



ARTICLE ON INFERTILITY AND IT'S TREATMENT

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ABSTRACT Parenthood is a dream of many couples; however, they may not plan a pregnancy keeping advancing age and issues pertaining to infertility in mind. Both unplanned pregnancy and infertility occur commonly. Traditionally fertility awareness was considered to be an expert in female anatomy and physiology and its role in family planning. Nevertheless, as the years go by in the first pregnancy grows worldwide, the infertility epidemic is growing. The global trend of parental delays is associated with many factors, in particular, the pursuit of higher education and career goals, a desire for stable employment and delays in finding a suitable partner. Globally between 50 to 80 million couples at a certain point in their reproductive lives suffer from infertility problems. Infertility situation in growing countries is entirely different from the situation in the developed countries. Other than the anatomical, endocrinological, genetic, and immunological problems, a substantial proportion of women grieve from avoidable problems such as postpartum infections, sexually transmitted infections, post abortion infection, polycystic ovary syndrome (PCOS), tubal damage, previous contraceptive complications, pelvic inflammatory diseases (PIDs) etc.

KEYWORDS :

INTRODUCTION

Infertility is defined as not being able to get pregnant (conceive) after one year (or longer) of unprotected sex. female fertility is known to decrease gradually with age, some providers assess and treat women aged 35 or older after 6 months of unprotected sex. Barren women should consider making an appointment with a fertility endocrinologist — a doctor who specializes in contraception. ¹Reproductive endocrinologists can also help women with recurrent miscarriage, defined as two or more spontaneous abortions.²

Causes

All of the steps during ovulation and fertilization need to happen correctly in order to get pregnant. Sometimes infertility problems occur at birth, and sometimes they develop over time. Causes of infertility can affect one or both partners. In about one-third of cases, the problem is with men, in about one-third of cases, the problem is with women, and in other cases, the problem occurs in both men and women, or the cause cannot be found.³ Causes of male infertility may include abnormal sperm production or function due to undescended testes, genetic abnormalities, health problems such as diabetes, or infections such as chlamydia, gonorrhea, mumps, or HIV. Dilated veins in the testicles (varicose veins) can also affect sperm quality.⁴

Causes of male infertility may include the abnormal sperm production or function due to undescended testes, genetic abnormalities, health problems such as diabetes, or infections such as chlamydia, gonorrhea, mumps or HIV. Enlarged veins in the testes (varicocele) also can affect the quality of sperm.⁵ Problems with the delivery of sperm due to sexual problems, such as premature ejaculation; certain genetic disorders, such as cystic fibrosis; structural problems, such as a blockage in the testicle; or damage or injury to the reproductive organs. Overexposure to certain environmental factors, such as pesticides and other chemicals, and radiation. Marijuana, anabolic steroids, and medications to treat bacterial infections, high blood pressure, and depression can also affect fertility.⁶ Frequent exposure to heat, such as in a sauna or hot tub, can increase body temperature and affect sperm production. Damage related to cancer and its treatment, including radiation or chemotherapy. Treatment for cancer can impair sperm production, sometimes severely.⁷

Causes of female infertility may include ovulation disorders, which affect the delivery of eggs from the ovaries. These may include hormonal disorders such as polycystic ovary syndrome. Hyperprolactinemia, increased thyroid hormone level (hyperthyroidism) or decreased thyroid hormone level (hypothyroidism) can affect the menstrual cycle or cause infertility.⁸ Other underlying causes include excessive exercise, eating disorders or tumors. Abnormalities of the uterus or cervix, abnormalities of the cervix, polyps in the uterus or the shape of the uterus. Benign (benign) tumors of the uterine wall (uterine fibroids) can block the fallopian

tubes or prevent a fertilized egg from implanting in the uterus, causing infertility. Damage or blockage of the fallopian tubes, often due to inflammation of the fallopian tubes (salpingitis).⁹ This may actually be due to a sexually transmitted disease, endometriosis, or pelvic inflammatory disease caused by adhesions. Endometriosis occurs when endometrial tissue grows outside the uterus, which can affect the function of the ovaries, uterus, and fallopian tubes. Primary ovarian failure (premature menopause) occurs when the ovaries stop working before age 40 and menstruation ends. Although the cause is unknown, various factors associated with early menopause, including immune system diseases, certain genetic abnormalities such as Turner syndrome or carriers of Fragile X syndrome, and radiation or chemotherapy treatment. Pieces of scar tissue that bind organs together that may form after a pelvic infection, appendicitis, endometriosis, or surgery on the abdomen or pelvis. Certain cancers particularly reproductive cancers usually impair female fertility. Radiation and chemotherapy can affect fertility.¹⁰

Many of the risk factors for both male and female infertility are the same. They are Fertility in women gradually decreases with age, particularly in their mid-30s, and decreases after the age of 37. Infertility in older women occurs because the number of eggs decreases and may also be related to health problems that affect fertility. Men over 40 may have lower fertility rates than younger men. Smoking either tobacco or marijuana can reduce your chances of getting pregnant. Smoking also reduces the potential effectiveness of infertility treatments. Miscarriages are more common in women who smoke. Smoking increases the risk of erectile dysfunction and low sperm count in men. For women, alcohol is strictly prohibited during pregnancy or pregnancy.¹¹

Drinking alcohol can cause infertility. In men, alcohol abuse can decrease sperm count and motility. For women, a sedentary lifestyle and being overweight can increase the risk of infertility. In men, being overweight can also affect sperm count. Women at risk for infertility problems include women with eating disorders such as anorexia or bulimia and women on very low-calorie or restricted diets. Lack of exercise leads to obesity, which increases the risk of infertility. Less often, ovulation problems may be associated with frequent and strenuous exercise in women who are not overweight.¹²

Although most types of infertility cannot be prevented in men, following strategies may help to avoid drug abuse, tobacco use and alcoholism which can contribute to male infertility. Avoid high temperatures found in hot tubs and hot baths, as they may temporarily affect sperm production and motility. Avoid exposure to industrial or environmental toxins, which can have an effect on sperm production. Limit medications that may impact fertility, both prescription and nonprescription drugs. Talk with your doctor about any medications you take regularly, but prescription medications should not be

discontinued without medical advice. Regular exercise improves sperm quality and increases your chances of getting pregnant.¹³ For women, several strategies can increase the chances of getting pregnant. Tobacco has many negative effects on fertility, overall health, and fetal health. If a woman smokes and is considering becoming pregnant, she should immediately advise quitting smoking.¹⁴ These substances can impair fertility and healthy fertility. Alcoholism or use of recreational drugs such as marijuana should be stopped completely. Women trying to conceive may limit their caffeine intake. They can get advice from your doctor regarding the safe use of caffeine. While regular exercise is important, strenuous exercise that can cause infrequent or absent menstrual cycles can affect fertility.¹⁵

Being overweight or underweight can affect hormone production and cause infertility. Male fertility requires that the testicles produce enough healthy sperm, and that the sperm is ejaculated effectively into the vagina and travels to the egg. Tests for male infertility attempt to determine whether any of these processes are impaired.¹⁶ Some fertility tests may include analysis of semen, which your doctor may require of one or more semen samples. Sperm is usually obtained by masturbating or stopping sexual intercourse and ejaculating semen in a clean container.¹⁷

The laboratory analyzes the semen sample. In some cases, the urine may be tested for sperm. Hormonal blood tests are required to check levels of testosterone and other male hormones. Genetic testing can determine if there are any genetic abnormalities that cause infertility. In some cases, a testicular biopsy may be done to detect abnormalities contributing to infertility or to obtain sperm for assisted reproductive techniques such as IVF.¹⁸ Imaging tests, such as MRI of the brain, transrectal or scrotal ultrasound, and vasectomy (angiography), may be done in certain situations. In rare cases, other tests may be done to evaluate the quality of the semen, such as to evaluate for DNA abnormalities in a semen sample.¹⁹ Investigations to confirm the diagnosis in women are evaluation of the female endocrine system, measurement of basal body temperature (BBT), endometrial biopsy, measurement of luteinizing hormone in urine, ultrasound, measurement of follicle stimulating hormone (FSH) and estradiol (E2), laparoscopy.²⁰

The female endocrine system assessment is the simplest test to evaluate ovulation. An increase in progesterone levels in the second half of the menstrual cycle increases body temperature by 0.5 to 1.0 degrees Fahrenheit. A BBT chart showing a temperature rise of 12-14 days after 11-16 days is considered normal. An endometrial biopsy is a biopsy of the endometrium in the middle or end of the luteal phase (between 7 and 12 days after ovulation) that provides confirmatory information for BT and serum progesterone analysis and can diagnose endometritis.²¹

The detection of luteinizing hormone in the urine predicts an LH surge, and an LH surge in the urine usually occurs about 1-2 days before the rise in BBT and 12-60 hours before ovulation. The most sensitive use of the test requires a woman to empty her bladder in the morning, restrict fluids and then perform the test between 10:00 a.m. and 12:00 p.m. Ultrasonography can be performed either trans – abdominally or, preferably, trans – vaginally, and is a very useful clinical tool to evaluate follicular development and ovulation. Generally, follicles mature and rupture between 17 to 22 mm in size. The loss of follicular size & clear follicles, & the appearance of fluid in the cul – de – sac is all suggestive of ovulation. Endometrial thickness in the mid luteal phase which is greater than 8 mm shows a normally developed post ovulatory endometrium. Follicle Stimulating Hormone (FSH) and Estradiol (E2) the normal upper range for this test is generally 10 – 13 mIU/ml. Levels below this range are normal and levels reaching 20 mIU/mL are associated with reduced pregnancy rates. Laparoscopy may be done to look for follicles and abnormalities associated with normal ovulation.²²

Pelvic Factor Investigation are Hystero salpingogram (HSG), Hysteroscopy, Magnetic Resonance Imaging. Hystero salpingogram (HSG) is a system in which a small quantity of radio – opaque fluid is injected into the uterus and the fallopian tubes and then visualized with x-rays. It is useful to diagnose intrauterine structures and lesions and compare status of the tubes inside the proximal, distal, and intra – pelvic region. Hysteroscopy is an operative system executed as a diagnostic manner or as a therapeutic intervention used to do tubal catheterization to open the blocked tubes and visualize the inner

structure of the tubes. This diagnostic takes a look at may be very beneficial in determining the practical repute of the fallopian tubes. Magnetic Resonance Imaging can be beneficial for differentiating myomas, and complex congenital uterine and pelvic abnormalities in addition to loads.²³

Post Coital Test is the standard look at for evaluating cervical element infertility. The look at can help to pick out issue in timing intercourse, sexual disorder, bad cervical mucus, cervical contamination, low sperm count number and/or motility, and the presence of antibodies; however, this check isn't always very correct. It needs to be carefully timed to be finished at ovulation or the results aren't interpreted. Antisperm Antibody Tests can be beneficial in decided on sufferers with shaking sperm movement on the semen evaluation or post – coital test, or a record of testicular operation or harm. Cervical Cultures can be assessed for E. Coli, gonorrhea, chlamydia and mycoplasma may be useful in figuring out contamination in decided on patients or in the ones present process intrauterine insemination or assisted reproductive technology methods.²⁴

Men's remedy for preferred sexual problems or lack of healthy sperm might also encompass, Changing lifestyle factors, Medications, Surgery, Sperm retrieval. Improving lifestyle and positive behaviors can improve chances for pregnancy, inclusive of discontinuing pick medicinal drugs, lowering or removing harmful materials, enhancing frequency and timing of intercourse, workout often, and optimizing other factors that can otherwise impair fertility. Certain medicinal drugs may additionally improve sperm remember and chance for accomplishing a hit pregnancy. These medicines may also growth testicular characteristic, including sperm manufacturing and first-class. For a few conditions, surgery may be capable of opposite a sperm blockage and restore fertility. In different instances, surgically repairing a varicocele may additionally improve basic possibilities for being pregnant. Sperm retrieval techniques reap sperm whilst ejaculation is a problem or whilst no sperm are gift in the ejaculated fluid. They may also be used in instances in which assisted reproductive techniques are deliberate and sperm counts are low or in any other case extraordinary.²⁵

Some women want only one or two treatment plans to enhance fertility. Other girls may additionally want several different varieties of treatment to attain pregnancy. Stimulating ovulation with fertility pills are the primary remedy for girls who're infertile due to ovulation issues. These medicinal drugs modify or induce ovulation. Consult medical doctor about fertility drug options — consisting of the advantages and risks of every type. During Intrauterine insemination (IUI) healthful sperm are positioned immediately within the uterus across the time the ovary releases one or more eggs to be fertilized. Depending on the motives for infertility, the timing of IUI may be coordinated with the normal cycle or with fertility medicines. Uterine troubles including endometrial polyps, a uterine septum, intrauterine scar tissue and some fibroids can be handled with hysteroscopic surgical operation. Endometriosis, pelvic adhesions, and larger fibroids may additionally require laparoscopic surgical procedure or surgical treatment with a larger incision of the abdomen.²⁶

Assisted reproductive technology (ART) is any fertility remedy in which the egg and sperm are handled. There are numerous styles of ART. In vitro fertilization (IVF) is the most not unusual ART method. IVF entails stimulating and retrieving multiple mature eggs, fertilizing them with sperm in a dish in a lab, and implanting the embryos within the uterus several days after fertilization.²⁷ Other techniques are every now and then used in an IVF cycle, together with Intracytoplasmic sperm injection (ICSI). A single healthy sperm is injected immediately right into a mature egg. ICSI is regularly used while there's bad semen pleasant or quantity, or if fertilization attempts all through earlier IVF cycles failed. Assisted hatching method assists the implantation of the embryo into the lining of the uterus by using beginning the outer masking of the embryo (hatching). Most ART is achieved the usage of a couple's own eggs and sperm. However, if there are excessive issues with either the eggs or the sperm, you could select to use eggs, sperm or embryos from a known or anonymous donor. Women who don't have a practical uterus or for whom pregnancy poses a serious health risk might select IVF the use of a gestational carrier. In this example, the couple's embryo is placed inside the uterus of the service for being pregnant.²⁸

CONCLUSION

Infertility will have drastic outcomes on couple's lives. Therefore, it's

far crucial to enhance their reproductive fitness. Among other healthcare experts, nurse midwives may be one of the care companies to whom the couples meet to begin with for history taking and initial assessment. As being concerned in reproductive fitness, they could play a crucial role in infertility care additionally by strengthening their know-how and abilities. They must construct rapport and verify couples comfort level to proportion their rather non-public and sensitive records. They should be informed approximately reproductive anatomy and body structure and should have experience in dealing with such customers. They need to have talents to assist the couple to explore their fears, anxieties, feeling of hopelessness, loneliness and psychological and spiritual distress associated with their sexual disorder, and help in figuring out coping strategies to preserve a healthful reproductive existence. They can liaison among the infertile couple and the multidisciplinary fitness care crew to pick out treatment modalities to promote health as an entire with special consciousness on reproductive fitness.

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