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Review

Management of Female Infertility

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Abstract

Infertility is defined as the inability to conceive after 1 year of unprotected intercourse. It has been estimated That 93% of healthy couples practicing unprotected intercourse should except to conceive within 1 year.webriely discussion about Herbal drugs,Pathophysiology, prevalence,Life style modification, Statistical analysis.C0 Morbid condition. Background Infertility is globally prevalent and India accounts for 25% of the global burden, but it is still a neglected reproductive health issue. To estimate the prevalence of infertility, Its determinants, perception and challenges faced by couples from the peri-urban area of Ahmedabad City. Materials and Methods A community-based cross-sectional study was conducted in peri-urban areas of Ahmedabad City. For quantitative data collection, 689 couples were selected through probability proportion-based sampling (PPBS).

Keywords: Pathophysiology,Herbs used In female Inferility, Life style modification.

1. INTRODUCTION

Infertility is an important condition in reproductive medicine and defined as the inability of a couple to access of pregnancy after 12 months of regular, unprotected intercourse. Due to the high cost of female infertility treatments, infertility also has a significant economic impact. Eighty to ninety percent of couples in wealthy nations who try to conceive are successful after a year, and ninety-five percent after two. The prevalence of infertility worldwide cannot be accurately estimated. The inability to conceive after a year of unprotected sexual activity is a common experience that affects both couples. Even though male infertility is a significant topic of debate, the focus of this overview will be on the diagnosis, management, and available treatments for female infertility. Healthcare providers need to be well-versed on normal fecundability, or the chance of getting pregnant in a single menstrual cycle, in order to effectively counsel patients and help them through the infertility evaluation process. (1)

2. Etiology

Theetiology of infertility is an important,To identify clinical risk factors for female infertility, a case-control research was conducted. Women with primary or secondary female infertility diagnoses were considered cases, while infertile women were considered controls. The most important risk factors linked to women's infertility were stress, previous pelvic surgeries, advanced age, high body mass index, and age at which sexual activity began.

There are many different reasons why people become infertile, and infertility is frequently not easily explained. To find the root cause and choose the best course of action, it is imperative to speak with a healthcare professional.

Research indicates that the distribution of infertility causes is as follows:

- 33% of infertility cases are attributed to female factors.
- 33% are linked to male factors.
- 33% involve both partners or remain unexplained.

Additionally, approximately 25% of couples facing infertility have multiple factors contributing to their challenges in achieving pregnancy.To ascertain the distribution of genders and the causes of infertility, the World Health Organization (WHO) conducted a comprehensive international survey.

"Disorders of the ovaries: 25% 15% of cases are endometriosis.

12% have pelvic adhesions.

11 percent have tubal blockage.

11% have additional uterine or tubal abnormalities.

7% hyperprolactinemia"

It is important to realize that, although these factors are not discussed here, male factor infertility is responsible for a sizable portion of the identifiable variables causing infertility.(1,2)

3.Pathophysiology

3:1Anovulation

One must first understand what happens during a typical ovulatory cycle in order to understand anovulation. A healthy hypothalamic-pituitary-ovarian (HPO) axis is necessary for ovulation in normal physiology. The hypothalamic arcuate nucleus, which is made up of a group of neurons, pulsatilely releases GnRH into the pituitary stalk's portal vessels when it is triggered. The anterior pituitary gland's receptors are stimulated by GnRH to generate and secrete both FSH and LH. LH controls the release of androgens from the ovarian theca cells, whereas FSH causes the ovarian follicles to mature and eventually produce estrogen. The pituitary gland then receives negative input from estrogen.

Eating disorders and excessive exercise are linked to hypothalamic amenorrhea, also known as functional hypothalamic amenorrhea (FHA), which lowers hypothalamic GnRH output. GnRH is suppressed as a result of raised cortisol brought on by reduced calorie intake, related weight loss, or extreme activity.The anterior pituitary gland releases less gonadotropins, follicle-stimulating hormone (FSH), and luteinizing hormone (LH) when GnRH pulsatility is reduced or absent. Low estrogen levels, anovulation, and aberrant follicle growth are the outcomes of these two deficits.Although there are normal to mild fluctuations in FSH and LH, the hormone ratio is similar to that of a prepubertal female, with FSH being higher than LH. Any modification to the GnRH pulse generator modifies the hormonal environment required for gonadotropin release and subsequent ovarian response.This kind of dysregulation is known to be brought on by a number of conditions (such as hyperprolactinemia)(5,9)

3.2 Endometriosis

Anatomical abnormalities and adhesions may result from endometriosis. One chronic gynecologic condition is endometriosis. Endometriosis refers to endometrial tissue that is located outside the uterus. Based on histological evidence of endometrial glands or stroma outside the uterus, the diagnosis is made. Most often found in the pelvis, endometriosis can spread throughout the entire abdomen and affects 10 to 15 percent of women of reproductive age. Additionally, endometriotic nodules impact the urinary system, including the ureter, bladder, and urethra, as well as the gastrointestinal tract. 12.5% of primary infertilities and 11.1% of secondary infertilities have been linked to endometriosis, respectively.

The American Society of Reproductive Medicine divides endometriosis into four stages, with stage **I** being mild and stage IV being severe. Although infertility is a known consequence of endometriosis, the pathophysiology is believed to vary depending on the stage.Infertility in stages **I** and **II** is thought to be linked to inflammation and elevated cytokine and prostaglandin synthesis, as well as the generation of natural killer cells, macrophages,and other immune cells. Defective follicular development, fertilization, and implantation are the results of the inflammation's impairment of ovarian and tubal function. Pelvic adhesions or masses that deform pelvic anatomy are linked to stages III and IV; this naturally hinders sperm motility, oocyte release, and tubal motility. Furthermore, it is thought that advanced endometriosis hinders folliculogenesis, which lowers

the possibility for conception.A more comprehensive understanding of the pathophysiology of endometriosis requires integrating the roles of oxidative stress and ROS with genetic, epigenetic, and environmental variables.(3,4,9)

3.3 Pelvic/Tubal Adhesion

Abnormalities of the uterus, fallopian tubes, ovaries, and surrounding pelvic tissues are all included in the pelvic factor. The diagnosis is suggested by a history of endometritis, septic abortion, pelvic infection, and intrauterine device use. Pelvic inflammatory disease (PID) is the most prevalent infectious process that affects infertility. Pelvic inflammatory disease brought on by bacteria like Gonorrhea, Chlamydia trachomatis,{To evaluate the role of C. trachomatis, which was found in 28.1% of infertile women, women with primary or secondary infertility were enlisted}or Mycoplasma genitalium is the primary cause of tubal factor infertility. 3.1% and 16.7% of primary and secondary infertility cases respectively, have pelvic inflammation. The microorganism that carries the greatest risk of infertility in association with PID is Chlamydia trachomatis.Hydrosalpinges, are a tubal abnormality caused by acute and chronic inflammation that damages the structural integrity of the fallopian.

This damage leads to tubal obstruction, such as severe endometriosis, adhesions from prior surgery or non-tubal infections (such as appendicitis or inflammatory bowel disease) pelvic tuberculosis, and salpingitis isthmica nodosa (also known as diverticulosis of the fallopian tube) that may obstruct tubal transport{which blocks the distribution of physiologic fluid in the fallopian tube and results in fluid accumulation}. The fallopian tube obstruction has been reported as a major cause of almost one fifth of female infertilities.These women are unable to let the ovum and the sperm converge, thus making fertilization impossible. Polypinduced adhesions and/or uterine cavity fibrosis are hallmarks of Asherman's syndrome. (9)

3.4 Uterine Causes

The uterine malformation is defined as female genital abnormality caused by an abnormal development of the Müllerian duct during embryogenesis .The uterine cause of infertility is an impeded implantation brought on by mechanical issues or decreased endometrial responsiveness. When compared to other infertile controls, one meta-analysis of uterine leiomyomas (fibroids) showed that only submucosal or intracavitary fibroids reduced implantation and pregnancy rates. It appears that fibroids with an intracavitary or submucosal component can lower the rate of implantation.

Uterine fibroids are common benign smooth muscle monoclonal tumors. Müllerian anomalies and other uterine anomalies are a major contributor to recurrent pregnancy loss According to estimates, the prevalence of uterine malformations is 6.7% in the general population, 7.3% in infertile women, and 16% in women who have experienced repeated miscarriages. Although it is estimated that CUA-related infertility makes up only 8% of female infertility reasons, CUAs are discovered in 25% of women who experience late first-trimester or second-trimester miscarriages. A transvaginal ultrasound examination can add information (hydrosalpinx, leiomyoma, ovarian cysts, including endometriomas, can often be observed).(9)

4.Prevalence

Worldwide, the prevalence of infertility ranges from 3% to 7%. Sexual dysfunction, psychological effects, personal suffering, societal repercussions, and clinical depression are all consequences of infertility. The current study aimed to perform a systematic review of the literature in order to determine the main risk factors for female infertility. From 1980 to 2013, we looked through the Cochrane, MEDLINE, and EMBASE databases. Comprehensive key words were used to perform a systematic search for information about the study's objectives, participants, and type in order to maximize the sensitivity of data collection. There were eightytwo published articles in the entire review.

Comparing descriptive statistics for 292 women who experienced infertility within three years of the interview with those from the National Survey of Fertility Growth. Age-specific period prevalence rate of infertility among married women of reproductive age group (n=689). The primary causes of infertility in women are ovarian, tubal, and peritoneal factors, abnormalities, advanced age (over 35), hormonal disorders, habits, genetic factors, medical conditions, and lifestyle choices. Lifestyle modifications, the detection and management of chronic illnesses, and prompt and appropriate treatment for STDs can all improve a woman's chances of becoming pregnant. (6,7,8)

5.Herbs used In female Inferility

5.1 Punica granatum (Pomegranate)

BIOLOGICAL SOURCES: Punica granatum (Pomegranate)

FAMILY :Punicaceae

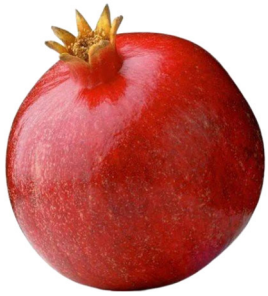

Fig 1: Pomegranate

Role in Female Fertility

Pomegranates have also been shown to have positive impacts on hormonal balance, particularly in relation to the luteinizing hormone (LH) and follicle stimulating hormone (FSH). Additionally, research indicates that pomegranate juice helps patients' levels of these hormones. Pomegranate extract reduced the levels of estrogen, free testosterone, and androstenedione— hormones that are typically elevated in PCOS patients—in rats with PCOS, according to a study. To improve fertility and restore the ovaries' normal function, these hormonal adjustments are important. Additionally, a different study demonstrated that pomegranate juice might increase the levels of FSH and LH in the serum of female rats. These hormones are important in promoting the development and maturity of the female ovarian follicle.

In addition to being high in vitamin C and polyphenols including anthocyanins, punicalagin, ellagic, and gallic acids, pomegranates also contain a significant amount of water. Phytoestrogens such as genistein, daidzein, coumestrol, glutamic amino acids, and aspartic acids are found in pomegranate seeds . According to a study conducted on rats with PCOS, pomegranate extract helps control and lessen PCOS symptoms since it contains phytoestrogens. This plant's extract thickens the uterine wall and increases uterine blood flow (vasodilatation), which both increase mucus output.Through anti-inflammatorpathways,them augmentation of mucosal secretions improves the rate of implantation. (9,10)

5.2.Matricaria chamomilla (Chamomile)
BIOLOGICAL SOURCES: Is the dried flower heads of the plant
Family: Asteraceae

Fig 2 Champmile

Role in Female Fertility

It contains flavonoid compounds and antioxidants such as gallic acid, camazelin, farnesene, matricin, coumarin derivatives, apigenin, and choline. The cause of PCOS is yet unknown. Studies have indicated that certain endocrine issues reinforce one another in PCOS. Defects in ovarian, adrenal, and hypalamic-pituitary axis function are among these conditions. Insulin resistance, elevated ovarian steroid secretion, and aberrant gonadotropin (FSH and LH) secretion are all linked to PCOS. Androgen production rises in response to an increase in LH. One of the most significant characteristics of the ovaries in PCOS is increased androgen production. Large levels of testosterone, androstenedione, and dehydroepiandrosterone are produced by the ovaries in this disease, but increased serum testosterone is more prevalent.

However, a steady increase in this hormone is a major problem for patients with this syndrome, as egg release requires a sudden increase in LH levels.

Chamomile is a phytoestrogen with anti-estrogenic (estrogen-lowering) properties. This plant can act as a selective estrogen receptor to regulate endogenous estrogen in people with PCOS and high estrogen levels. Additionally, chamomile is a helpful treatment for PCOS due to its progestogenic properties. By blocking COX-2, chamomile extract has been proposed to prevent postpartum hemorrhage and reduce pain in women, which is even more effective than chemical medications like NSAIDs and mefenamic acid.

53 Withania somnifera(Ashwagandha)
BIOLOGICAL SOURCES: It consists of the dried roots and stem bases of Withaniasomnifera Dunal,

Fig 3: Ashwagandha

FAMILY: Solanaceae
Role in Female Fertility:

This wild plant grows in hot, dry, semi-arid climates, including the Canary Islands, southern Mediterranean region, northern Africa, and northern India (Iran, Jordan, Sudan,
Palestine, Afghanistan, and Egypt).Herbal medicine is one of the primary therapeutic modalities in traditional Persian medicine, one of the most well-known subcategories of traditional medicine. One of the common herbal remedies for infertility and sexual dysfunction is Withaniasomnifera. More than 80 different types of phytochemicals have been identified in this plant, including steroidal and nonsteroidal alkaloids, steroidal lactones, and saponins like isopelletierine, anaferin, anahygrine, hygrine, cuscohygrine, tropine, pseudotropine, withananine, ashwagandha, withaferins, withanananinine, pseudowithanine, somnine, somniferine, somniferinine, 3-tropyltigloate, withanine, withasomine, visamine, mesoanaferine, sitoindoside, hentriacontane, amino acids like aspartic acid, glycine, tryptophan, proline, alanine, tyrosine, hydroxyproline valine, cystine, glutamic acid, and cysteine, flavonoids, starch, reducing sugars, proteolytic enzyme "chamase," glycosides, and volatile oil. Of these, sitoindosides and withaferin A played the most important part in the therapeutic effects of WS.(9,12)

5.4.Camellia sinensis (Chinese tea)
BIOLOGICAL SOURCES: Camellia sinensis.
FAMILY: Theaceae.

Fig 4: Camellia Sinensis

Role in Female Fertility

Camellia sinensis belongs to the Theaceae family and grows in East Asia, the Indian Subcontinent, and Southeast Asia, but it is today cultivated across the world in tropical and subtropical re-gions. Galloylquinic acid, epigallocatechin, epicatechin, succinic acid, gallocatechin, stric-tinin, apigenin glucosyl arabinoside, quercetin, myricetin, genistein, biochanin A-7-glucoside, daidzein 7-O-b-D-glucoside, apigenin-7-O-glucoside, cyanidin, delphinidin glycoside, kaempferol, p-coumaroyl glucosyl, rhamnosylgalactoside, malic acid, and pyroglutamic acid were all confirmed to be present in the C. sinensis extract by LC-ESI/MS analysis. Not surprisingly, the plant exhibits a range of medicinal qualities since isoflavones and flavonoids make up the majority of its constituents. In female Wistar rats with letrozoleinduced PCOS, the phytoestrogenic and antioxidant compounds in this plant restored the concentration and secretion of sex hormones, including testosterone, FSH, LH, and estradiol.

The benefits of green tea and catechins against PCOS are outlined and evaluated critically in this section. Regarding these effects, there were numerous differences found between animal studies and clinical trials. The definitive impact of green tea on PCOS requires further research. Research on the mechanism of green tea's anti-PCOS effects is still scarce. Green tea is generally helpful in preventing PCOS.(9,13)

5.5.Cinnamon

BIOLOGICAL SOURCES: Cinnamon, a spice, is derived from the inner bark of trees belonging to the genus Cinnamomum

Fig 5: Cinnamon

FAMILY: Lauraceae

Role in Female Fertility

Higher ovarian androgen production capacity is linked to hyperinsulinemia brought on by insulin resistance. A contributing factor to the pathophysiology of PCOS is excessive ovarian androgen production. Conversely, insulin resistance is the cause of PCOS's defining symptoms, which include irregular menstruation and excess androgen. Important herbs with therapeutic uses in traditional medicine and the pharmaceutical industry are the four species of Asthma, bronchitis, diarrhea, headaches, inflammation, heart problems, and PCOS have all been treated with cinnamonomum extracts and their potent compounds. They have also been used to boost female sexual desire and male and female sexual potency. Cinnamon appears to have a positive impact on insulin sensitivity, which suggests that it may help modify ovarian hormones and androgens by reducing insulin resistance. Ovarian hormones, gonadotropins, the estrous cycle, androgens, as well as ovarian morphology and histology, are among the reproductive characteristics that are affected by cinnamon treatment.

Accordingly, one animal study showed that, using a PCOS mouse model, cinnamon powder (10 mg/100 g body) for 20 days raised the level of insulin-like growth factor-binding protein (IGFBP-1) in plasma and the ovary while decreasing the level of IGF-1.(9,14)

6. Drugs used Currently for female infertility:

- Clomiphene citrate(Clomid)
- Letrozole(Femara)
- Gonadotropins
- Metformin (Fortamet)
- Progesterone

6.1.Clomiphenecitrate(Clomid)

Patients with polycystic ovarian syndrome (PCOS), secondary amenorrhea, amenorrhea-galactorrhea syndrome, post-oral contraceptive amenorrhea, psychogenic amenorrhea, and other causes of infertility are the most likely to benefit from clomiphene citrate. Those who are prescribed clomiphene medication cannot have hepatic impairment, vaginal hemorrhage, or an ovarian cyst.

Because it raises serum testosterone levels, men also frequently use it off-label to treat secondary hypogonadism and male infertility. A selective estrogen receptor modulator (SERM) approved by the FDA, clomiphene (also known as clomiphene citrate) is used to treat anovulatory or oligo-ovulatory infertility and induce ovulation in patients who wish to become pregnant.20% to 40% of pregnancies induced with clomiphene result in live births at 6 months. Flying needling therapy is one example of an adjuvant that can be used in conjunction with clomiphene. Similar to tamoxifen, CC is a nonsteroidal triphenylethylene derivative. that has the ability to act as both an estrogen agonist and an antagonist. Estrogen agonist qualities typically only become apparent at very low endogenous estrogen levels. After passing through the liver, clomiphene citrate is eliminated in the feces.(15,16)

6.2 Letrozole(Femara)

Letrozole, an aromatase inhibitor. that inhibits the last stage of the estrogen biosynthesis pathway, hence blocking the synthesis of estrogen, has been applied in a variety of infertile settings. The first clinical trial

of letrozole for ovulation induction was conducted more than 20 years ago. In women with estrogen-sensitive malignancies, letrozole is also used to preserve fertility. Additionally, research demonstrated that letrozole was beneficial in preparing the endometrium for frozen-thawed embryo transfer (FET). By binding the ratelimiting enzyme P450, letrozole, a highly steroidal and selective oral aromatase inhibitor , can reverse the process of oestrogen synthesis by preventing the conversion of testosterone to estradiol and androstenedione to estrone. Follicle Stimulating Hormone (FSH) is released in response to down-regulated estrogen, which promotes ovulation. Letrozole is now frequently used to induce ovulation in ovulatory women and anovulatory infertile patients. Further more, letrozole is an intrauterine and intracytoplasmic injectable sperm supplement for IVF (IVF).Letrozole is also emerging as a possible treatment for male infertility of unknown cause, proving to be an effective way of influencing hormonal profiles and increasing various seminal parameters such as sperm motility and concentration, as it inhibits aromatization affecting the feedback mechanism to the hypothalamus(19,20)

6.3 Gonadotropins

Gonadotropin-Releasing Hormone Antagonists

Gonadotropin-releasing hormone antagonists, such as ganirelix (Antagon; Organon) and cetrorelix acetate (Cetrotide;Merck Serono), inhibit undesired LH surge and ovulation inwomen undergoing controlled ovarian stimulation As an adjuvant to stop early ovulation in ART cycles, they have FDA approval. Off-label use of gonadotropin-releasing hormone antagonists is employed to treat OHSS. GnRH antagonists are used in a number of protocols to lower the elevated levels of estradiol (E2) and the intensity of symptoms in women with OHSS. According to one described protocol, a 2.3% rate of severe OHSS was observed in patients with a high risk for OHSS who had previously received long-term GnRH agonist (GnRH-a) treatment. Only one case of moderate OHSS in high-risk women was reported in a smaller study using the same protocol and 14 patients.

Gonadotropin-Releasing Hormone Agonist

The FDA has approved the use of gonadotropin-releasing hormone agonists, such as leuprolide acetate (Lupron; Abbvie), nafarelin acetate (Synarel; Pfizer), and goserelin acetate (Zoladex; AstraZeneca), for the treatment of endometriosis, uterine fibroids, prostate cancer, and premature puberty .They also play an off-label role in reproduction by preventing ovulation and the spontaneous LH surge in women receiving ART. These medications attach to GnRH receptors, which are typically triggered by the hypothalamus' pulsatile release of GnRH, which causes the pituitary gland to release FSH and LH. The pituitary gland produces more FSH and LH initially when exposed to synthetic GnRH continuously rather than pulsatilely, but this is followed by a decrease in these gonadotropin production During ART cycles, they are typically used at a time when endogenous E levels are Fertility and Sterility high, thereby reducing the menopausal side effects of the GnRH-a. Side effects of GnRH-a include hot flashes, vaginal dryness, headaches, mood swings, and depression.(18)

6.4 Metformin (Fortamet) for PCOS

By suppressing gluconeogenesis, reducing absorption of glucose in the intestine, and enhancing sensitivity to insulin, biguanide drug metformin is employed in treating type 2 diabetes mellitus. It was employed off-label for years for anovulatory infertility in PCOS women as an ovulation-inducing agent. Since metformin failed to enhance live-birth rates for Pregnancy in PCOS Trial I, it is no longer employed as monotherapy or in combination with CC for first-line ovulation induction. It may be employed as off-label therapy in PCOS women who are contraindicated or intolerant to combined oral contraceptives to enhance hyperandogenism or regularity of the menstrual cycle. GI distress, headache, abdominal pain, and, in a few cases, lactic acidosis are some of the side effects**.**

Metformin decreases circulating insulin and glucose through inhibition of hepatic glucose production, reduction of lipid synthesis, increase in fatty acid oxidation, and inhibition of gluconeogenesis. Not only does metformin enhance cellular insulin sensitivity, but it has also been shown to directly influence the ovary. Thus, it is logical that insulin-lowering and insulinsensitizing medications like metformin would enhance PCOS-affected women's symptoms and reproductive well-being.(21,18)

6.5 Progesterone

Progesterone is known as a hormone of pregnancy. It is standard practice to provide lutealphase progesterone after egg retrieval. Off-label intramuscular (IM) progesterone administration for luteal support continued for decades. Two vaginal progesterone preparations have been recently approved by the FDA for luteal-phase support in early pregnancy after ART: Ferring Pharmaceuticals' Endometrin and Merck Serono's Crinone progesterone gel. Other offlabel progesterone preparations include oral preparations and compounded suppositories. Early studies indicated that miscarriage was avoided by exogenous progesterone replacement after an early corpus luteectomy performed prior to 7 weeks of pregnancy. The corpus luteum function during an IVF cycle has been thought to be impaired by the exposure to high steroid doses, pituitary suppression, and ovarian follicle aspiration during oocyte retrieval. To ensure implantation and the initial phases of embryonic

development, exogenous luteal progesterone administration decidualizes the endometrium and supports the corpus luteum progesterone secreted. Progesterone supplementation for IUI cycles has been the subject of greater controversy. Compared with ovulation induction with CC and IUI, luteal-phase progesterone supplementation improved clinical pregnancy rates for women receiving gonadotropin with IUI therapy. (18)

7. Life style modification

Lifestyle factors include age at childbearing, diet, exercise, weight control, psychological stress, cigarette smoking, recreational drug use, alcohol use, caffeine intake, and exposure to the environment.

Useful suggestions for changing lifestyle choices

Both partners' fertility is significantly influenced by their ages. Before getting married, couples should think about each other's ages in order to increase the likelihood of getting pregnant. Fecundability peaks before the ages of thirty for women and thirty-five for men. After a maximum of one year without conception and six months for older couples infertile couples should seek treatment as soon as possible. Given that smoking seems to have a substantial negative influence on reproductive outcomes, couples who are attempting to conceive should reduce or stop smoking. There will be a four-year delay in menopause and a decreased chance of miscarriage. Additionally, one should refrain from passive smoking.

Age

A woman has all of her oocytes at birth, and as her oocyte count decreases, her menstrual cycle shortens and her infertility rises. A woman's chances of becoming pregnant can rise with age, reaching up to 71% when she is over 36, but then dropping to 41%.

Weight

Obesity affects fertility in more ways than just one. Infertility in women is linked to underweight and abnormally low body fat percentages.

Anxiety

It plays a significant role in every society, whether it be social, psychological, or physical. Social pressures, testing, diagnosis, treatment, failures, unmet desires, and even related expenses make infertility a stressful condition in and of itself.

Cigarette smoking

More than 4,000 chemicals are found in cigarette smoke, which is linked to several health issues. Ovarian function declines and hormone levels are disrupted, which lowers fertility in female smokers.

Milk

Almost everyone drinks milk, with the exception of those who are lactose intolerant. Our bodies require fat to preserve the structure of our cells. Furthermore, it has been demonstrated that eliminating the fat from milk results in a hormonal imbalance that affects the entire body and prevents ovulation or the production of a healthy egg. Consuming food (23)

8.C0 Morbid condition

(24)A woman and her partner should both be studied separately before a precise plan for psychological interventions can be created because infertility is a condition that affects both of them**.**

Depression

Table 1: Statistical analysis of infertility is caused by depression

Durat ion of Infertility	Female		Male	
	Yes	No	Yes	No
<1 Year	12 (52.2%)	21 (63.6%)	4 (12.2%)	29 (87.8%)
1-3 Year	14 (56%)	11 (44%)	6(24%)	19 (76%)
>3 Year	8 (47.1%)	9 (52.9%)	1 (5.9%)	16(94.1%)

Anxiety

Tamil 2: Statistical analysis of infertility caused by Anxiety

Duration Of Infertility	Female		Male	
	Yes	No	Yes	No
<1 Year	15 (45.5%)	18 (54.5%)	6 (18.1%)	27 (81.8%)
-3 Year	14 (56%)	11 (44%)	2 (8%)	23 (92%)
3 Year	7 (41.1%)	10 (58.9%)	3 (17.6%)	14 (82.4%)

Stress

Table 3: Statistical analysis of infertility is caused by Stress

Duration Of Infertility	Female		Male	
	Yes	No	Yes	No
<1 Year	**29 (87.8%)**	**4 (12.2%)**	**22 (66.7%)**	**11 (33.3%)**
1-3 Year	**22 (88%)**	**3 (12%)**	**15 (60%)**	**10 (40%)**
>3 Year	**10 (58.8%)**	**7 (41.2%)**	**5 (29.4%)**	**12 (70.6%)**

9. CONSULSION

Female infertility can stem from various causes, including ovulatory disorders and structural abnormalities. Treatment options vary, and addressing underlying issues often leads to positive outcomes, emphasizing the importance of early diagnosis and intervention.

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