

**FEMALE INFERTILITY- YOU AND YOUR HORMONES PROFILE****<sup>1</sup>Dale Dipali Mohan, <sup>2</sup>Dr. Aher Nitin Balkrishana and <sup>3</sup>Deshmukh Dhananjay Babanrao.**<sup>1</sup>Lecturer, Ashvin College of Pharmacy Manchi -Hill, Tel: Sangamner, Dist Ahemadnager, Maharashtra, India.<sup>2</sup>Principal, Ashvin College of Pharmacy Manchi -Hill, Tel: Sangamner, Dist Ahemadnager, Maharashtra, India.<sup>3</sup>Vice-Principal, Ashvin College of Pharmacy Manchi -Hill, Tel: Sangamner, Dist Ahemadnager, Maharashtra, India.**\*Corresponding Author: Dale Dipali Mohan**

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**ABSTRACT**

Female Infertility is a Serious gynecological challenge for many women within the reproductive age. Female Infertility is caused by hormonal dysfunction of the hypothalamic-pituitary-gonadal axis. Female infertility is the major disorder which causes lack of conception and reproducibility. Stressful life style, excess radiation, lack of biological food, Genetically disorder have resulted the female infertility. The process of ovulation is mediated by the interactions of hypothalamic Pituitary and Ovarian hormones. Recently a great attention has been paid to the role of hormones as a diagnostic tool in the evaluation of female infertility. The purpose of this study was to identify the association between female infertility and hormonal imbalance (FSH, LH and Prolactin). Due to wars in Iraq, since 1990 and after 2003, the Iraqi environment suffered from acts of profanation. A large number of injuries and deaths were caused by destructive chemicals and radioactive materials. These events resulted in either cancer or infertility. Infertility is one of the medical, social and psychological burdens in Iraqi society. It is defined as "the failure to achieve a clinical pregnancy after 12 months or more of regular unprotected sexual intercourse. Induction of ovulation has remained a milestone in the women treatment anovulatory infertility.

**KEYWORDS:** Infertility, Hypothalamic-Pituitary-Gonadal Axis, Hormonal Dysfunction FSH, LH, Prolactin Hormones.**INTRODUCTION**

The ability to become pregnant peaks in a woman's midtwenties and decreases as the age increases and by age 35- 40 years medically it becomes a fertility factor. In addition, the incidence of miscarriage increases with increasing age, nutritional and lifestyle changes. Others are the reproductive organs, which are highly susceptible to free radical or oxidative toxicants and natural ageing as well as hormonal imbalance (Evers, 2002). Hormonal balance is very critical to monthly ovulation and development of the corpus luteum for preparation of the uterus for implantation. Synchronised hormonal changes leading to the release of an egg from an ovary and the thickening of the fertilized egg do not occur because the release of certain hormones is pulsatile and its inadequacy reduces fertility (Aonoet al., 1974). Luteinizing hormone, LH and Progesterone, Progesterone insufficiency can be diagnosed and if the Progesterone is low, there is less of an expected increase in temperature during the second half of the cycle after ovulation. Without sufficient Progesterone, the endometrium cannot be prepared for implantation and the fertile ova cannot be converted into the corpus luteum. Follicle Stimulating Hormone, FSH stimulates several follicles to mature and only one becomes

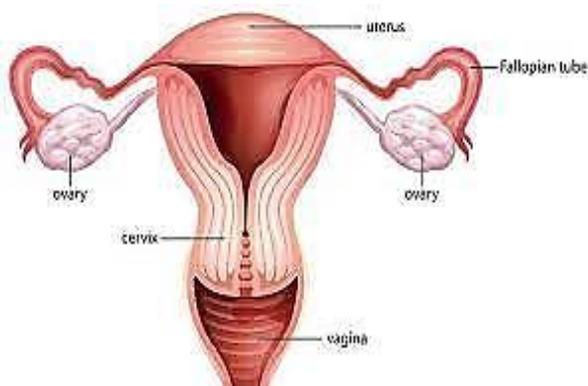
dominant during a cycle and LH stimulates ovulation by causing the dominant follicle to burst and release its eggs into the fallopian tube (Florack et al., 1994). Hormonal imbalance can be determined by blood tests of reproductive hormone levels. Measuring LH, FSH, Prolactin, PRL, PG and Oestradiol, E2 at day 2 or 21 can indicate whether or not the hormonal state is compatible with pregnancy (Fuentes et al., 1994). More patients with primary rather than secondary infertility seek medical advice and according to USA National Centre for Health Statistics, 4% of infertile women will not achieve a life birth and the psychological and financial burden that this diagnosis places on couples can be devastating and emotional pain real and intense (Evers, 2002). Successful conception relies upon the production of healthy sperm and eggs that meet and fuse in a supportive environment. Interruption of any step along these complex pathways results in infertility (Bayer, 1990). For conception to occur in a woman, the reproductive organs (uterus, cervix, vagina, fallopian tube, ovaries, endometrium) have to be in good health as well as balanced reproductive hormones.

The research community has established a fecundability rate multiple times, which has helped establish normal

pregnancy rates to assist in diagnosing infertility. The largest study identified that 85% of women would conceive within 12 months. Based on this study's findings, fecundability is 25% in the first three months of unprotected intercourse and then decreased to 15% for the remaining nine months.<sup>[1]</sup> This research has helped the American Society of Reproductive Medicine (ASRM) establish when a couple should undergo an infertility evaluation. The ASRM recommends initiating an evaluation for infertility after failing to achieve pregnancy within 12 months of unprotected intercourse or therapeutic donor insemination in women younger than 35 years or within 6 months in women older than 35.<sup>[2]</sup>

**Infertility:** Infertility is usually defined as no pregnancy after one year of unprotected intercourse. This is a relative measurement. Over time, many couples may achieve pregnancy.

In five years, nearly one half of "infertile" couples will conceive. Infertility also called sterility means not being able to become pregnant after a year of trying. If a woman keeps having miscarriages, it is called infertility. Lots of couples have infertility problems. About a third of the time, infertility can be traced to the woman. In another third of cases, it is because of the man. The rest of time, it is because of both partners or no cause is found. Infertility is not always a woman's problem. In only about one-third of cases is infertility due to the woman (female factors). In another one third of cases, infertility is due to the man (male factors). The remaining cases are caused by a mixture of male and female factors or by unknown factors.<sup>[3]</sup>



**Fig 1: Female Reproductive System.**

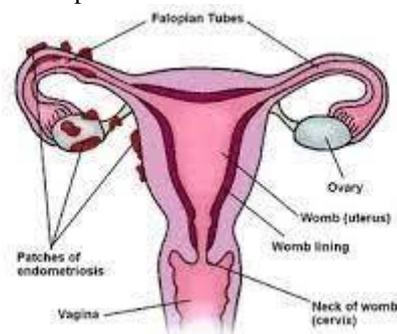
**Female infertility:** Female infertility is a common contributor to difficulties in producing children. At least half of all couples consulting for infertility will involve a female partner with a "problem". In the old days, the female partner used to bear the brunt of blame and only about 5% of couples seeking help with having a baby were thought to be due to a male infertility. Female infertility may be due to: Problems with a fertilized egg or embryo. being able to survive once it is attached to the lining of the uterus Problems with the eggs being able to attach to the lining of the uterus Problems with the eggs

being able to move from the ovary to the uterus Problems with the ovaries producing eggs More and more women are waiting until their 30s and 40s to have children. Actually, about 20 percent of women in the United States now have their first child after age 35. So age is an increasingly common cause of fertility problems. About one third of couples in which the woman is over 35 have fertility problems.<sup>[4]</sup>

Recently, hormonal disturbances have been considered of great importance in the knowledge of causes and diagnosis of female infertility. An increase in FSH in women may indicate a reduction in the production of good quality eggs and embryos for fertilization. a woman's chances for pregnancy may be lower than expected for her age. However, it does not mean she has no chance of conceiving. She may have more difficulty conceiving and may require infertility treatment. (Lee et al., 2013)<sup>[5]</sup>

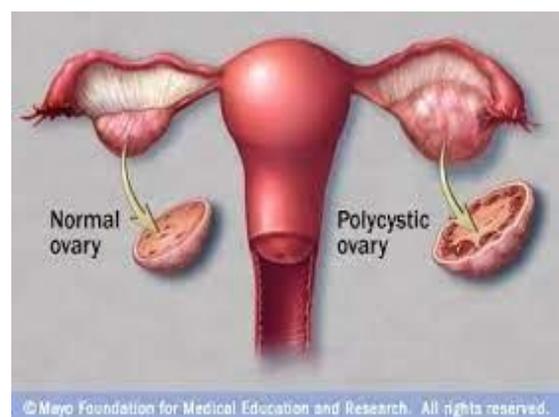
**Types of Female Infertility:** There are two main types of infertility seen in women:

- 1. Primary Infertility:** Refers to the condition in which a couple has never been able to conceive.



**Fig 2: Endometriosis.**

- Endometriosis:** Mainly affects women in their 30s to 40s and about 40% of women with endometriosis. This is when lining from your uterus is found outside of your uterus. Endometriosis will have some problem conceiving. The main cause of infertility from endometriosis seems to be scarring and adhesions that result in a blockage.<sup>[6]</sup>



**Fig 3: Polycystic Ovarian Syndrome (PCOS).**

- **Polycystic Ovarian Syndrome (PCOS):** The bad news about PCOS is that it is one of the main causes of infertility among women yet is severely under diagnosed (less than 25% of women who suffer from the syndrome have actually been diagnosed). One of the main reasons that it is not diagnosed is because symptoms of the syndrome generally do not appear to have any connection with each other. Usually it's not until a woman has troubles getting pregnant and she gets professional help that she learns she has PCOS. Some symptoms of PCOS include weight gain, acne, and irregular or absent periods, infertility, and failure to ovulate. PCOS can be diagnosed through a series of blood tests. It can easily be managed through the use of hormones that will trigger ovulation and will also help you get pregnant. **Ovulatory Disorders:** About 40% of female fertility problems are caused by ovulation problems such as irregular periods or failing to ovulate at all. These disorders can be caused by a variety of things such as excessive weight loss, stress, thyroid problems or hormone imbalances.
  - **Premature Ovarian Failure (POF):** This can be a very upsetting diagnosis as it means that you are no longer menstruating even though you are under the age of 40. Causes of POF can range from defects from before birth (like a chromosomal abnormality that results in defective ovaries) to your ovaries becoming resistant to your body's natural hormones when you are in your 20s and 30s. Pelvic surgery, chemotherapy, and radiation have also been known to result in POF. In very few cases, POF is present in a woman's family history.
  - **Uterine Factors:** This category encompasses a problem you may have with your uterus. If you have gone for fertility testing, you will probably receive a specific diagnosis as to just what the problem is. Some possible factors that can affect your uterus and your ability to conceive include uterine fibroids, uterine didelphys (this when you are born with a uterus that is made up of two parts with a wall dividing them), a complete lack of a uterus, scar tissue in the uterus or exposure to DES in the womb (DES was a drug given to pregnant women up until the late 1960s. Children born to women who took this drug often had defects, one of which is irregularly shaped uterus).
  - **Multiple Miscarriages:** Suffering from a miscarriage is always difficult, but suffering from one when you have been trying for months to get pregnant can be truly upsetting. While the main cause of miscarriage is genetic defects with the fetus, miscarriage can also be caused by problems with the uterus or cervix, unusual hormone levels, or infections or toxins in the environment.
  - **Luteal Phase Defect (LPD):** This can be caused by two things both involving your body's progesterone development. The first cause of LPD is attributed to your ovaries not secreting enough progesterone. The second reason could be that your endometrium is not responding is not properly prepared for pregnancy, thereby causing either fertility problems or an early miscarriage.
2. **Secondary Infertility:** Refers to those cases where a couple has been successful in conceiving at least once, but has been unsuccessful after that. It is important to keep communication open between you and your partner so that you both know what each other wants, hopes for and is willing to do (or not do) to become parents again.
  3. **Unexplained Infertility:** This may be one of the most aggravating things to hear if you are having troubles conceiving. Yes, even after going through all sorts of tests to figure out what is wrong, one in five couples will be told that their infertility is unexplainable. This doesn't mean that there isn't a reason for your fertility problems. Rather, the tests available today are not able to identify just what the problem is. But what does this mean for you? That's hard to say. You can explore the different fertility treatment options or just keep trying and hope for the best. If your fertility problems can't be identified, talk with your health care provider as well as your partner as to what the best course of action may be for you.
  4. **Poor Responder:** Women who have been going through fertility treatments that involve medication to stimulate ovulation and have had no luck may fall into this category. If you find yourself in this situation, then it indicates that you require a higher dosage of stimulation medication yet you may still have a negative outcome. If you have been considering IVF, try having an ovarian reserve test done beforehand. Women who do not respond well to fertility drugs are often not very successful at conceiving through IVF. Having an ovarian reserve test performed may help you save time, money and stress by letting you know if you are a suitable candidate for IVF. If you are a suitable candidate, then you and your health care provider may want to try different kinds of stimulant medications to see which one you respond best to. If you are a 'poor responder,' then make sure you are receiving treatment from a facility that has experience with other women who have been diagnosed as poor responders. This will help ensure that you get the best care designed just for you. LH is a hormone that is produced in the pituitary gland in both men and women. In women, LH is an important part of the menstrual cycle. It works in conjunction with follicle-stimulating hormone (FSH). The rise in estrogen tells the pituitary gland to stop producing FSH and to start making more LH. The shift to LH causes the egg to be released from the ovary, a process called ovulation. Generally, higher than normal levels of LH in a woman may mean the ovaries are absent or not functioning. In a young woman, high levels may mean that puberty is early. Low levels of LH in Ali *et al.*, *Am. J. PharmTech*

Res. 2016;6(5) ISSN: 2249-3387 [www.ajptr.com](http://www.ajptr.com) 112 the blood may indicate anorexia, an issue in the pituitary gland, stress, or damage to the hypothalamus in both men and women. Mary (Nam *et al.*, 2012)<sup>[7]</sup> Prolactin plays an important role in the reproductive health of both women and men. Its main role, however, is to stimulate the production of milk in women after childbirth. In other words, prolactin triggers lactation. Levels of prolactin have been found to be a measure of sexual satisfaction in both men and women (Lee *et al.*, 2013).<sup>[8]</sup>

## MATERIALS AND METHODS

Hormone testing, to measure levels of female hormones at certain times during a menstrual cycle day 2 or 3 measure of FSH and estrogen, to assess ovarian reserve measurements of thyroid function (a thyroid stimulating hormone (TSH) level of between 1 and 2 is considered optimal for conception) measurement of progesterone in the second half of the cycle to help confirm ovulation.

**Study Area and Population** The study was carried out at Umaru Sanda General Hospital, Bida, and a tertiary health care centre in Niger state. The state is named after the River Niger. Two of Nigeria's major hydroelectric power stations, the Kainji Dam and the Shiroro Dam, are located in Niger State. The state capital is Minna, and other major cities are Bida, Kontagora and Suleja. Bida is the traditional City of the Nupes, a Local Government Area (51 km<sup>2</sup>) located South-West of Minna, Niger State, coordinates: 9°05'N 6°01'E in Central Northern Nigeria. It is a dry and arid town with an estimated population of 178, 840.<sup>[9]</sup> The major ethnic groups are Nupes, Yorubas, and Igbos. Inter-marriage between these tribes occurs quite frequently especially in Bida town. Majority of the inhabitants are farmers, traders and civil servants. Social amenities available in Bida include primary schools, post primary institutions, tertiary institutions, primary health care centers, secondary health care centers and tertiary health care centers.

**Sample size** A total of 200 blood specimens were randomly collected from interested 200 female subjects living in Bida metropolis, Niger state. They consisted of 150 infertile women and 50 apparently healthy fertile women of reproductive age with normal menstrual cycle (range 28-30 days) as control. Ethical consideration Ethical approval was sought for and obtained from the Igbinedion University Health Research Ethics Committee. Also, administrative permission for the study was obtained from the Management, Umaru Sanda General Hospital, Bida, Niger state. **Eligibility of Subjects Inclusion Criteria** Consenting female subjects within reproductive age (15-45years) that are unable to conceive after one year despite regular and unprotected sexual intercourse, as well as apparently healthy subjects who were married and having children were included in the study. **Exclusion Criteria** Subjects who were below 15years and above 45years, as well as infertile women who were currently on hormonal therapy for the

treatment of their infertility were excluded from the study. Pregnant and lactating women, fertile women using hormonal injectable or oral contraceptives and those whose years of last child birth were more than five years were excluded from the control group. Informed Consent The purpose and protocol of the study were clearly explained to each patient and all participants were requested to voluntarily sign the consent forms in their own handwriting as proof of willingness to provide samples for the tests.

## Treatments of Female Infertility

### Treatment based upon three categories

1. **Allopathic treatment**
2. **Natural treatment**
3. **Home remedies**

1. **Allopathic Treatment:** Various fertility medicines are often used to treat women with ovulation problems. It is important to talk with your doctor about the pros and cons of these medicines. You should understand the risks, benefits, and side effects. Doctors also use surgery to treat some causes of infertility. Problems with a woman's ovaries, fallopian tubes, or uterus can sometimes be corrected with surgery.



**Fig 4: Intrauterine insemination (IUI).**

**A) Intrauterine insemination (IUI):** This is another type of treatment for infertility. IUI is known by most people as artificial insemination. In this procedure, the woman is injected with specially prepared sperm. Sometimes the woman is also treated with medicines that stimulate ovulation before IUI.<sup>[10]</sup>

**B) Assisted reproductive technology (ART):** This is a term that describes several different methods used to help infertile couples. ART involves removing eggs from a woman's body, mixing them with sperm in the laboratory and putting the embryos back into a woman's body.

Some methods includes in ART are following:

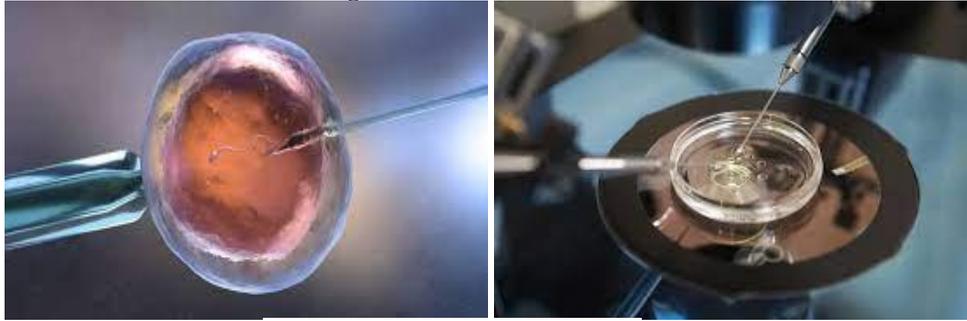


Fig 5: In vitro fertilization (IVF).

- a. **In vitro fertilization (IVF):** Means fertilization outside of the body. IVF is the most effective ART. It is often used when a woman's fallopian tubes are blocked or when a man produces too few sperm. Doctors treat the woman with a drug that causes the

ovaries to produce multiple eggs. Once mature, the eggs are removed from the woman. They are put in a dish in the lab along with the man's sperm for fertilization. After 3 to 5 days, healthy embryos are implanted in the woman's uterus.

### Zygote Intrafallopian Transfer

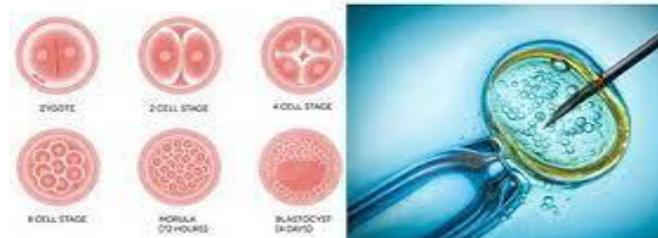


Fig 5: Zygote intrafallopian transfer.

- b. **Zygote intrafallopian transfer (ZIFT):** or Tubal Embryo Transfer is similar to IVF. Fertilization occurs in the laboratory. Then the very young

embryo is transferred to the fallopian tube instead of the uterus.

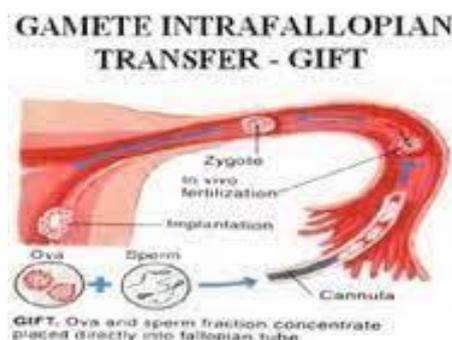
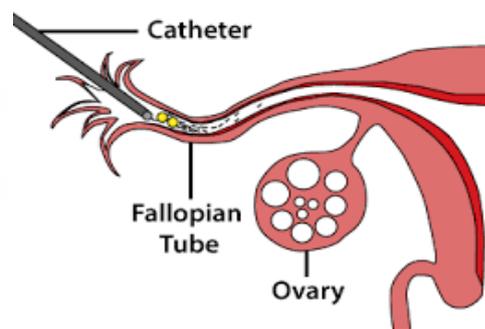


Fig 6: Gamete intrafallopian transfer.



- c. **Gamete intrafallopian transfer (GIFT):** involves transferring eggs and sperm into the woman's fallopian tube. So fertilization occurs in the woman's body. Few practices offer GIFT as an option.

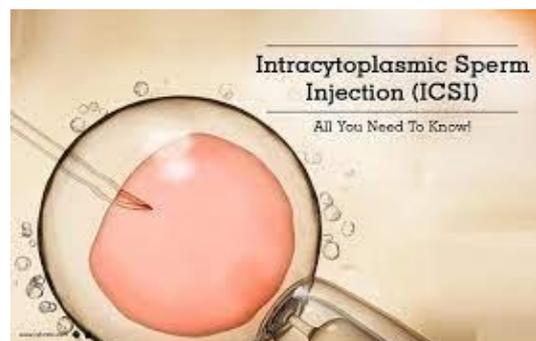


Fig 6: Intracytoplasmic sperm injection.

**d. Intracytoplasmic sperm injection (ICSI):** is often used for couples in which there are serious problems with the sperm. Sometimes it is also used for older couples or for those with failed IVF attempts. In ICSI, a single sperm is injected into a mature egg. Then the embryo is transferred to the uterus or fallopian tube.<sup>[11]</sup>

Some common medicines used to treat infertility in women include

**Clomiphene citrate (Clomid):** This medicine causes ovulation by acting on the pituitary gland. It is often used in women who have Polycystic Ovarian Syndrome (PCOS) or other problems with ovulation. This medicine is taken by mouth.

**Human menopausal gonadotropin or hMG (Repronex, Pergonal):** This medicine is often used for women who don't ovulate due to problems with their pituitary gland. hMG acts directly on the ovaries to stimulate ovulation. It is an injected medicine.

**Follicle-stimulating hormone or FSH (GonalF, Follistim):** FSH works much like hMG. It causes the ovaries to begin the process of ovulation. These medicines are usually injected.

**Gonadotropin-releasing hormone (Gn-RH) analog:** These medicines are often used for women who don't

ovulate regularly each month. Women who ovulate before the egg is ready can also use these medicines. Gn-RH analogs act on the pituitary gland to change when the body ovulates. These medicines are usually injected or given with a nasal spray.

**Metformin (Glucophage):** Doctors use this medicine for women who have insulin resistance and/or Polycystic Ovarian Syndrome (PCOS). This drug helps lower the high levels of male hormones in women with these conditions. This helps the body to ovulate. Sometimes clomiphene citrate or FSH is combined with metformin. This medicine is usually taken by mouth.

**Bromocriptine (Parlodel):** This medicine is used for women with ovulation problems due to high levels of prolactin. Prolactin is a hormone that causes milk production. Many fertility drugs increase a woman's chance of having twins, triplets or other multiples. Women who are pregnant with multiple fetuses have more problems during pregnancy. Multiple fetuses have a high risk of being born too early (prematurely). Premature babies are at a higher risk of health and developmental problems.

## 2. Natural Treatment

In the past several years, fertility specialists have made great strides in diagnosing and treating infertility. Surgery and hormone therapy can correct some infertility problems, they are following:



Fig 7: Exercise.

- **Exercise:** Exercise is a great way for women to increase fertility and promote overall health. Regular exercise regulates hormone production, reduces

stress and will even increase blood flow to a woman's reproductive organs. Reducing stress is also important for conception.



Fig 8: Smoking.

- **Stop Smoking:** Research clearly shows that smoking has a negative impact on conception in both men and women. In fact, studies reveal that women who smoke increase both the time to conception and the risk of spontaneous abortion.<sup>[12]-[13]</sup>
- **Drink Plenty of Water:** Keeping your body hydrated at all times is important for every aspect of fertility including aiding in vitamin absorption, cleansing the body from fertility-inhibiting toxins, and warding off dehydration. It's also necessary for optimizing your cervical mucus which is what protects and nourishes sperm until it reaches the egg.
- **Chaste Berry:** Natural herbs have also helped women get pregnant. One of the most common herbs used for fertility is the chaste berry. The herb comes from the fruit of a chaste tree and can be found in central Asia. For thousands of years this herb has been used by women to stimulate the production of breast milk and ease menstrual pain.
- **Have Sex Frequently:** Working to get pregnant and timing it each month can become extraordinarily stressful and rote. Try to have sex regularly, at least once every few days, and have fun with it. You may very much enjoy the light-heartedness of having sex when you least think you can get pregnant.
- **Eat in Hormonal Balance:** Many infertility issues can be attributed to abnormal hormonal fluctuations. Eating a balanced diet is one of the most effective methods to balance hormonal secretion of insulin and regulate proper glucose control. Along with improving your nutrient intake, this includes removing all processed flours and sugars such as white bread, pasta, pop, candy, and sugary juice from the diet.

### 3. Home remedies



**Fig 9: Jamun Leaves (*Eugenia jambolana* or *Syzygium cumini* L).**

- **Jamun Leaves (*Eugenia jambolana* or *Syzygium cumini* L):** To deal with the female infertility problem, you can eat jamun leaves. Add some honey in case you don't like the taste of jamun leaves.



**Fig 10: Root of Banyan Tree.**

- **Root of Banyan Tree:** Roots of banyan tree are highly effective in curing the female infertility problem. Collect these roots and dry them in sun for few days. Then grind them and make fine powder from them. When your menstrual cycles are over after that on the first night have this powder with milk. Make sure that you don't eat anything immediately after having this. Follow this remedy for about one year. There will be surely some good news waiting for you and all thanks to this simple and easy remedy.



**Fig 11: Winter Cherry.**

- **Winter Cherry:** This herb is also useful in the treatment of female infertility. Dry this herb and store it in powder form. After your menstrual cycle gets over start drinking 6 gram of this powder by putting it in one cup of milk. Do this for about one week and then again stop. Next month again follow the same procedure.<sup>[14]</sup>
- **Curd and Cheese:** Include cheese and curd in your daily meal, as these two are effective in increasing the chances of fertility in women.
- **Egg Plant:** Egg plant is effective in the treatment of female infertility. Cook this egg plant and have it with buttermilk. Try this remedy for about two months, as it will definitely help to cure female infertility problems.<sup>[15]</sup>



Fig 12: Yoga.

- **Yoga:** Joining some yoga classes, as some of the postures of Yoga really help in curing female infertility. It is better to do these postures under the guidance of experienced teacher.
- **Vitamin C and Vitamin E:** Both these vitamins are very effective in increasing the chances of fertility in women. Apart from this zinc is also effective in cure of female infertility. 1000mg of vitamin C and 30 mg of zinc should be consumed on a daily basis.<sup>[16]</sup>
- **Diet:** You must eat lots of green vegetables, fresh fruits, nuts, seeds, grains, milk, honey, curd, cheese, sprouts, beans, etc. All these things are needed for having a healthy body.
- **Avoid:** You should not drink coffee<sup>[17]</sup> tea, spicy and fatty food, white flour, fried foods and soft drinks. Also stay away from smoking and drinking alcohol. You should not consume any drugs like heroin and marijuana etc.<sup>[18]</sup>
- **Stay happy:** Female infertility is also caused due to stress, tension, fear and anxiety. So try to remain happy. If you have free time, then do something that gives you immense pleasure. Be nice to your partner and try to do what your partner likes.<sup>[19]</sup>
- **Prevention of infertility**

Some cases of infertility may be prevented through identified interventions:

- a. **Maintaining a healthy lifestyle:** Excessive exercise, consumption of caffeine and alcohol, and smoking (tobacco and marijuana) are all associated with decreased fertility, hence should be avoided. Eating a balanced and nutritious diet, fruits and vegetables (plenty of folates), and maintenance of normal body weight are associated with better fertility prospects.
- b. **Preventing or treating existing diseases:** Identifying and controlling chronic diseases such as diabetes, hyperthyroidism and hypothyroidism increases fertility prospects. Regular physical examinations (including Pap smears) help to detect early signs of infections or abnormalities. Sexually transmitted diseases can be prevented by abstinence from sex or the practice of “safer sex” strategies for people having multiple sex partners, including

mutual monogamy, non-penetrative sex, and the correct and consistent use of barrier contraceptive methods, particularly latex male condoms and polyurethane vaginal sheath (female condom). Prompt treatment of STDs.

- c. **Not delaying parenthood:** Fertility starts to decline after age 27 and drops at a somewhat greater rate after age 35. Women whose biological mothers had unusual or abnormal issues related to achieving pregnancy may be at particular risk of premature menopause that can be mitigated by not delaying parenthood.

#### • Treatment

Preconception medical care and counseling is advisable for all those planning a pregnancy failure of which the couple may choose to remain childless or consider adoption, or non-spousal sperm options.

Treatment modalities for infertility include:

1. Weight reducing drugs: In obese anovulatory infertile women, a loss of 5-10 % of body weight had been discovered to be enough to restore reproductive functions in 55- 100% of women within 6 months.
2. Induction of ovulation using gonadotrophins, Human Menopausal Gonadotrophin (HMG).
3. Bromocriptine in hyperprolactinemic females.
4. Clomifene citrate-human menopausal gonadotrophin (CC-HMG) combination.
5. Hormone therapy (e.g., Perganol).
6. Surgical intervention.
7. Artificial Insemination (AI): AI may be achieved by intracervical or intrauterine insemination. It is performed in an ovulating woman with patent tubes.
8. In Vitro Fertilization (IVF): IVF could be used to treat women with damaged fallopian tubes and endometriosis or in cases of unexplained infertility. A standard IVF requires the presence of a functioning fallopian tube and the procedures include gamete intrafallopian transfer (GIFT), zygote intrafallopian transfer (ZIFT) or GIFT-ET which is a combination of GIFT and IVF.

#### CONCLUSION

Female infertility is the major cause of lack of reproducibility and conception. 25% of the couples are tracing this problem. Many reasons are sorted out for female infertility but through proper diagnosis and counseling for treatment of female infertility can be only ray of hope. Review reveals extensively all the major reasons and causes for infertility. All these problems can surely be sorted out to come out this problem. Female infertility can surely be treated with medicines, minor surgical operations, laparoscopic procedures, hormonal therapy and prevention of preconception failure. The review is helpful to all the scientific, medical researchers who can put efforts to put end to female infertility.

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