males with OA, Percutaneous Epididymal Sperm Aspiration [PESA] is an option, but in NOA there are no sperms in epididymis and testicular sperm retrieval is required. Testicular sperm aspiration(TESA) and Percutaneous retrieval by needle aspiration biopsy [NAB] can be tried first and if fails then Testicular sperm extraction (TESE) from open microsurgical biopsy is done using single seminiferous tubule (SST) or MicroTESE techniques.

How Many biopsies are recommended before declaring absence of sperms?

There is no common consensus over this but as per some published studies and author's clinical experience, usually sperms are retrieved in first four biopsies. With the advent of micro-biopsies by the SST or microdissection-TESE techniques more biopsies could be attempted depending upon the size of testes owing to lower surgical complications and improved retrieval rates.

In a microTESE whole testis is examined and sampled.Under microscopic magnification ,all seminiferous tubules are inspected. The possibility of finding the sperm is highest in larger and opaque tubules, placed nearer to blood vessels.

Non retrieval of sperms from one testis warrants retrieval from another testis. In approximately 50% cases sperms are retrieved, but what about the remaining 50% population?

The male is then counselled that it is very unlikely for him to become biological father and option for donor sperm is given4. Does possibility of "missed sperms" or false negative exist with microTESE ? Very rarely but yes it does. Some clinicians have reported sperm retrieval after neoadjuvant therapy, varicolcele5 repair, hormonal therapy and stem cell therapy(under investigation)6 due to changes in testicular milieu but a repeat mTESE procedure involves the risks of bleeding, infection, pain and impaired testosterone production because of primary extraction.

Role of Artificial intelligence [AI] in Azoospermia cases:

AI can predict retrieval success rate by analysing clinical data, hormonal levels and genetic details. It helps in detection of rare sperms and stain-free morphological detection of normal and abnormal sperms ultimately reducing efforts and time hence optimising outcome of micro-TESE.

AI systems have potential to locate and isolate sperms even in complex tissue suspension with contamination by using an open -source, high-speed and highly accurate object detection and image segmentation model software that can help and alert embryologist about the presence of sperms with camera feed system mounted in their microscopes thereby saving time and reducing efforts of embryologists , simultaneously preventing sperms from undue chemical exposures preserving their fertilisation potential.[7]

Andrology lab advancements:

SQA-V Gold, SQA-O, and CASA systems are examples of automated sperm analyzers. These methods are Faster than manual with more standardisation, increased accuracy and precision. Automated systems use electro-optics, computer algorithms and video microscopy to analyse semen samples.

Evolution of DFI kits

DNA fragmentation index [DFI] kits work on sperm chromatin structure assay (SCSA) and sperm chromatin dispersion (SCD) to detect DNA damage. The WHO 6th edition guidelines outlined four standard methods for assessing Sperm DNA fragmentation [SDF] namely TDT (terminal deoxynucleotidyl transferase)-mediated dUTP nick-end labeling (TUNEL), SCD, SCSA and comet assay. As Double stranded break [DSBs] are significantly more lethal than Single stranded breaks [SSBs]C because they are difficult to repair and are associated with recurrent pregnancy loss, delayed embryo development & arrest and reduced implantation rates therefore Newer generations of DFI kits are now developed which are able to detect DSB compared to previously available kits which detect total DFI. Sperms with a large and/or medium halo and length of DNA tail with ≥ 40µm and having a percentage of DNA tail over total signal ≥ 20% are considered as sperms with DSBs depending on the kits used.

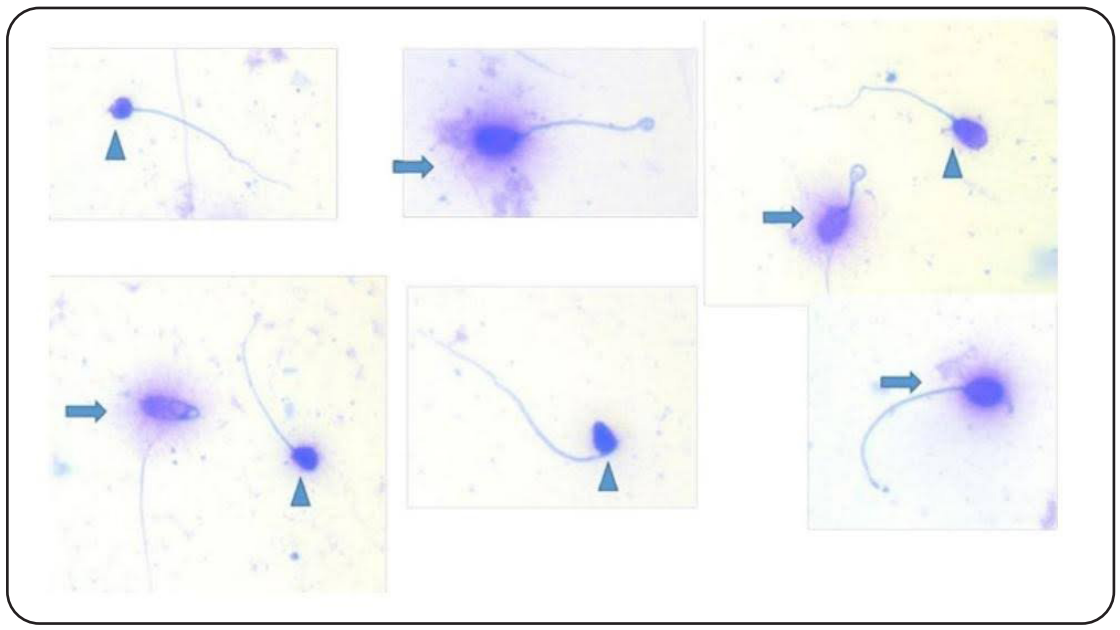

Fig. 2 Sperms with halo (intact DNA)arrow, and without halo (fragmented DNA) arrowhead. (source- WHO 6th edition, lab manual for examination and processing of human semen)

Sperm vitrification devices

By vitrification techniques, extremely high cooling rate can be achieved with relatively small loading volumes of sample [reducing post-thaw sperm hunting time from hours to minutes]. There is no intracellular ice crystallization, hence cell damage is avoided. To reduce cryo-injuries, cryoprotectant free vitrification methods are developed. Males with severe Oligospermia or Azoospermia who yielded very few sperms in TESE/microTESE are ideal candidates for their sperms to be vitrified rather than getting slow freezed. Some examples of sperm vitrification devices are cryotube 0.85ml, cryogenic vial 0.25ml, 1.5ml straw, collector grid 5-10 µl drop, cryovial and spermVD.[8] Each one uses different medium with different thawing principles.

Cross-contamination is always to be avoided. Infected samples should be stored separately in quarantine. Using liquid nitrogen vapor instead of direct contact with liquid nitrogen to cryopreserve the semen is another way to avoid cross-contamination. Validation of vitrification methods is a subject for future research.

Author's opinion on home based semen analysis kits

It may be a satisfactory screening tool that would pave the way for males facing infertility for further guideline-recommended SA by trained Andrologist which is still the gold standard. However, these kits can aid in preliminary assessment and fertility care and provide guidance towards the need to see ART specialist and to seek reproductive health assessment at earliest.

Newer Sperm selection techniques:

These techniques aim to select/isolate the super-excellent sperm for IVF/ICSI. Traditional methods include microscopy, filtering techniques, swim up (SU) and density gradient centrifugation[DGC]. To overcome shortcomings of traditional methods like induction of oxidative stress, leading to DNA damage and high DFI with disruptions in sperm morphology due to application of centrifugal forces, novel cutting edge sperm selection techniques are developed.

Microfluidic Techniques: A Paradigm Shift in Sperm Selection

Microfluidic technique has been evolved as a powerful tool to sort high quality sperms with active motility, normal morphology and intact DNA leveraging the principles of microfluidics and biomimicry.[9] By trying to recreate the physiological environment of the female reproductive tract (FRT) these methods facilitate the gentle and efficient selection of sperms with optimal capacitation potential via precise control of fluid dynamics, temperature, viscosity and chemical gradients; hence minimizing oxidative stress, DNA damage and preserving sperm integrity with the advantage of providing real-time monitoring and high sensitivity.

The progression of microfluidic sperm sorting can be delineated into three generations based on advancements in sorting principles, Gen 1.0 are passive sorting devices based on sperm physical properties, Gen 2.0 includes active sorting devices based on sperm rheological properties and Gen3.0 includes external stimuli-induced sorting devices. limitations are complexity of device fabrication, chances of clogging due to debris and high cost.

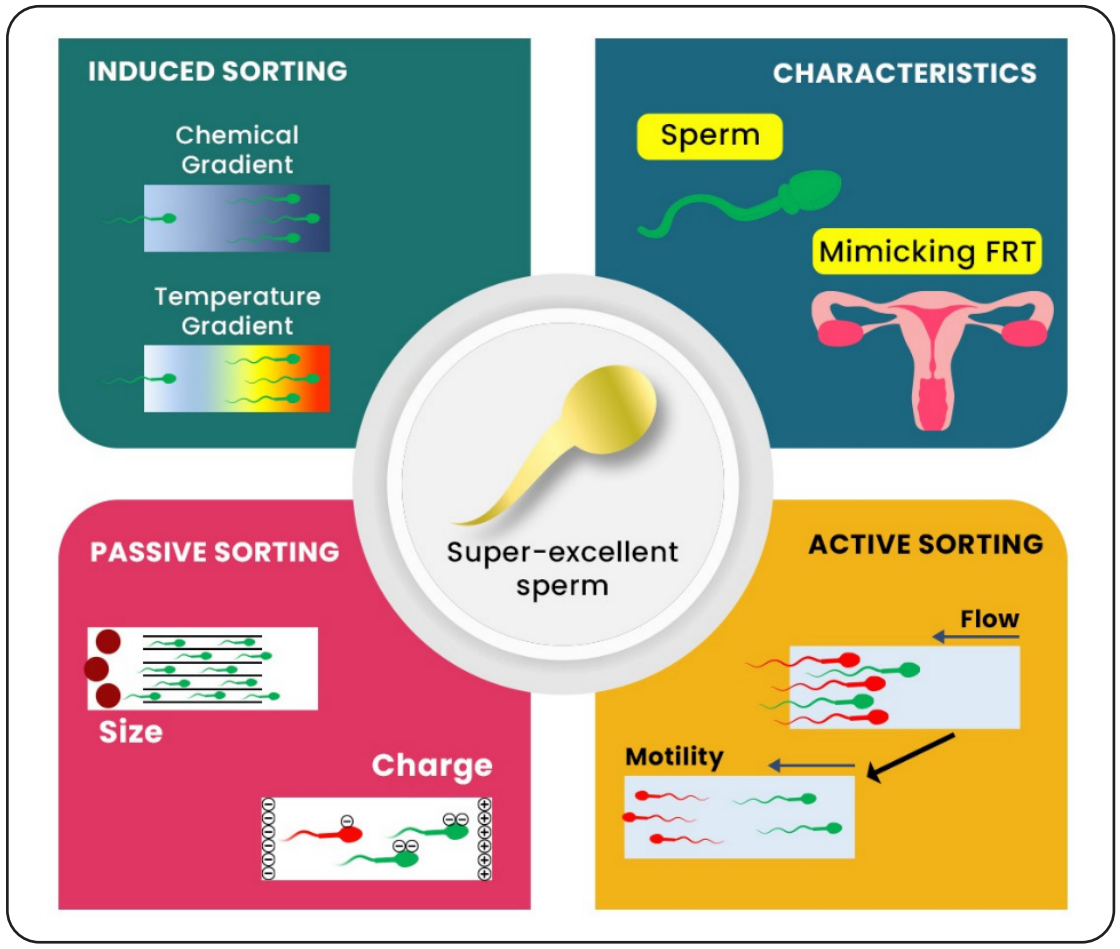

Fig 3: Sorting principles of Microfluidics

PICSI (physiological ICSI) Allows the selection of sperms based on their physiological binding potential to hyaluronic acid. Such sperms exhibit reduced DNA fragmentation, autosomal disomy and diploidy. Use of Sperm slower media containing semi-viscous hyaluron for sperm selection in PICSI is one step immobilisation method without the use of PVP to slow the movements of sperms for selecting the sperms with better DNA integrity for ICSI.

Intracytoplasmic morphologically selected sperm injection (IMSI) is an advanced technique where sperms are selected using high magnification (6000× or more) to get the healthiest sperm with best morphology. Techniques like magnetic-activated cell sorting (MACS), which eliminate apoptotic sperms with deteriorated membranes, have some role in reducing Reactive oxygen species[ROS]-induced impairment and thereby improving pregnancy rates. Use of both DGC and MACS concurrently have shown good results in some studies. **Sperm Hyaluronic acid binding assay**[10] assesses proportion of mature sperms and fertilisation potential of sperms by measuring the ability of sperms to bind to hyaluronic acid present in cumulus oophorous matrix.

Hypo-osmotic swelling test (HOST)[11] assesses the functional integrity of plasma membrane of sperm manifested by coiling of tails of sperm in response to hypo-osmotic conditions. **Laser assisted immobile sperm selection(LAISS)**[12] technique uses laser to assess the viability of immotile sperms (even in cases of complete asthenozoospermia) manifested by curling of sperm tail after exposure to laser. **Zeta potential works on the** Principle of electric charge potential difference between negatively charged sperms and surrounding media.

Role of AI and MI [machine learning] in sperm selection:

AI could effectively give a solution to subjective error and efficiency challenge in sperm selection. Uniqueness of AI in picture analysis recognizes patterns that human eye may not.Two most commonly used algorithms are Deep neural network and support vector machines (SVMs) structures13. It selects sperms based on head morphology alone or in combination with other parameters. It can identify sperms as normal sperms or sperms under stress; classifying them into different morphological categories and predicting embryological and pregnancy outcomes.

Genetic tests in male infertility:

Genetic factors may be responsible in upto 15% cases of male infertility. Three genetic tests are commonly performed and recommended by major urological associations: karyotype analysis (KA), Y-chromosome microdeletion testing (YCMD) and CFTR gene mutation testing.[14]

Table1. Guidelines for genetic testing in male infertility

Genetic tests	Societies	
	AUA/ASRM (2024)	**EAU(2023)**
Karyotyping	NOA or sperm conc ? 5 million/ mL	Sperm conc <10 million/ mL
YCMD	NOA or sperm conc ≤1 million sperm/mL	Sperm conc <5 million/ mL
CFTR	CBAVD and idiopathic OA	CBAVD or CUAVD without renal

AUA- American Urological Association, ASRM-American Society for Reproductive Medicine, EAU-European Association of Urology.

NOA-Non Obstructive Azoospermia, OA-Obstructive Azoospermia, CBAVD/CUAVD-Congenital bilateral/unilateral absence of Vas Deferens

Fertility preservation in male infertility:

For the males at risk of infertility owing to chemotherapy and radiotherapy, fertility preservation options include cryopreservation of sperms for post-pubertal males and testicular tissue cryopreservation for boys in pre-pubertal ages. To produce fertilization competent sperms from testicular tissues, next generation technologies are being developed.

Artificial sperms: In the cases where sperms or testicular tissues are not available, In-vitro gametogenesis i.e. production of sperms by pleuripotent cells derived from somatic cells like skin or blood is a ray of hope.

Novel experimental approach: when obtaining sperms is not at possible as after chemotherapy, testicular tissues retrieved by testicular biopsy can be enzymatically digested to produce spermatogonial stem cells to be reimplanted into the testes hoping to obtain sperms with fertilisation potential.

For a more comprehensive understanding of this topic and to further elucidate the concepts, readers are encouraged to explore the cited references and additional literature.

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Surgical Management of Male Infertility

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Introduction

Surgical management of specific causes of male infertility improves chances for natural fertility or to enable better outcomes with assisted reproductive technologies (ART). The scope of surgical management primarily addresses techniques for oligospermia and azoospermia. This chapter focuses on the contemporary surgical approaches for varicocele repair (VR), reconstructive microsurgery for obstructive azoospermia (including vasovasostomy and vasoepididymostomy), transurethral resection of the ejaculatory ducts for ejaculatory duct obstruction (TURED), and advanced sperm retrieval techniques, particularly microdissection testicular sperm extraction (mdTESE), for men with non-obstructive azoospermia, including indications, gist of surgical techniques and perioperative care.

Varicocele and Oligospermia: Relevance

Varicocele, an abnormal dilatation of the pampiniform plexus, is the most common surgically correctable cause of male infertility, found in approximately 40% of men with primary infertility and up to 80% in secondary infertility, as opposed to 15-20% in general population.[1] VR aims to improve spermatogenesis and reduce sperm DNA fragmentation (SDF), by correcting all or some of the factors such as testicular thermoregulation, oxidative stress, and hormonal imbalances.[2]

Indications:

The decision for varicocele repair in infertile men with oligospermia is guided by specific criteria[3,4]

1. A clinically palpable varicocele (Grade II or III)
2. Documented male infertility with at least one abnormal semen parameter.
3. A female partner with normal or correctable fertility.
4. Elevated SDF, especially with recurrent ART failure or otherwise unexplained male infertility.[2] Subclinical varicoceles (diagnosed only by ultrasound) and scrotal content pain with normozoospermia and infertility are generally not subjected to VR.[3]

Surgical Techniques for Varicocele Repair (VR)

Though there are multiple approaches for VR (retroperitoneal, inguinal, laparoscopic, embolization), **microsurgical subinguinal or inguinal VR** is the standard of care technique,[5,6] due to its superior ability to preserve testicular arteries and lymphatics, resulting in higher success rates (>90%) and lower rates of complications (<1% injury to testicular artery or hydrocele formation) and recurrence (<5%).[6] Laparoscopic repair has higher recurrence (up to 15%) and risks of intra-abdominal injury, while embolization has recurrence rates of 10-15% and specific complications like coil migration[6] and are not standard of care in the management of male infertility.

The use of an operating microscope is strongly recommended and surgeon experience significantly influences outcomes.[4,6] A small (2-4 cm) subinguinal (below the external inguinal ring) or inguinal incision. The spermatic cord is identified and delivered and under an operating microscope (10-12X magnification), the testicular artery (or arteries – often multiple) is meticulously identified, often aided by a micro-Doppler (20 MHz) probe aided by topical papaverine to induce vasodilation. Vas deferens is identified and preserved. Lymphatic channels are preserved to prevent postoperative hydrocele. All internal spermatic veins are ligated with non-absorbable sutures. External spermatic (cremasteric) veins running parallel to the cord and any gubernacular veins (by delivering the testis are ligated especially in a recurrent varicocele.

Perioperative Considerations

Pre-operative sperm cryopreservation is considered especially in severe oligospermia (<5 million/mL). Post VR, semen analysis is done at 3-6 months and later if the concentration is extremely low to start with. Chances of spontaneous conception improve by 30-60% post VR in select couples.[7] VR may also reduce SDF levels, possibly improving ART outcomes, embryo quality and live birth rates, more so in previous ART failure.[2]

Surgical Management for Obstructive Azoospermia

Obstructive azoospermia (OA) results from a blockage in the male reproductive tract accounting for up to 15-25% of azoospermic men.[8] Spermatogenesis is usually normal in OA. The Diagnosis often relies upon normal testicular volume (>15 cc) and hormone reports (FSH, LH, testosterone), with low volume semen and acidic pH based on level of obstruction.

Vasal Obstruction: Vasovasostomy (VVA)

VVA is the surgical reversal of vasectomy or repair of other vasal obstructions (e.g., post-herniorrhaphy injury). Desire for biological paternity in men with confirmed vasal obstruction and evidence of ongoing spermatogenesis are best suited for VVA, Microsurgical VVA is the procedure of choice done at 15-20X magnification). Based on the site of previous vasectomy often guided by a sperm granuloma, vas deferens is exposed via a scrotal incision. After excising the obstructed segment, fluid from the testicular end is examined microscopically for presence of motile or even immotile sperms. Scanty sperm, sperm heads or absent sperms may indicate a concurrent epididymal obstruction, potentially requiring Vasoepididymal anastomosis (VEA). After confirming patency of the abdominal end, microsurgical tension-free, multi-layer anastomosis is performed by modified two-layer technique (using 9-0 or 10-0 non-absorbable sutures for the mucosa, and 8-0 or 9-0 for the muscularis/adventitia with careful and precise mucosal alignment.

Patency rates depend upon time interval after vasectomy (better if duration is less than 10 years) and surgeon experience.[9,10] Pregnancy rates range from 30-70%, clearly depending not only on male but also on female partner age and fertility potential.[10] Intraoperative sperm cryopreservation from the fluid or by a testicular sperm aspiration is usually performed.

Epididymal obstruction: Vasoepididymostomy (VEA)

VEA is performed when the obstruction is within the epididymis or when VVA is not possible due to absence of sperm in the vasal fluid. The primary indication for VEA is an epididymal obstruction (congenital, post-infectious, post-traumatic) or block at the VE junction. As one of toughest of urological microsurgeries, an operating microscope is used to anastomose the vas deferens lumen (0.3-0.4 mm) to a single epididymal tubule (0.1-0.2 mm). After exposure, epididymis is inspected, a dilated epididymal tubule proximal to the obstruction is selected and incised. This fluid is checked for motile sperm and frozen if available. Longitudinal intussusception vasoepididymostomy (LIVE) using 10-0 or 11-0 nylon sutures aims to create a patent anastomosis by drawing the epididymal tubule opening into the vasal lumen.[11] Patency rates can range up to 80%, with pregnancy rates of 20-49% based on multiple factors (11, 12). Sperms may take 3-12 months or longer to appear in the ejaculate.[9]

Ejaculatory duct obstruction: Transurethral Resection of Ejaculatory Ducts (TURED)

EDO causes 1-5% of male infertility, presenting with low volume azoospermia/severe oligospermia, acidic pH, and absent fructose. Transrectal ultrasound (TRUS) shows dilated seminal vesicles (>1.5 cm AP diameter) or midline prostatic cysts (3, 13). The area of the verumontanum is identified by using a cystoscope or resectoscope, guided by TRUS guidance and contrast/ methylene blue injection into seminal vesicles, until free gush of cloudy or milky seminal fluid . The improvement in semen parameters can range up to 50-70% in carefully select patients.[13,14] However the overall chances of spontaneous conception range between 25 and 40%.[14] Important complications include urinary tract infection, retrograde ejaculation, hematuria, epididymitis, and re-obstruction.

Non obstructive azoospermia: Single-Stage Surgical Sperm Retrieval for Non-Obstructive Azoospermia

NOA, due to impaired sperm production, is the leading (>80%) cause for azoospermia (8). The management is centred around a well conducted single stage surgical sperm retrieval (SSSSR) and IVF-ICSI. Microdissection testicular sperm extraction (mdTESE) is the gold standard and most sophisticated of all sperm retrieval procedures aimed at identifying the focal areas of spermatogenesis especially in testicular failure.[15,16]

Perioperative Considerations

Endocrine profile (FSH, LH, total testosterone, inhibin B), and genetic testing (karyotype, Y-chromosome microdeletions) are most important in finalising the treatment plan.[4,17] AZFa or AZFb

microdeletions usually preclude sperm retrieval; AZFc microdeletions are associated with ~50-70% success rates in some studies (4). In depth counseling about the basic pathophysiology of NOA, understanding realistic success with the procedure, genetic implications, failure rates and alternative options like donor sperm is usually performed.

Surgical Sperm Retrieval Techniques for NOA

The patient is taken up for the procedure with availability for freezing precious retrieved sperms. A midline scrotal (or bilateral) incision is made and tunica albuginea is incised transversely in an avascular area, under an operating microscope (25X) to focus and assess the seminiferous tubules. The basic tenets of a good seminiferous tubule would be that it is dilated, opaque and are selectively excised with micro-scissors. Samples are usually processed real time by the embryologist who minces the tissue and searches for sperm to understand adequacy of tissue and for the couple to u. This real-time feedback guides the Andrologist to continue exploring different areas or contralateral testis if needed. The search can be extensive. The tunica albuginea is closed with fine absorbable sutures. SSSSR combines the methods of percutaneous epididymal sperm aspiration (PESA), testicular sperm aspiration (TESA) and conventional TESE (cTESE) before proceeding for SSR outcomes. The success rates are variable across individuals and variable at different time periods in a man's life, roughly in the range of 40-60%, based on the underlying cause (hypospermatogenesis > maturation arrest > Sertoli cell-only, though focal spermatogenesis can be found in the latter) (15, 18). A testicular mapping approach is done after exposing the testes as in for a TESE procedure. The embryologist This mdTESE tissue is typically minced in buffered media, and sperms are identified based on morphology and, if present, minimal motility (4.18). Conventional TESE (cTESE) / Random Biopsy is trying aspiration of seminiferous tubules using a fine needle at multiple sites in the tests. Conventional TESE can be done without operating microscope assistance and often may have lesser SRRs (20-30%) and higher risk of testicular damage.[18] This operation is not performed in centres where mdTESE is available.

Perioperative Considerations

The success of course depends upon the boy, surgeon's microsurgical skill, and embryologist expertise.[19] Preoperative optimisation with clomiphene citrate or hCG) for hypogonadal men is done whenever the couple have known the adequate details.[4,17] Postoperatively, scrotal support, ice, and analgesia are standard. Testosterone levels may transiently drop; monitoring and replacement may be needed if symptomatic hypogonadism develops, though this is less common with mdTESE.[15] If sperms are retrieved, they are used for ICSI and cryopreserved. Repeat mdTESE can be challenging and futile.

Conclusion

Surgical interventions for male infertility are highly specialized with requirement for microsurgical skills. Microsurgical varicocele repair (VR) for clinically significant varicoceles with OATS, provides improvements in semen quality and fertility potential. For obstructive azoospermia, microsurgical reconstruction like VVA/ VEA can restore ductal patency, while TURED effectively addresses ejaculatory duct obstruction. SSSSR with mdTESE could be the ideal option for NOA, guided by meticulous microsurgical principles and real-time embryologist processing the seminiferous tubules for sperms. Detailed preoperative diagnostic workup including genetics, careful patient selection, counselling about options and success rates, advanced microsurgical skill are mandatory.

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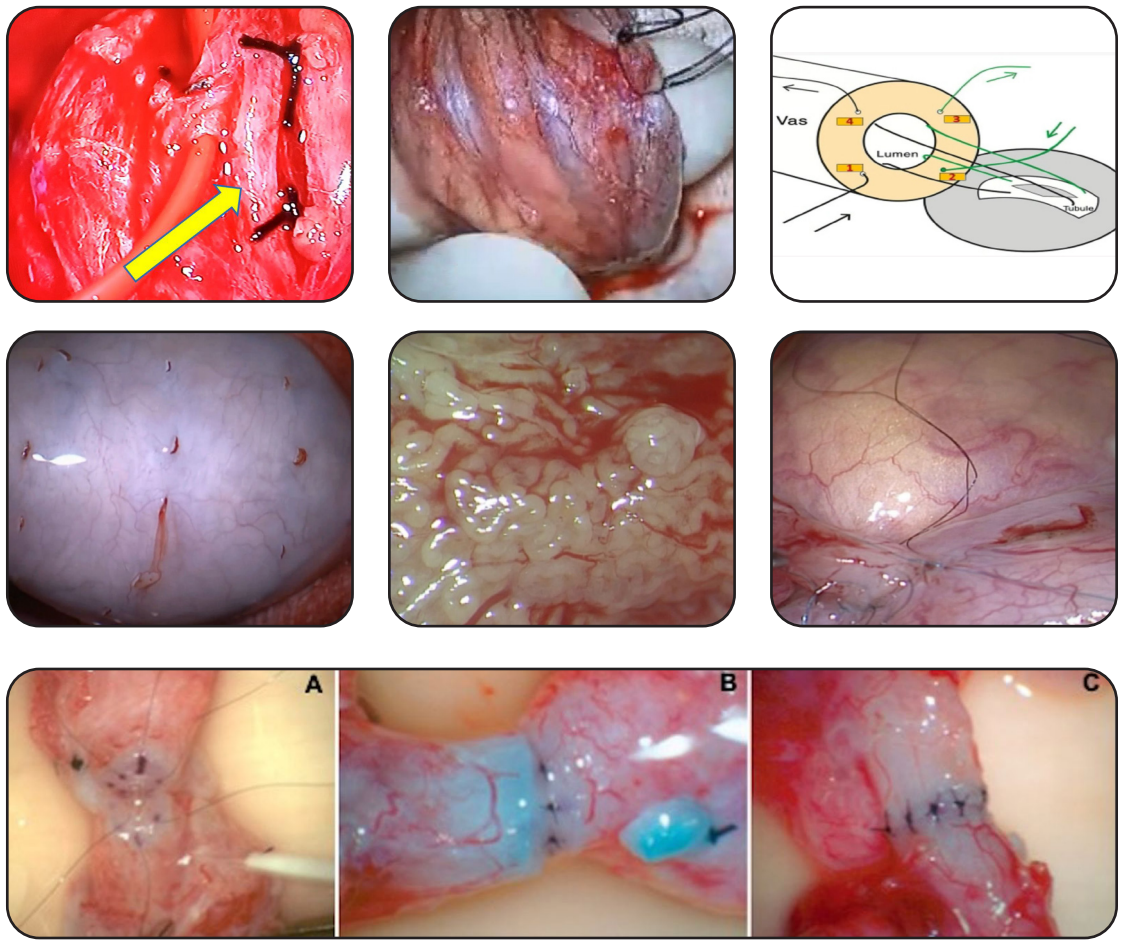

Calender of Events

All IFS Activities 2024-26

Over 460 Programs/CMEs/Meetings Conducted

Activity Date	Activity Day	Chapter/SIG / Zone / Joint/ Other	Activity Name	Mode	Time
01.04.2024	Monday	Chapter	IFS Maharashtra - Chaptet Activity	Online Webinar	7.00 pm - 9.00 pm
01.04.2024	Monday	Chapter	IFS Pondicherry - Chapter Activity (PG Training Prog)	Physical	1.00 pm - 4.00 pm
02.04.2024	Tuesday	Chapter	MP - Chaptet Activity (Aarambh)	Physical	4.00 am - 5.30 pm
05.04.2024	Friday	Chapter Installation	UP East - Chapter Installation Ceremonay (Dr Pankaj Sir)	Physical	3.00 pm - 5.30 pm
06.04.2024	Saturday	Chapter	Tamil Nadu - Chapter Activity (Annual Conference) Day 1 (Dr Pankaj Sir)	Physical	2.00 pm onwards
07.04.2024	Sunday	Chapter Installation	Tamil Nadu - Chapter Installation Ceremony (Annual Conference) Day 2	Physical	9.00 am - 4.00 pm
07.04.2024	Sunday	Chapter	IFS Odisha - Chapter Activity (Workshop)	Physical	9.45 am - 4.30 pm
07.04.2024	Sunday	Chapter	IFS Karnataka - Chapter Activity	Physical	9.00 am - 1.15 pm
10.04.2024	Wednesday	Chapter	IFS MP - Chaptet Activity (Master Classes)	Online Webinar	6.00 pm - 7.00 pm
10.04.2024	Wednesday	Chapter	IFS Odisha - Chapter Activity	Physical	7.00 pm onwards
17.04.2024	Wednesday	Chapter	IFS MP - Chaptet Activity (Master Classes)	Online Webinar	6.00 pm - 7.00 pm
18.04.2025	Thursday	Central - iEP	AI Naturally - AI in ART (Aarambh)	Online Webinar	6.00 pm - 7.30 pm
19.04.2026	Friday	Central - YEP	IFS - Young Turks Journal Club - Activity (Aarambh)	Online Webinar	7.00 pm - 7.30 pm
19.04.2026	Friday	Central - Quiz	IFS Quiz - Genius Junction Monthly Quiz (Aarambh)	Online Webinar	7.30 pm - 8.00 pm
20.04.2024	Saturday	2 SIG + Chapter	SIG: Counselling & Holistic Medicine IFS MP - Chapter Activity (Sahyog)	Online Webinar	5.00 pm - 7.00 pm
20.04.2024	Saturday	Central	IFS Delhi - Installation Ceremony (Dr Pankaj Sir & Dr Shweta Ma'am)	Physical	7.30 pm onwards
23.04.2024	Tuesday	2 Chapters	IFS Pondicherry & South Tamilnadu - Chapter Activity	Online Webinar	5.00 pm - 7.00 pm
26.04.2024	Friday	Chapter Installation	IFS Haryana - Installation Ceremony (Dr Pankaj Sir & Dr Shweta Ma'am)	Physical	2.30 pm - 5.30 pm
27.04.2024	Saturday	Chapter	IFS Pondicherry - Chapter Activity (PG Training Prog)	Physical	2.00 pm - 5.00 pm
01.05.2024	Wednesday	Chapter	IFS MP - Chaptet Activity (Polaris)	Online Webinar	5.00 pm - 7.00 pm
01.05.2024	Wednesday	SIG	SIG : Early Pregnency (Pikee Saxena)	Online Webinar	4.00 pm - 6.00 pm
02.05.2024	Thursday	Chapter	IFS Haryana - Chapter Activity	Online Webinar	4.00 pm - 6.00 pm
04.05.2024	Saturday	Chapter	IFS Odisha - Chapter Activity	Physical	9.00 am onwards
04.05.2024	Saturday	Chapter Installation	IFS Chhattisgarh - Installation Ceremony (Dr Pankaj Sir & Dr Shweta Ma'am)	Physical	2.00 pm - 5.00 pm
05.05.2024	Sunday	Chapter Installation	IFS Bihar - Installation Ceremony (Dr Pankaj Sir & Dr Shweta Ma'am)	Physical	1.30 pm onwards
08.05.2024	Wednesday	Chapter	IFS MP - Chaptet Activity (Master Classes)	Online Webinar	5.00 pm - 7.00 pm
08.05.2024	Wednesday	Central	Banking Chit Chat Meeting (Quaterly)	Online Webinar	4.00 pm - 5.00 pm
10.05.2024	Friday	Central - YEP	IFS - Young Turks Journal Club - Activity	Online Webinar	7.00 pm - 7.30 pm
12.05.2024	Sunday	Chapter Installation	IFS Gujrat - Installation Ceremony (Dr Pankaj Sir & Dr Shweta Ma'am)	Physical	8.00 am - 5.00 pm
13.05.2024	Sunday	Chapter	IFS Pondicherry - Chapter Activity	Online Webinar	5.00 pm - 7.00 pm
16.05.2024	Thursday	SIG	SIG : KPI (Dr Gaurav Majumdar)	Online Webinar	7.00 pm - 8.00 pm

Activity Date	Activity Day	Chapter/SIG / Zone / Joint/ Other	Activity Name	Mode	Time
16.05.2024	Thursday	Central - NEP	Nursing - Empowerment Program (Nightangle -Aarambh)	Online Webinar	7.00 pm - 8.00 pm
17.05.2024	Friday	Central - EBM	Monthly Meet - EBM	Physical	5.00 pm - 7.00 pm
19.05.2024	Sunday	SIG	SIG - Endoscopy (Kota)	Physical	6.00 pm - 8.00 pm
19.05.2024	Sunday	Central	CME on Fertility Preservation & Cancer Patients	Physical	10.00 am - 01.00 pm
22.05.2024	Wednesday	Central	BOD Meeting	Physical	6.30 pm - 08.00 pm
24.05.2024	Friday	Central - YEP	IFS - Young Turks Journal Club - Activity	Online Webinar	7.00 pm - 7.30 pm
24.05.2025	Friday	Central - Quiz	IFS Quiz - Genius Junction Monthly Quiz	Online Webinar	7.30 pm - 8.00 pm
26.05.2024	Sunday	Chapter Installation	IFS Jharkhand - Installation Ceremony (Dr Pankaj Sir & Dr Shweta Ma'am)	Physical	1.00 pm - 5.00 pm
26.05.2024	Sunday	Chapter	IFS Kashmir - 1st IUI workshop Activity	Physical	3.00 pm - 5.00 pm
26.05.2025	Sunday	2 SIG	SIG - Endoscopy & Ultrasound	Physical	10.30 am - 2.00 pm
28.05.2024	Tuesday	Central - CEP	Counsellor Empowerment Program (Aarambh)	Online Webinar	6.00 pm - 7.00 pm
28.05.2024	Tuesday	Chapter Installation	IFS Kashmir - Installation Ceremony (Dr Pankaj Sir & Dr Shweta Ma'am)	Physical	5.30 pm - 8.30 pm
29.05.2025	Wednesday	3 Chapters	IFS MP, Bihar & Karnakata - Chapter Activity (Bharat Sangam)	Online Webinar	5.00 pm - 7.00 pm
29.05.2025	Wednesday	Chapter	IFS Maharashtra - Chaptet Activity	Online Webinar	5.00 pm - 7.00 pm
30.05.2024	Thursday	Central - iEP	AI Naturally - AI in ART	Online Webinar	6.00 pm - 7.30 pm
30.05.2024	Thursday	Pharma CME - Delhi	Nationa Series of Physical CME - Celeganix Pharma (Dr Pankaj Sir)	Physical	12.30 - 03.30 pm
01.06.2025	Thursday	Chapter	IFS UP East - Chapter Activity	Physical	2.00 pm - 5.00 pm
02.06.2024	Sunday	Chapter Installation	IFS Vidarbha - Installation Ceremony (Dr Pankaj Sir & Dr Shweta Ma'am)	Physical	9.00 am - 2.00 pm
05.06.2024	Wednesday	Chapter	IFS MP - Chaptet Activity (Polaris)	Online Webinar	5.00 pm - 7.00 pm
07.06.2024	Friday	Pharma CME - Odisha	IFS Odisha chapter with Nationa Series of Physical CME - Celeganix Pharma	Physical	
09.06.2024	Sunday	Chapter	IFS UP East Chapter - Quiz	Online Webinar	5.00 pm - 6.00 pm
09.06.2024	Sunday	Chapter Installation	IFS Rajasthan - Installation Ceremony (Dr Pankaj Sir & Dr Shweta Ma'am)	Physical	Evening
11.06.2024	Tuesday	Chapter	IFS Rajasthan chapter - Activity (Symposium)	Physical	7.30 pm - 10.00 pm
13.06.2024	Thursday	SIG + Chapter	SIG: Endoscopy with IFS Chandigarh Chapter	Online Webinar	
13.06.2024	Thursday	Pharma CME - Punjab	SIG: Andrology Workshop with Punjab Chapter - Sar Pharma	Physical	
14.06.2024	Friday	Central - VOH	Voice of Healthcare at Hyatt Residency	Physical	
14.06.2024	Friday	Central - YEP	IFS - Young Turks Journal Club - Activity	Online Webinar	5.00 pm - 6.00 pm
15.06.2024	Saturday	2 SIG + Chapter	SIG: Counselling & Holistic Medicine IFS MP - Chapter Activity (Sahyog)	Online Webinar	5.00 pm - 7.00 pm
16.06.2024	Sunday	Chapter Installation	IFS West Bengal - Installation Ceremony (Dr Pankaj Sir & Dr Leena Wadhwa)	Physical	2.00 - 5.00 pm
20.06.2024	Thursday	SIG + Chapter	SIG : PCOS with Haryana Chapter Activity	Online Webinar	4.00 pm - 7.00 pm
20.06.2024	Thursday	SIG + Chapter	SIG: Reproductive Endocrinology with TN Chapter Activity	Online Webinar	5.00 pm - 7.00 pm
20.06.2025	Thursday	Chapter	IFS MP - Chaptet Activity (Master Classes)	Online Webinar	6.00pm - 7.00pm
21.06.2025	Friday	Central - CEP	Counsellor Empowerment Program	Online Webinar	4.00 pm - 5.00 pm

Activity Date	Activity Day	Chapter/SIG / Zone / Joint/ Other	Activity Name	Mode	Time
21.06.2025	Friday	Central - EBM	Monthly Meet - Executive Body Meet (EBM)	Physical	5.00 pm - 6.00 pm
21.06.2026	Friday	Central - SEP	Self Empowerment Program	Online Webinar	6.30 pm - 07.30 pm
23.06.2024	Sunday	Chapter Installation	IFS Andhra Pradesh - Installation Ceremony (Dr Pankaj Sir & Dr Kuldeep Jain Sir)	Physical	10.00 am - 02.00 pm
26.06.2024	Wednesday	Chapter	IFS Kashmir - 2nd IUI Workshop	Physical	4.00 pm - 7.00 pm
27.06.2024	Thursday	SIG + Chapter	SIG: Embryology with Chhattisgarh Chapter Activity	Online Webinar	6.00pm - 8.00pm
28.06.2024	Friday	SIG + Chapter	SIG: Endoscopy with Uttrakhand chapter	Online Webinar	4:00pm-5:30pm
28.06.2025	Friday	3 Chapters	IFS MP, West Bengal & Gujrat - Chapter Activity (Bharat Sangam)	Online Webinar	5.00 pm - 7.00 pm
28.06.2024	Friday	Central - YEP	IFS - Young Turks Journal Club - Activity	Online Webinar	7.00 pm - 7.30 pm
28.06.2025	Friday	Central - Quiz	IFS Quiz - Genius Junction Monthly Quiz	Online Webinar	7.30 pm - 8.00 pm
29.06.2025	Saturday	Central - NEP	Nursing - Empowerment Program (Nightangle)	Online Webinar	7.00 pm - 8.00 pm
30.06.2026	Sunday	Chapter	IFS UP East - Chapter Activity	Physical	2.00pm - 3.00pm
30.06.2024	Sunday	Chapter	IFS Vidarbha chapter - Workshop Activity	Physical	9.00 am - 2.00 pm
30.06.2024	Sunday	SIG	SIG: Endrometrosis	Physical	6:30pm-9:30pm
30.06.2025	Sunday	Pharma CME - Patna	IFS Patna chapter with Nationa Series of Physical CME - Samarth Pharma	Physical	11.00 am - 2.00 pm
30.06.2024	Sunday	Chapter Installation	IFS Pondicherry - Installation Ceremony (Dr Pankaj Sir & Dr Shweta Ma'am)	Physical	9.00 am - 4.00 pm
30.06.2024	Sunday	Chapter	IFS MP Chapter 60 Endometriosis awareness activities (April - Nov)	Physical + Online Webinar	Half Day
02.07.2024	Tuesday	Central - iEP	AI Naturally - AI in ART	Online Webinar	6.00 pm - 7.30 pm
03.07.2024	Wednesday	Ma'am Birthday	Happy Birthday Secretary General Ma'am		
03.07.2024	Wednesday	SIG	SIG: Reproductive Endocrinology	Online Webinar	6:30pm-8:00pm
04.07.2025	Thursday	SIG + Chapter	SIG: Fertility Peservation with Chandigarh Chapter	Online Webinar	4.00 - 6.00 pm
05.07.2024	Friday	SIG	SIG: Endoscopy	Physical	2.00pm - 3.00pm
05.07.2024	Friday	SIG	SIG: Reaserch Methodology	Online Webinar	5.30 pm - 8.30 pm
06.07.2024	Saturday	Pharma CME - Jaipur	IFS Rajasthan chapter with Nationa Series of Physical CME - Celeganix Pharma	Physical	2.00pm - 3.00pm
09.07.2024	Tuesday	2 Chapters	IFS Andhra Pradesh & Tamil Nadu - Chapter Activity	Online Webinar	5.00 pm - 7.00 pm
10.07.2024	Wednesday	Chapter	IFS MP - Chaptet Activity Masterclasses (Suraksha)	Online Webinar	5.00 pm - 7.00 pm
11.07.2025	Thursday	Pharma CME - South TN	SIG: Andrology Workshop with South Tamilnadu Chapter - Sar Pharma	Physical	2.00pm - 3.00pm
12.07.2027	Friday	Central - YEP	IFS - Young Turks Journal Club - Activity	Online Webinar	7.00 pm - 8.00 pm
13.07.2024	Saturday	SIG	SIG: Early Pregnancy at Lady Harding	Physical	9.30 am - 2.0 pm
14.07.2025	Sunday	SIG + Chapter	SIG: Early Pregnancy with Jammu Chapter	Online Webinar	4.00 pm - 6.00 pm
14.07.2026	Sunday	Pharma CME - Ranchi	IFS Jharkhand chapter with Nationa Series of Physical CME - Celeganix Pharma	Physical	1.30 pm - 4.30 pm
16.07.2024	Tuesday	Central - CEP	Counsellor Empowerment Program	Online Webinar	4.00 pm - 6.00 pm
17.07.2025	Wednesday	SIG	SIG: Endoscopy Activity	Physical	4.00 pm - 5.00 pm
18.07.2024	Thursday	SIG + 2 Chapters	SIG: POR with Chhattisgarh & Bihar Chapter	Online Webinar	4.00 pm - 7.00 pm

Activity Date	Activity Day	Chapter/SIG / Zone / Joint/ Other	Activity Name	Mode	Time
18.07.2025	Thursday	SIG + Chapter	SIG: Endoscopy with MP Chapter (Sudeeksha 2.0)	Physical	10.00 am - 02.00 pm
19.07.2024	Friday	Chapter	IFS MP - Chapter Activity (Bharat Sangam)	Online Webinar	5.00 pm - 8.00 pm
19.07.2024	Friday	Central - EBM	Monthly Meet - Executive Body Meet (EBM)	Physical	5.00 pm - 7.00 pm
21.07.2024	Sunday	Chapter Installation	IFS Chandigarh - Installation Ceremony & One day Conference	Physical	10.00 am - 3.00 pm
22.07.2024	Monday	Central - SEP	Self Empowerment Program	Online Webinar	6.00 pm - 7.00 pm
24.07.2024	Wednesday	SIG + 4 Chapters	SIG: Ultrasound with Chandigarh, Jammu, Karnataka, Pondicheery Chapter	Online Webinar	4.00 pm - 6.00 pm
24.07.2024	Wednesday	Chapter	IFS MP - Chapter Activity (Masterclasses)	Online Webinar	6.00 pm - 7.00 pm
24.07.2024	Wednesday	Chapter	IFS Haryana - Chapter Activity with Palwal obs Gyn Society	Physical	11.00 am - 3.00 pm
24.07.2024	Wednesday	Chapter	IFS South Tamilnadu Chapter	Online Webinar	6.00 pm - 7.00 pm
25.07.2024	Thursday	SIG + Chapter	SIG: Endoscopy with MP Chapter (Sudeeksha 2.0) Workshop	Physical	4.00 pm - 6.00 pm
25.07.2024	Thursday	Central - PEP Launch	Launching of PEP in 6 states & Celebrating World IVF Day at Secretariat	Physical	12.00 pm - 2.00 pm
25.07.2025	Thursday	SIG	SIG: Applied Genetics	Online Webinar	3.00 pm - 5.00 pm
25.07.2024	Thursday	Chapter	IFS Chhattisgarh Chapter Activity	Online Webinar	4:00pm-5:30pm
26.07.2024	Friday	Central - YEP	IFS - Young Turks Journal Club - Activity	Online Webinar	7.00 pm - 8.00 pm
27.07.2024	Saturday	Pharma CME - Jodhpur	IFS Rajasthan chapter with Nationa Series of Physical CME - Celeganix Pharma	Physical	11.00 pm - 2.00 pm
28.07.2024	Sunday	SIG	SIG: Applied Genetics	Online Webinar	4:00pm-5:30pm
28.07.2024	Sunday	Pharma CME - Lucknow	IFS UP East chapter with Nationa Series of Physical CME - Celeganix Pharma (Dr Pankaj Sir)	Physical	12.00 pm - 3.00 pm
29.07.2024	Monday	3 Chapters	IFS MP, Uttrakhand & Telangana- Chapter Activity (Bharat Sangam)	Online Webinar	5.00 pm - 7.00 pm
30.07.2024	Tuesday	Central - NEP	Nursing Empowerment Program (Nightangle)	Online Webinar	5.00 pm - 6.00 pm
31.07.2024	Wednesday	SIG	SIG: Counselling	Online Webinar	5.00 pm - 6.00 pm
31.07.2024	Wednesday	Chapter	IFS MP Chapter 60 Fibroid awareness activities (June & July)	Physical	Half Day
01.08.2024	Thursday	SIG + Chapter	SIG: PCOS with UP East Chapter	Online Webinar	4.00 pm - 7.00 pm
02.08.2024	Friday	SIG	SIG: Counselling & Patient Support with ASRM Academy	Online Webinar	6.00 pm - 7.00 pm
02.08.2024	Friday	SIG + Chapter	SIG: Early Pregnancy & With Chandigarh Chapter	Online Webinar	6.00 pm - 7.00 pm
04.08.2024	Sunday	Pharma CME - Sun	IFS UP East chapter (Varanasi) with Nationa Series of Physical CME - Sun Pharma	Physical	6.00 pm - 9.00 pm
05.08.2024	Monday	2 SIG + Chapter	SIG: Endometrosis & Endoscopy with North East Chapter	Online Webinar	4.00 pm - 5.30 pm
06.08.2024	Tuesday	SIG	SIG: Reaserch Methodology	Online Webinar	5.30 pm - 8.30 pm
07.08.2025	Wednesday	Chapter	IFS MP - Chapter Activity (Polaris)	Online Webinar	5.00 pm - 7.00 pm
07.08.2025	Wednesday	SIG + Chapter	SIG: KIP with Vidarbha Chapter	Online Webinar	6.30 pm - 8.30 pm
08.08.2024	Thursday	SIG + Chapter	SIG: Embryology with Tamilnadu chapter	Online Webinar	5.30 pm - 7.30 pm
08.08.2024	Thursday	2 SIG	SIG: Environment & Infertility with Holistic Medicine	Online Webinar	6.00 pm - 8.00 pm
09.08.2024	Friday	Pharma CME - Gurugram	IFS Haryana chapter with Nationa Series of Physical CME - InterMedics	Physical	11.00 pm - 2.00 pm
09.08.2024	Friday	Central - YEP	IFS - Young Turks Journal Club - Activity	Online Webinar	7.00 pm - 8.00 pm

Activity Date	Activity Day	Chapter/SIG / Zone / Joint/ Other	Activity Name	Mode	Time
10.08.2024	Saturday	SIG	SIG: Fertility Preservation	Physical	12.00 pm - 3.00 pm
11.08.2024	Sunday	Pharma CME - MP	IFS MP chapter with Nationa Series of Physical CME - Celeganix Pharma	Physical	11.00 am - 02.00 pm
11.08.2024	Sunday	Pharma CME - Sun	IFS Chhattisgarh chapter with Nationa Series of Physical CME - Sun Pharma	Physical	11.00 pm - 2.00 pm
11.08.2024	Sunday	Central - NEP	Nursing - Empowerment Program (Nightangle)	Online Webinar	7.00 pm - 8.00 pm
11.08.2024	Sunday	Chapter Installation	IFS Odisha - Installation Ceremony (Dr Pankaj Sir & Dr Niti Vijay Ma'am)	Physical	10.00 am - 4.00 pm
11.08.2024	Sunday	Chapter	UP East - Chapter Quiz	Online Webinar	11.00 am - 12.00 pm
12.08.2024	Sunday	Chapter	IFS Uttrakhand - Chapter Activity	Online Webinar	4.30 pm - 6.30 pm
12.08.2024	Monday	Central - CEP	IFS - Counsellor Empowerment Program	Online Webinar	6.00 pm - 7.00 pm
13.08.2024	Tuesday	SIG	SIG: Reproductive Endocrinology	Online Webinar	6:30pm-8:00pm
14.08.2025	Wednesday	Chapter	IFS MP - Chapter Activity (Masterclasses)	Online Webinar	6.00 pm - 8.00 pm
14.08.2025	Wednesday	Central - iEP	AI Naturally - AI in ART	Online Webinar	6.00 pm - 7.00 pm
16.08.2024	Friday	SIG + Chapter	SIG: Endoscopy with IFS MP Chapter (Sudeeksha 2.0)	Physical	9.00 am - 1.00 pm
17.08.2024	Saturday	2 SIG + Chapter	SIG: Counselling & Holistic Medicine IFS MP - Chapter Activity (Sahyog)	Online Webinar	5.00 pm - 7.00 pm
18.08.2024	Sunday	Central - EBM	IFS Mid Term Meet + Executive Body Meet (EBM) (India Habitat Centre)	Physical	9.00 am - 5.00 pm
20.08.2024	Tuesday	Central - SEP	IFS - Self Empowerment Program	Online Webinar	5:00 pm-6:00 pm
21.08.2024	Wednesday	Chapter	IFS Odisha - Chapter Activity	Physical	Half Day
22.08.2024	Thursday	Chapter	IFS Pondicherry - Chapter Activity	Online Webinar	6:00pm-8:00pm
23.08.2025	Friday	2 SIG + Chapter	SIG: Ultrasound & Endoscopy with South Tamilnadu Chapter	Online Webinar	6:00pm-8:00pm
23.08.2024	Friday	Chapter Installation	IFS Uttrakhand - Installation Ceremony (Dr Pankaj Sir & Dr Shalini Chawla Khanna Ma'am)	Physical	6:00pm-9:00pm
24.08.2024	Saturday	Chapter	Bihar Chapter - 2nd Annual Conference (Day 1) (Dr Pankaj Sir & Dr Shweta Mittal Ma'am)	Physical	Full Day
25.08.2024	Sunday	Chapter	Bihar Chapter - 2nd Annual Conference (Day 2)	Physical	Full Day
28.08.2024	Wednesday	SIG	SIG: QA & QC in ART	Online Webinar	5.30 pm - 7.30 pm
28.08.2025	Wednesday	SIG	SIG: POR	Online Webinar	6.00 pm - 8.00 pm
28.08.2025	Wednesday	Central - PEP Phase 2	Launching of PEP Phase - 2 in 6 states	Physical	12.00 pm - 2.00 pm
29.08.2024	Thursday	Central Trade Meet	Trade Meeting in Delhi - Hotel Pride Plaza (Dr Pankaj & Dr Shweta Mittal)	Physical	7.00 pm - 10.00 pm
29.08.2024	Thursday	SIG + Chapter	SIG: Genital Tuberculosis with MP Chapter Activity	Online Webinar	7.00 pm - 8.00 pm
30.08.2025	Friday	Chapter Quiz	IFS Haryana - Chapter Quiz Kahoot	Online Webinar	4.00 pm - 5.00 pm
30.08.2025	Friday	Chapter	IFS MP Chapter - Master Classes Activity	Online Webinar	7.00 pm - 8.30 pm
30.08.2025	Friday	Central - YEP	IFS - Young Turks Journal Club - Activity	Online Webinar	7.00 pm - 8.00 pm
30.08.2025	Friday	Central - Quiz	IFS Quiz - Genius Junction Monthly Quiz	Online Webinar	7.30 pm - 8.00 pm
31.08.2024	Saturday	Chapter Quiz	IFS Haryana Chapter Activity	Physical	2.00 pm - 5.00 pm
31.08.2024	Saturday	Chapter Installation	IFS Karnataka - Installation Ceremony (Dr Pankaj Sir & Dr Rashmi Sharma)	Physical	6.00 pm - 9.00 pm

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01.09.2024	Sunday	Chapter Installation	IFS Telangana - Installation Ceremony (Dr Pankaj Sir & Dr Renu Tanwar)	Physical	11.00 am - 2.00 pm
01.09.2024	Sunday	Chapter Quiz	IFS MP - Chapter Quiz on Kahoot	Online Webinar	12.00 pm - 12.45 pm
04.09.2024	Wednesday	2 Chapters	IFS MP & North East - Sukanya Activity (PCOS Aweness)	Online Webinar	
04.09.2024	Wednesday	Chapter	IFS MP - Chapter Activity (Polaris)	Online Webinar	4.00 pm - 7.00 pm
06.09.2024	Friday	SIG + Chapter	SIG: Endoscopy with MP Chapter (Sudeeksha 2.0)	Physical	09.00 am - 01.00 pm
08.09.2024	Sunday	Pharma CME - Sun	IFS UP West chapter with Nationa Series of Physical CME - Sun Pharma	Physical	1.00 pm - 5.00 pm
08.09.2024	Sunday	Central - NEP	IFS - Nursing Empowerment Program (Nightangle)	Online Webinar	7.00 pm - 8.00 pm
08.09.2024	Sunday	Chapter Quiz	IFS Vidarbha - Chapter Quiz on Kahoot		
10.09.2024	Tuesday	Chapter	IFS MP - Sukanya PCOS Awareness Activity	Physical	10.00 am - 12.00 pm
10.09.2024	Tuesday	SIG + Chapter	SIG: Endrometrosis with MP Chapter (Sudeeksha 2.0)	Physical	09.00 am - 01.00 pm
12.09.2024	Thursday	SIG	SIG: Genital Tuberculosis with MP Chapter Activity	Online Webinar	7.00 pm - 8.00 pm
13.09.2024	Friday	Central - YEP	IFS - Young Turks Journal Club - Activity	Online Webinar	7.00 pm - 8.00 pm
13.09.2024	Friday	Fusion	Fusion 2024 at Jaipur (Day 1)	Physical	Full Day
14.09.2024	Saturday	Fusion	Fusion 2024 at Jaipur (Day 2)	Physical	Full Day
15.09.2024	Sunday	Fusion	Fusion 2024 at Jaipur (Day 3)	Physical	Full Day
19.09.2024	Thursday	3 Chapters	IFS MP, Punjab & North East - Chapter Activity (Bharat Sangam)	Online Webinar	6.00 pm - 8.00 pm
19.09.2024	Thursday	Chapter	IFS Haryana Chapter PCOS Awareness Activity	Physical	Half Day
19.09.2024	Thursday	Chapter	IFS Vidarbha - Chapter Activity	Online Webinar	6.00 pm - 9.00 pm
20.09.2024	Friday	Central - EBM	Monthly Meet - Executive Body Meet (EBM)	Physical	5.00 pm - 7.00 pm
21.09.2024	Saturday	Pharma CME - Shivani	IFS Rajasthan chapter with Nationa Series of Physical CME - Shivani Pharma	Physical	6.00 pm - 9.00 pm
22.09.2024	Sunday	Chapter Installation	IFS MP - Installation Ceremony (Dr Pankaj Sir & Dr Shweta Ma'am)	Physical	11.00 am - 2.00 pm
22.09.2025	Sunday	Chapter	IFS West Bengal - IUI Workshop at Kota	Physical	10.00 am - 2.00 pm
23.09.2024	Monday	Chapter	IFS West Bengal - Activity Health Awareness Camp	Physical	3.00 pm - 5.00 pm
24.09.2024	Tuesday	Central - CEP	Counsellor Empowerment Program	Online Webinar	6.30 pm - 7.30 pm
24.09.2024	Tuesday	Central - SEP	Self Empowerment Program	Online Webinar	5.00 pm - 6.00 pm
26.09.2024	Thursday	SIG + Chapter	SIG: PCOS with Chhattisgarh Chapter Activity	Online Webinar	4:00pm-5:30pm
26.09.2024	Thursday	SIG	SIG: Genital Tuberculosis with MP Chapter Activity	Online Webinar	7.00 pm - 8.00 pm
27.09.2024	Friday	Central - YEP	IFS - Young Turks Journal Club - Activity	Online Webinar	8.00 pm - 9.00 pm
27.09.2024	Friday	Central - Quiz	IFS Quiz - Genius Junction Monthly Quiz	Online Webinar	7.30 pm - 8.00 pm
28.09.2024	Saturday	Chapter	IFS Haryana Chapter PCOS Awareness Activity	Physical	Half Day
28.09.2024	Saturday	Chapter Quiz	IFS Chhatisgarh - Chapter Quiz on Kahoot	Online Webinar	5.00 pm - 6.00 pm
29.09.2024	Sunday	Chapter Quiz	IFS UP East - Chapter Quiz on Kahoot	Online Webinar	4:30 pm-5:30 pm
29.09.2024	Sunday	Pharma CME - Lucknow	IFS UP East - Chapter Activity InterMedics	Physical	1.00 pm - 5.00 pm
01.10.2024	Wednesday	SIG	SIG: Endrometrosis	Online Webinar	4.00 pm - 6.00 pm
02.10.2024	Thursday	Chapter	IFS MP Chapter Activity (Polaris)	Online Webinar	5.00 pm - 7.00 pm

Activity Date	Activity Day	Chapter/SIG / Zone / Joint/ Other	Activity Name	Mode	Time
04.10.2024	Friday	SIG	SIG Reproductive Endocrinology	Online Webinar	3.30 pm - 5.00 pm
04.10.2024	Friday	Chapter	IFS Haryana Chapter Activity with Karnal obs & gyn society	Online Webinar	7.00 pm - 9.00 pm
04.10.2024	Friday	Central - CEP	IFS - Counsellor Empowerment Program	Online Webinar	4.00 pm - 5.00 pm
06.10.2024	Sunday	Pharma CME - Sun	IFS Telangana chapter with Nationa Series of Physical CME - Sun Pharma	Physical	11.00 am - 1.00 pm
06.10.2024	Sunday	SIG + Chapter	SIG: Genetics with IFS Karnataka Chapter CME	Physical	11.00 am - 3.00 pm
06.10.2024	Sunday	SIG + Chapter	SIG: Reproductive Endocrinology (Surat)	Physical	Full Day
08.10.2024	Tuesday	Central - CEP	Counsellor Empowerment Program	Online Webinar	6.00 pm - 7.00 pm
08.10.2024	Tuesday	Chapter	IFS Haryana Chapter PCOS Awareness Activity	Physical	Half Day
10.10.2024	Thursday	Chapter	IFS Chhattisgarh - One day Annual Conference	Physical	Full Day
10.10.2024	Thursday	SIG + Chapter	SIG: Genital Tuberculosis with MP Chapter Activity	Online Webinar	7.00 pm - 8.00 pm
11.10.2024	Friday	SIG	SIG: Reproductive Endocinology	Online Webinar	4.00 pm - 6.00 pm
11.10.2024	Friday	Central - YEP	IFS - Young Turks Journal Club - Activity	Online Webinar	7.00 pm - 8.00 pm
13.10.2024	Sunday	Central - NEP	IFS - Nursing Empowerment Program (Nightangle)	Online Webinar	7.00 pm - 8.00 pm
15.10.2024	Tuesday	Chapter	IFS Odisha Chapter Activity	Physical	6.30 pm - 9.30 pm
15.10.2024	Tuesday	Chapter Quiz	IFS Chhatisgarh - Chapter Quiz on Kahoot	Online Webinar	4.00 pm - 5.00 pm
16.10.2024	Wednesday	Chapter	IFS MP Chapter Suraksha Webinar	Online Webinar	5.00 pm - 7.00 pm
16.10.2024	Wednesday	Central - Delhi Foum	IFS Delhi Forum Meeting (CP, Delhi)	Physical	1.00 pm - 5.00 pm
17.10.2024	Thursday	Zonal Quiz	IFS South Zone Quiz (Tamilnadu, Bengaluru, Odisha, Pondicherry, South TN)	Online Webinar	6.00 pm - 7.00 pm
18.10.2024	Friday	Chapter Quiz	IFS Andhra Pradesh - Chapter Quiz on Kahoot	Online Webinar	7.00 pm - 8.00 pm
18.10.2024	Friday	Chapter Quiz	IFS Karnataka - Chapter Quiz on Kahoot	Online Webinar	6.00 pm - 7.00 pm
18.10.2024	Friday	Central - EBM	Monthly Meet - Executive Body Meet (EBM)	Physical	5.00 pm - 7.00 pm
19.10.2024	Saturday	Pharma CME - Caleganix	IFS West Bengal chapter with Nationa Series of Physical CME - Celeganix Pharma	Physical	7.00 pm - 11.00 pm
19.10.2024	Saturday	Chapter Quiz	IFS Telangana & Andhra Chapter Quiz on Kahoot	Online Webinar	4.00 pm - 5.00 pm
20.10.2024	Sunday	Chapter Quiz	IFS South TN & Pondicherry Chapter Quiz on Kahoot	Online Webinar	11.00 am - 12.00 pm
20.10.2024	Sunday	Chapter	IFS Kerala Chapter Activity	Physical	9.00 am - 1.30 pm
21.10.2024	Monday	Pharma CME - Sun	IFS Kerala chapter with Nationa Series of Physical CME - Sun Pharma	Physical	6.00 pm - 9.00 pm
21.10.2024	Monday	SIG	SIG: Research & Methodology (Module 3)	Online Webinar	4.00 pm - 5.30 pm
22.10.2024	Tuesday	SIG	SIG Endoscopy with Kota OBG Society	Online Webinar	4.00 pm - 6.00 pm
22.10.2024	Tuesday	Chapter Quiz	IFS Kerala - Chapter Quiz on Kahoot	Online Webinar	7.00 pm - 8.00 pm
24.10.2024	Thursday	SIG	SIG: Genetics with ACE Webinar CME	Online Webinar	6.30 pm - 8.00 pm
24.10.2024	Thursday	Chapter	IFS Vidarbha Chapter Activity	Physical	7.30 pm - 10.00 pm
25.10.2024	Friday	Chapter	IFS Haryana Chapter PCOS Awareness Activity	Physical	Half Day
25.10.2024	Friday	Central - YEP	IFS - Young Turks Journal Club - Activity	Online Webinar	8.00 pm - 9.00 pm
26.10.2024	Saturday	Central - Quiz	IFS Quiz - Genius Junction Monthly Quiz	Online Webinar	7.30 pm - 8.00 pm

Activity Date	Activity Day	Chapter/SIG / Zone / Joint/ Other	Activity Name	Mode	Time
26.10.2024	Saturday	Pharma CME - Shivani	IFS Tamilnadu chapter with Nationa Series of Physical CME - Shivani Pharma	Physical	6.00 pm - 9.00 pm
26.10.2024	Saturday	Chapter	IFS Haryana Chapter PCOS Awareness Activity	Physical	Half Day
26.10.2024	Saturday	SIG	SIG: PCOS Activity	Online Webinar	4.00 pm - 6.00 pm
27.10.2024	Sunday	Chapter Installation	IFS North East - Installation Ceremony (Dr Pankaj Sir & Dr Nisha Bhatnagar Ma'am)	Physical	6.00 pm - 9.30 pm
29.10.2024	Tuesday	Chapter Quiz	IFS Maharashtra - Chapter Quiz on Kahoot	Online Webinar	3.00 pm - 4.00 pm
29.10.2024	Tuesday	Chapter Quiz	IFS Punjab - Chapter Quiz on Kahoot	Online Webinar	5.00 pm - 6.00 pm
31.10.2024	Thursday	SIG	SIG: PCOS	Physical	Half Day
03.11.2024	Sunday	Chapter	Odisha Chapter - 3rd Annual Conference (Dr Pankaj Sir & Dr Shweta Ma'am)	Physical	Full Day
06.11.2024	Wednesday	Chapter	IFS MP Chapter Activity (Polaris)	Online Webinar	5.00 pm - 7.00 pm
06.11.2024	Wednesday	Chapter	IFS Haryana Chapter PCOS Awareness Activity	Physical	Half Day
07.11.2024	Thursday	Zonal Quiz	IFS West Zone Quiz (Gujarat, Rajasthan, Vidarbha, Maharashtra)	Online Webinar	6.00 pm - 7.00 pm
08.11.2024	Friday	Central - YEP	IFS - Young Turks Journal Club - Activity	Online Webinar	7.00 pm - 8.00 pm
09.11.2024	Saturday	IFS - UK Forum	IFS UK Forum First Webinar Activity	Online Webinar	6.30 pm - 8.00 pm
09.11.2024	Saturday	Chapter	Bihar Chapter - Jaipur	Physical	12.00 pm - 2.00 pm
10.11.2024	Sunday	Chapter	IFS Chhatisgarh 4th Annual conference	Physical	All Day
10.11.2024	Sunday	Central - NEP	Nursing - Empowerment Program (Nightangle)	Online Webinar	7.00 pm - 8.00 pm
11.11.2024	Monday	SIG + Chapter	SIG: Genital Tuberculosis with MP Chapter Activity	Online Webinar	12.00 pm - 2.00 pm
11.11.2024	Wednesday	SIG + Chapter	SIG: Genital Tuberculosis with MP Chapter Activity	Online Webinar	12.00 pm - 2.00 pm
12.11.2024	Tuesday	Chapter	IFS Kerala Chapter Activity	Online Webinar	7.00 pm - 9.00 pm
13.11.2024	Wednesday	SIG + Chapter	SIG: Endrometrosis with MP Chapter (Sudeeksha 2.0)	Physical	10.00 Am - 2.00 pm
15.11.2024	Friday	Central - EBM	Monthly Meet - Executive Body Meet (EBM)	Physical	5.00 pm - 7.00 pm
16.11.2024	Saturday	North Zone Quiz	IFS Central Zone Quiz (MP, Chhattisgarh, UP West & UP East)	Online Webinar	7.00 pm - 8.00 pm
18.11.2024	Monday	North Zone Quiz	IFS North Zone Quiz (Jammu, Haryana, Punjab & Chandigarh)	Online Webinar	7.00 pm - 8.00 pm
21.11.2024	Thursday	Delhi Quiz	Delhi Central Quiz at R&R Hospital	Physical	9.00 am - 5.00 pm
22.11.2024		SIG + Chapter	SIG: Endrometrosis with MP Chapter (Sudeeksha 2.0) Live workshop	Online Webinar	10.00 Am - 4.00 pm
23.11.2024	Saturday	Chapter	IFS UP East Chapter Activity	Physical	6.30 pm - 8.30 pm
26.11.2024	Tuesday	Delhi forum + SIG	IFS Delhi Forum with SIG Endoscopy Activity	Online Webinar	4.00 pm - 6.00 pm
26.11.2024	Tuesday	Chapter	IFS Kerala Chapter Activity	Online Webinar	7.00 pm - 8.00 pm
28.11.2024	Thursday	Chapter	Chhattisgarh Chapter Activity	Online Webinar	4:00pm-5:30pm
29.11.2024	Friday	Central - Quiz	IFS Quiz - Genius Junction Monthly Quiz	Online Webinar	7.30 pm - 8.00 pm
29.11.2024	Friday	Central - YEP	IFS - Young Turks Journal Club - Activity	Online Webinar	8.00 pm - 9.00 pm
29.11.2024	Friday	Chapter	IFS South Tamilnadu Chapter Activity	Online Webinar	7.00 pm - 8.00 pm
30.11.2024	Saturday	Chapter	IFS MP Chapter 26 Sukanya Awareness Activities (April to Nov)	Physical	Half Day
12/6/24	Friday	20th Fertivision	IFS - Annual Conference (Day 1) Gujarat	Physical	Full Day

Activity Date	Activity Day	Chapter/SIG / Zone / Joint/ Other	Activity Name	Mode	Time
12/7/24	Saturday	20th Fertivision	IFS - Annual Conference (Day 2) Gujarat (EBM + GBM)	Physical	Full Day
12/8/24	Sunday	20th Fertivision	IFS - Annual Conference (Day 3) Gujarat	Physical	Full Day
13.12.2024	Friday	Central - YEP	IFS - Young Turks Journal Club - Activity	Online Webinar	8.00 pm - 9.00 pm
21.12.2024	Tuesday	Chapter	IFS Rajasthan Chapter Activity	Physical	7.00 pm - 9.30 pm
26.12.2024	Thursday	Chapter	Chhattisgarh Chapter Activity	Online Webinar	4:00pm-5:30pm
27.12.2024	Friday	Central - YEP	IFS - Young Turks Journal Club - Activity	Online Webinar	8.00 pm - 9.00 pm
27.12.2024	Friday	Chapter	IFS South TN Chapter Activity	Online Webinar	6.00 pm - 8.00 pm
29.12.2024	Friday	Delhi forum	IFS Delhi Forum Meeting (Lemon Tree, Gurugram)	Physical	5:00pm-8:00pm
30.12.2024	Saturday	Chapter	IFS Haryana Chapter Activity	Online Webinar	4.00 pm - 6.00 pm
30.12.2024	Saturday	Central - SEP	Self Empowerment Program	Online Webinar	7.30 pm - 8.30 pm
30.12.2024	Saturday	SAEBR Guideline	Survey and Evidence Based Recommendations - Guideline Zoom Meet	Online Webinar	8.00 pm - 9.30 pm
30.12.2024	Saturday	Chapter	IFS Vidarbha chapter Activity	Physical	7.30 pm - 8.30 pm
10.01.2025	Friday	Central - YEP	IFS - Young Turks Journal Club - Activity	Online Webinar	8.00 pm - 9.00 pm
15.01.2025	Wednesday	Chapter	IFS Odisha Chapter Activity	Online Webinar	7.00 pm - 8.30 pm
16.01.2025	Thursday	Central - EBM	Monthly Meet - Executive Body Meet (EBM)	Physical	5.00 pm - 7.00 pm
16.01.2025	Thursday	FSR + Chapter	FSR Workshop with IFS Bihar Chapter Activity	Online Webinar	7.30 pm - 8.30 pm
18.01.2025	Saturday	Chapter	IFS MP Chapter Activity (Master Classes)	Online Webinar	3.00 pm - 5.00 pm
18.01.2025	Saturday	Pharma CME - Sun	IFS Rajasthan chapter with Nationa Series of Physical CME - Sun Pharma	Physical	7.30 pm - 9.30 pm
26.01.2025	Sunday	Chapter	IFS Haryana Chapter Activity	Physical	4.00 pm - 6.00 pm
26.01.2025	Sunday	2 Chapter	IFS South Tamilnadu & Pondicherry Chapter Activity	Online Webinar	7.30 pm - 8.30 pm
27.01.2025	Monday	Central - SEP	Self Empowerment Program	Online Webinar	7.30 pm - 8.30 pm
29.01.2025	Wednesday	2 SIG	SIG Endometriosis and SIG Counselling Activity	Online Webinar	4.00pm - 5:30 pm
29.01.2025	Wednesday	Green IVF	IFS Green IVF Program (First Webinar)	Online Webinar	7.30 pm - 9.30 pm
30.01.2025	Thursday	Central - Quiz	IFS Quiz - Genius Junction Monthly Quiz	Online Webinar	
30.01.2025	Thursday	Chapter	IFS Punjab - Chapter Activity	Online Webinar	5.00 pm - 6.00 pm
30.01.2025	Thursday	2 Chapters	IFS Rajasthan & Gujarat Chapter Activity	Online Webinar	8.00 pm - 9.30 pm
31.01.2025	Friday	Central - YEP	IFS - Young Turks Journal Club - Activity (Debate)	Online Webinar	8.00 pm - 9.00 pm
01.02.2025	Saturday	Chapter	IFS Rajasthan Chapter Activity	Physical	7.30 pm - 9.30 pm
01.02.2025	Saturday	Pharma CME - Sun	IFS Chandigarh Chapter with Nationa Series of Physical CME - Sun Pharma		
02.02.2025	Sunday	SIG + Chapter	SIG Reproductive Endocrinology (Chennai)	Physical	Full Day
13.02.2025	Sunday	Central - PEP	PEP Review of work (ROW) meeting	Online Webinar	3.00 pm - 5.00 pm
13.02.2025	Thursday	SIG + Chapter	SIG PCOS with IFS MP Chapter Activity	Online Webinar	5.00pm - 7:00 pm
14.02.2026	Friday	Central - YEP	IFS - Young Turks Journal Club - Activity	Online Webinar	8.00 pm - 9.00 pm
15.02.2025	Saturday	Pharma CME - MES	IFS Bihar chapter with Nationa Series of Physical CME - MES Pharma	Physical	6.00 pm - 9.00 pm

Activity Date	Activity Day	Chapter/SIG / Zone / Joint/ Other	Activity Name	Mode	Time
18.02.2025	Tuesday	Central - ESHRE	ESHRE campus internal meeting	Online Webinar	7.00 pm - 9.00 pm
20.02.2025	Thursday	Central - Quiz	IFS Quiz - Genius Junction Monthly Quiz	Online Webinar	7.15 pm - 8.15 pm
21.02.2025	Friday	Central - EBM	Monthly Meet - Executive Body Meet (EBM)	Physical	5.00 pm - 7.00 pm
22.02.2025	Saturday	SIG + Chapter	SIG Embrology with Bihar Chapter	Online Webinar	6.00 pm - 8.00 pm
23.02.2025	Sunday	IFS - UK Forum	IFS UK Forum First Webinar Activity	Online Webinar	2.00 pm - 4.00 pm
23.02.2025	Sunday	SIG	SIG Endoscopy Webinar	Physical	9.00 am - 12.00 pm
25.02.2025	Tuesday	FSR + Chapter	FSR Workshop with IFS Haryana Chapter Activity	Online Webinar	7.30 pm - 8.30 pm
25.02.2025	Tuesday	3 Chapters	IFS MP chapter with Punjab & Chattisgarh (Bharat Sangam)	Online Webinar	5.00 pm - 7.00 pm
27.02.2025	Thursday	SIG	SIG Endoscopy Webinar	Online Webinar	2.00 pm - 4.00 pm
28.02.2025	Thursday	Central - SEP	Self Empowerment Program	Online Webinar	7.30 pm - 8.30 pm
28.02.2025	Friday	Central - YEP	IFS - Young Turks Journal Club - Activity (Debate)	Online Webinar	8.00 pm - 9.00 pm
05.03.2025	Tuesday	SIG + Chapter	SIG Reproductive Endocrinology	Online Webinar	6.00 pm - 8.00 pm
07.03.2025	Friday	SIG + Chapter	SIG Endoscopy with Jharkhand Chapter Activity	Online Webinar	4.30 pm - 6.00 pm
08.03.2025	Saturday	Pharma CME - Sun	IFS UP East chapter with Nationa Series of Physical CME - Sun Pharma	Physical	6.00 pm - 9.00 pm
08.03.2025	Saturday	Chapter	IFS Chhattisgarh Chapter Activity	Physical	1.00 pm - 5.00 pm
09.03.2025	Sunday	Chapter	IFS Gujarat Chapter Actiity	Physical	10.00 am - 3.00 pm
09.03.2025	Sunday	Delhi forum + SIG	IFS Delhi Forum withEndometriosis & Haryana Meeting (Hotel)	Physical	1.00 pm - 4.00 pm
11.03.2025	Friday	Green IVF	IFS Green IVF Program (Second Webinar)	Online Webinar	7.30 pm - 9.30 pm
13.03.2025	Thursday	Sir & Ma'am Meet	Dhaula Kuan Metro Station Food Hub	Physical	1.30 pm - 2.30 pm
14.03.2025	Friday	Central - YEP	IFS - Young Turks Journal Club - Activity	Online Webinar	8.00 pm - 9.00 pm
20.03.2025	Thursday	SIG	SIG Research & Methodology Webinar (Module 4)	Online Webinar	6.00 pm - 8.00 pm
21.03.2025	Friday	Central - YEP	IFS - Young Turks Journal Club - Activity	Online Webinar	8.00 pm - 9.00 pm
25.03.2025	Thursday	Central - Quiz	IFS Quiz - Genius Junction Monthly Quiz	Online Webinar	7.15 pm - 8.15 pm
21.03.2025	Friday	Central - EBM	Monthly Meet - Executive Body Meet (EBM)	Physical	5.00 pm - 7.00 pm
21.03.2025	Friday	SIG	SIG Reproductive Endocrinology	Online Webinar	6:30pm-8:00pm
22.03.2025	Saturday	Sir's Birthday	Birthday of President Sir		Full Day
22.03.2025	Saturday	Pharma CME - Samarth	IFS Rajasthan chapter with Nationa Series of Physical CME - Samarth Pharma	Physical	6:30pm-8:00pm
23.03.2024	Sunday	Chapter	IFS Odisha Chapter Activity (Dr Pankaj Sir)	Physical	
26.03.2025	Wednesday	3 Chapters	IFS MP, Gujarat & Jharkhand Chapter Joint Activity (Bharat Sangam)	Online Webinar	5:30pm-7:00pm
27.03.2025	Thursday	Sir & Ma'am Meet	Dhaula Kuan Metro Station Food Hub	Physical	1.30 pm - 2.30 pm
27.03.2025	Thursday	Central - SEP	Self Empowerment Program (SEP)	Online Webinar	7.30 pm - 8.30 pm
27.03.2025	Thursday	Chapter	IFS South Tamilnadu Activity	Online Webinar	6.00 pm - 8.00 pm
27.03.2025	Thursday	FSR + Chapter	FSR Workshop with IFS Gujarat Chapter Activity	Online Webinar	7.30 pm - 8.30 pm
29.03.2025	Saturday	Chapter Installation	IFS Maharashtra (Pune) - Installation Ceremony (Dr Pankaj Sir & Dr Shweta Ma'am)	Physical	6:30 pm - 9:30 pm

Activity Date	Activity Day	Chapter/SIG / Zone / Joint/ Other	Activity Name	Mode	Time
02.04.2025	Wednesday	Green IVF	IFS Green IVF Program (Third Webinar)	Online Webinar	8.00 pm - 9.00 pm
03.04.2025	Thursday	SAEBR Guideline Meet	IFS - SAEBR Guideline Meet at Lemon Tree, Aerocity	Physical	3.00 pm - 7.30 pm
12.04.2025	Saturday	Chapter Installation	IFS Himachal Pradesh (Shimla) - Installation Ceremony (Dr Pankaj Sir & Dr Shweta Ma'am)	Physical	6:30 pm - 9:30 pm
16.04.2025	Wednesday	4 Chapters	IFS Gujarat, MP, Maharashra & Rajasthan online Certificate Caurse Joint Activity (Day 1)	Online Webinar	8:30 pm - 10:00 pm
17.04.2025	Thursday	Central - Quiz	IFS Quiz - Genius Junction Monthly Quiz	Online Webinar	7.15 pm - 8.15 pm
17.04.2025	Thursday	Sir & Ma'am Meet	Dhaula Kuan Metro Station Food Hub	Physical	1.30 pm - 2.30 pm
19.04.2025	Saturday	Chapter	IFS Vidarbha Chapter Activity	Physical	5.45 pm - 9.30 pm
20.04.2025	Sunday	Chapter	IFS Bihar Chapter Activity	Physical	11.30 am - 2.00 pm
20.04.2025	Sunday				
20.04.2025	Sunday	IFS Food Walk	IFS Food Walk at Chandni Chowk	Physical	10.30 am - 3.30 pm
21.04.2025	Monday	Central - EBM	Monthly Meet - Executive Body Meet (EBM)	Physical	5.00 pm - 7.00 pm
22.04.2025	Tuesday	5 Chapters	IFS Chandigarh, Punjab, Haryana, Rajasthan & Himachal Pradesh Joint Activity	Online Webinar	
23.04.2025	Wednesday	IFS Legacy Connect	IFS Legacy Connect 2005-2025 Zoom Meet	Online Webinar	3.00 pm - 5.00 pm
23.04.2025	Wednesday	4 Chapters	IFS Gujarat, MP, Maharashra & Rajasthan online Certificate Caurse Joint Activity (Day 2)	Online Webinar	8:30 pm - 10:00 pm
24.04.2025	Thursday	SIG	SIG Reproductive Endocrinology Webinar	Online Webinar	5.00 pm - 6.30 pm
24.04.2025	Thursday	Central - SEP	Self Empowerment Program (SEP)	Online Webinar	7.30 pm - 8.30 pm
24.04.2025	Thursday	SIG + Chapter	IFS Chhattisgarh Chapter with SIG Ultrasound	Online Webinar	
25.04.2025	Friday	SIG + Chapter	IFS Karnataka Chapter with SIG Endoscopy	Online Webinar	4.00 pm - 5.30 pm
26.04.2025	Saturday	Central - UNS	IFS Meeting with UNS Delhi (Dr Pankaj Talwar)	Physical	
27.04.2025	Sunday	Chapter	IFS Gujarat Chapter Actiity	Physical	10.00 am - 2.00 pm
27.04.2025	Sunday	SIG + Chapter	SIG Embryology workshop with Punjab Chapter Activity	Physical	Full Day
27.04.2025	Sunday	Central - UNS	IFS Meeting with UNS at Delhi (Dr Pankaj Talwar)	Physical	
27.04.2025	Sunday	Pharma CME - Sun	IFS Vidarbha chapter with Nationa Series of Physical CME - Sun Pharma	Physical	
27.04.2025	Sunday	Chapter	IFS South Tamilnadu Chapter Activity	Online Webinar	6.00 pm - 8.00 pm
28.04.2025	Monday	FSR + Chapter	FSR Workshop with IFS Chandigarh Chapter	Online Webinar	7.30 pm - 8.30 pm
30.04.2025	Wednesday	4 Chapters	IFS Gujarat, MP, Maharashra & Rajasthan online Certificate Caurse Joint Activity (Day 3)	Online Webinar	8:30 pm - 10:00 pm
01.05.2025	Thursday	Chapter	IFS South Tamilnadu Chapter Activity	Online Webinar	06.00 pm - 08.00 pm
06.05.2025	Tuesday	Chapter	IFS Gujarat Chapter Actiity	Online Webinar	8:30 pm - 10:00 pm
07.05.2025	Wednesday	4 Chapters	IFS Gujarat, MP, Maharashra & Rajasthan online Certificate Caurse Joint Activity (Day 4)	Online Webinar	8:30 pm - 10:00 pm
08.05.2025	Thursday	Sir & Ma'am Meet	Dhola Kua Metro Station Food Hub	Physical	1.30 pm - 2.30 pm
09.05.2025	Friday	Central - YEP	IFS - Young Turks Journal Club - Activity	Online Webinar	8.00 pm - 9.00 pm
09.05.2025	Friday	2 Chapters	IFS Rajasthan with Karnataka Chapter Joint Activity	Online Webinar	6.00 pm - 7.00 pm
10.05.2025	Saturday	SIG + UK Forum	SIG Endoscopy with UK Forum Activity	Online Webinar	4.00 pm - 6.00 pm

Activity Date	Activity Day	Chapter/SIG / Zone / Joint/ Other	Activity Name	Mode	Time
14.05.2025	Wednesday	4 Chapters	IFS Gujarat, MP, Maharashra & Rajasthan online Certificate Caurse Joint Activity (Day 5)	Online Webinar	8:30 pm - 10:00 pm
15.05.2025	Thursday	Central - Quiz	IFS Quiz - Genius Junction Monthly Quiz	Online Webinar	7.15 pm - 8.15 pm
16.05.2025	Friday	Central - EBM	Monthly Meet - Executive Body Meet (EBM)	Physical	5.00 pm - 7.00 pm
16.05.2025	Friday	Chapter	IFS National Conference - Varanasi (Day 1)	Physical	09.00 am - 5.00 pm
17.05.2025	Saturday	Chapter	IFS National Conference - Varanasi (Day 2)	Physical	09.00 am - 5.00 pm
18.05.2025	Sunday	Chapter	IFS National Conference - Varanasi (Day 3)	Physical	09.00 am - 3.00 pm
17.05.2025	Saturday	Central - NEP	Nursing - Empowerment Program (Nightangle)	Online Webinar	06.00 pm - 07.00 pm
18.05.2025	Sunday	Chapter	IFS Chandigarh Conference	Physical	
21.05.2025	Wednesday	Chapter	IFS MP chapter Activity (Suraksha)	Online Webinar	05.00 pm - 07.00 pm
21.05.2025	Wednesday	4 Chapters	IFS Gujarat, MP, Maharashra & Rajasthan online Certificate Caurse Joint Activity (Day 6)	Online Webinar	8:30 pm - 10:00 pm
22.05.2025	Thursday	Sir & Ma'am Meet	Dhaula Kuan Metro Station Food Hub	Physical	1.30 pm - 2.30 pm
25.05.2025	Saturday	Chapter	IFS Chhattisgarh Chapter CME with ROGS	Physical	02.00 pm - 05.00 pm
28.05.2025	Wednesday	FSR + Chapter	FSR Workshop with IFS Tamilnadu & Pondicheery Chapter Activity	Online Webinar	07.30 pm - 08.30 pm
28.05.2025	Wednesday	4 Chapters	IFS Gujarat, MP, Maharashra & Rajasthan online Certificate Caurse Joint Activity (Day 7)	Online Webinar	8:30 pm - 10:00 pm
28.05.2025	Wednesday	Central - SEP	Self Empowerment Program (SEP)	Online Webinar	07.30 pm - 08.30 pm
30.05.2025	Friday	Chapter	IFS MP Chapter Activity	Online Webinar	
01.06.2025	Sunday	Chapter	IFS Rajasthan Chapter Activity	Physical	
01.06.2025	Sunday	Chapter	IFS Chandigarh chapter Conference (Day 2)	Physical	09.00 am - 4.00 pm
04.06.2025	Wednesday	4 Chapters	IFS Gujarat, MP, Maharashra & Rajasthan online Certificate Caurse Joint Activity (Day 8)	Online Webinar	8:30 pm - 10:00 pm
05.06.2025	Thursday	Green IVF	IFS Green IVF Webinar on Green IVF Centre Initiative on World Environment Day	Online Webinar	08.00 pm - 10.00 pm
11.06.2025	Wednesday	4 Chapters	IFS Gujarat, MP, Maharashra & Rajasthan online Certificate Caurse Joint Activity (Day 9)	Online Webinar	8:30 pm - 10:00 pm
13.06.2025	Friday	SIG + Chapter	SIG Early Pregnancy with IFS UP West Chapter	Online Webinar	04.00 pm - 06.00 pm
13.06.2025	Friday	Central - YEP	IFS - Young Turks Journal Club - Activity	Online Webinar	8:00 pm - 09:00 pm
14.06.2025	Saturday	Chapter	IFS Odisha Chapter Activity	Physical	07.00 pm - 08.30 pm
15.06.2025	Sunday	Central - UNS	IFS Meeting with UNS Chandigarh (Dr Pankaj Talwar)	Physical	
18.06.2025	Wednesday	4 Chapters	IFS Gujarat, MP, Maharashra & Rajasthan online Certificate Caurse Joint Activity (Day 10)	Online Webinar	8:30 pm - 10:00 pm
19.06.2025	Thursday	Central - Quiz	IFS Quiz - Genius Junction Monthly Quiz	Online Webinar	7.15 pm - 8.15 pm
21.06.2025	Saturday	Chapter	IFS Odisha Chapter Activity	Physical	
21.06.2025	Saturday	Central - NEP	Nursing - Empowerment Program (Nightangle)	Online Webinar	06.00 pm - 07.00 pm
22.06.2025	Sunday	Central - VOH	Voice of Healthcare at Mumbai	Physical	
25.06.2025	Wednesday	4 Chapters	IFS Gujarat, MP, Maharashra & Rajasthan online Certificate Caurse Joint Activity (Day 11)	Online Webinar	8:30 pm - 10:00 pm
26.06.2025	Thursday	Chapter	IFS South Tamilnadu Chapter Activity	Online Webinar	06.00 pm - 08.00 pm

Activity Date	Activity Day	Chapter/SIG / Zone / Joint/ Other	Activity Name	Mode	Time
26.06.2025	Thursday	SIG + Chapter	IFS Chhattisgarh Chapter Association with Early Preganacy	Online Webinar	4.00 pm - 6.00 pm
27.06.2025	Friday	Central - EBM	Monthly Meet - Executive Body Meet (EBM)	Physical	5.00 pm - 7.00 pm
29.06.2025	Sunday	Chapter	IFS Odisha Chapter CME PG Conference	Physical	9.00 am - 6.00 pm
01.07.2025	Tuesday	Chapter	IFS Rajasthan Chapter Activity (Awareness Activity)	Physical	11.00 am - 12.00 pm
02.07.2025	Wednesday	4 Chapters	IFS Gujarat, MP, Maharashra & Rajasthan online Certificate Caurse Joint Activity (Day 12)	Online Webinar	8:30 pm - 10:00 pm
04.07.2025	Friday	Central - YEP	IFS - Young Turks Journal Club - Activity	Online Webinar	8:00 pm - 09:00 pm
05.07.2025	Saturday	FSR + Chapter	FSR Workshop with IFS Telangana & Andhra Pradesh Chapter Activity	Online Webinar	07.30 pm - 08.30 pm
08.07.2025	Tuesday	Ayushman Bharat	IFS Ayushman Bharat Digital Mission Webinar	Online Webinar	4.00 pm - 5.00 pm
09.07.2025	Wednesday	4 Chapters	IFS Gujarat, MP, Maharashra & Rajasthan online Certificate Caurse Joint Activity (Day 13)	Online Webinar	8:30 pm - 10:00 pm
12.07.2025	Saturday	Amity DCR	Amity DCR Fellows 2024-25 One day complimentary class by Dr PT	Physical	8:30 am - 6:00 pm
12.07.2025	Saturday	Central - ChatGPT	ChatGPT for Clinicians Webinar - Session 1	Online Webinar	7.30 pm - 8.30 pm
13.07.2025	Sunday	Central - CEP	IFS - Counsellor Empowerment Program	Online Webinar	4.00 pm - 5.00 pm
15.07.2025	Tuesday	SIG + Chapter	SIG POR with IFS Himachal Pradesh & Karnataka Chapter	Online Webinar	6.00 pm - 8.00 pm
16.07.2025	Wednesday	Chapter	IFS Odisha Chapter CME	Physical	7.00 pm - 8.30 pm
17.07.2025	Saturday	Central - NEP	Nursing - Empowerment Program (Nightangle)	Online Webinar	06.00 pm - 07.00 pm
17.07.2025	Thursday	Central - Quiz	IFS Quiz - Genius Junction Monthly Quiz	Online Webinar	7.15 pm - 8.15 pm
18.07.2025	Friday	Central - EBM	Monthly Meet - Executive Body Meet (EBM)	Physical	5.00 pm - 7.00 pm
19.07.2025	Saturday	Central Trade Meet	Trade Meeting in Delhi - The Leela Ambience for Fertivision 2025	Physical	7.00 pm - 10.00 pm
19.07.2025	Saturday	Central - ChatGPT	ChatGPT for Clinicians Webinar - Session 2	Online Webinar	7.30 pm - 8.30 pm
19.07.2025	Saturday	SIG	SIG Early Preganacy with AOGD	Physical	09.00 am - 04.00 pm
22.07.2025	Tuesday	SIG	SIG Endoscopy activitiy with ISRS & FT	Online Webinar	5.00 pm - 7.00 pm
23.07.2025	Wednesday	Chapter	IFS MP Chapter Suraksha Webinar	Online Webinar	5.00 pm - 7.00 pm
23.07.2025	Wednesday	Chapter	IFS Chandigarh, Punjab, Haryana, Rajasthan & Himachal Pradesh Joint Activity CME	Online Webinar	4.00 pm - 5.30 pm
25.07.2025	Friday	Chapter	IFS Chhattisgarh chapter Association with ROGS	Online Webinar	5.00 pm - 7.00 pm
25.07.2025	Friday	Chapter	IFS Viadrbha Chapter CME (WIVF Day Celebration)	Physical	5.00 pm - 7.00 pm
25.07.2025	Friday	SIG	SIG Endoscopy activitiy with KJIVF & Laparoscopy center	Physical	2.00 pm - 5.00 pm
25.07.2025	Friday	Chapter	IFS Odisha Chapter Celebrating World IVF & Embryologist Day CME	Physical	6.30 pm - 9.30 pm
25.07.2025	Friday	Central - IWH	IHW India IVF Summit & Award CME at Crown Plaza, Okhala	Physical	10.00 am - 5.00 pm
25.07.2025	Friday	Delhi forum	IFS Delhi Forum association with Green ART celebrating world IVF Day at Aurobindo Park - Walkathon	Physical	06.00 am - 08.00 am
25.07.2025	Friday	Central - YEP	IFS - Young Turks Journal Club - Activity	Online Webinar	8:00 pm - 09:00 pm
26.07.2025	Saturday	Central - ChatGPT	ChatGPT for Clinicians Webinar - Session 2	Online Webinar	7.30 pm - 8.30 pm
26.07.2025	Saturday	IFS SAEB-GPP	IFS Good Practice Point Survey Meeting at Hotel Lemon Tree Aerocity	Physical	4.00 pm - 7.00 pm

Activity Date	Activity Day	Chapter/SIG / Zone / Joint/ Other	Activity Name	Mode	Time
27.07.2025	Sunday	IFS Amity	Amity Enterence Exam 2025 Session	Physical	10.00 am - 2.00 pm
28.07.2025	Monday	SIG	SIG POR CME at CSOI, Chanakya Puri	Physical	7.00 pm - 9.00 pm
28.07.2025	Monday	Central - SEP	Self Empowerment Program (SEP)	Online Webinar	07.30 pm - 08.30 pm
29.07.2025	Tuesday	SIG + Chapter	SIG Endoscopy activitiy with IFS Vidarbha, UP West & Kerala Chapter	Online Webinar	4.00 pm - 6.00 pm
31.07.2025	Thursday	2 Chapters	IFS Greater Mumbai with Western Maharashtra Chapter	Online Webinar	5.00 pm - 7.00 pm
31.07.2025	Thursday	2 SIG	SIG Early Pregnancy & PCOS in association with Infertility and Reproductive Endocrinology AOGD with ISAR	Online Webinar	4.00 pm - 5.30 pm
02.08.2025	Saturday	SIG	SIG Early Preganancy with AOGD CME	Physical	11.00 am - 3.00 pm
05.08.2025	Tuesday	SIG + Chapter	SIG POR with IFS Kerala & UP West chapter webinar	Online Webinar	6.00 pm - 8.00 pm
07.08.2025	Thursday	Central - CEP	IFS - Counsellor Empowerment Program	Online Webinar	5.00 pm - 6.00 pm
10.08.2025	Sunday	FSR	Medical Research Summit & Blackbuck Award with FSR Publishing	Physical	10.00 am - 2.00 pm
10.08.2025	Sunday	Chapter	IFS Vidarbha Chapter CME	Physical	9.00 am - 2.00 pm
10.08.2025	Sunday	Delhi forum	IFS Delhi Forum Meeting (Rakhi & Inde Day Celebration)	Physical	11.00 am - 02.00 pm
13.08.2025	Wednesday	SIG	SIG Early Pregnancy IFS in association with Infertility and Reproductive Endocrinology AOGD with ISAR		5.00 pm - 7.00 pm
17.08.2025	Sunday	Chapter	IFS Greater Mumbai Chapter CME	Physical	10.00 am - 02.00 pm
21.08.2025	Thursday	Central - Quiz	IFS Quiz - Genius Junction Monthly Quiz	Online Webinar	7.15 pm - 8.15 pm
23.08.2025	Saturday	Central - Mid Term Meet	IFS Mid Term Meet + IFS Panel Discussion at Aloft, Aerocity	Physical	7.00 pm - 10.00 pm
24.08.2025	Sunday	Central - EBM	IFS Mid Term Meet + Executive Body Meet (EBM)	Physical	9.00 am - 6.00 pm
26.08.2025	Saturday	Central - NEP	Nursing - Empowerment Program (Nightangle)	Online Webinar	06.00 pm - 07.00 pm
31.08.2025	Sunday	Chapter	IFS Chandigarh chapter Conference (Day 1)	Physical	09.00 am - 4.00 pm
12.09.2025	Friday	Central - EBM	Monthly Meet - Executive Body Meet (EBM)	Physical	5.00 pm - 7.00 pm
18.09.2025	Thursday	Central - Quiz	IFS Quiz - Genius Junction Monthly Quiz	Online Webinar	7.15 pm - 8.15 pm
19.09.2025	Friday	SIG	SIG Research Methodology	Online Webinar	5.30 pm - 7.30 pm
20.09.2025	Saturday	Central - NEP	Nursing - Empowerment Program (Nightangle)	Online Webinar	06.00 pm - 07.00 pm
21.09.2025	Sunday	ESHRE Campus	IFS ESHRE campus collaboration with ISAR (Mumbai)	Physical	09.00 am - 2.00 pm
26.09.2025	Friday	Central - YEP	IFS - Young Turks Journal Club - Activity	Online Webinar	8:00 pm - 09:00 pm
16.10.2025	Thursday	Central - Quiz	IFS Quiz - Genius Junction Monthly Quiz	Online Webinar	7.15 pm - 8.15 pm
18.10.2025	Saturday	Central - NEP	Nursing - Empowerment Program (Nightangle)	Online Webinar	06.00 pm - 07.00 pm
24.10.2025	Friday	Central - EBM	Monthly Meet - Executive Body Meet (EBM)	Physical	5.00 pm - 7.00 pm
09.11.2025	Sunday	Chapter	IFS Chhattiasgarh Chapter - 4th Annual conference	Physical	
09.11.2025	Sunday	Chapter	IFS Odisha Chapter - 4th Annual conference	Physical	
14.11.2025	Friday	Central - EBM	Monthly Meet - Executive Body Meet (EBM)	Physical	5.00 pm - 7.00 pm
20.11.2025	Thursday	Central - Quiz	IFS Quiz - Genius Junction Monthly Quiz	Online Webinar	7.15 pm - 8.15 pm

Activity Date	Activity Day	Chapter/SIG / Zone / Joint/ Other	Activity Name	Mode	Time
12.12.2025	Friday	21st Fertivision	IFS - Annual Conference (Day 1) Hotel Leela, Delhi NCR	Physical	Full Day
13.12.2025	Saturday	22nd Fertivision	IFS - Annual Conference (Day 2) Hotel Leela, Delhi NCR	Physical	Full Day
14.12.2025	Sunday	23rd Fertivision	IFS - Annual Conference (Day 3) Hotel Leela, Delhi NCR	Physical	Full Day