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Case Report

Infertility: A case study

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ABSTRACT

Infertility is a disease of the male or female reproductive system defined by the failure to achieve a pregnancy after 12 months or more of regular unprotected sexual intercourse. It affects millions of people of reproductive age worldwide. Fertility care encompasses the prevention, diagnosis and treatment of infertility. It is vital part of the nurse to offer psychological support to the couple and provide nursing Management based on the priority.

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1. Introduction

Around 48 million couples and 186 million individuals live with infertility globally. 1 in 7 couples need specialist help to conceive, including some couples who have conceived before. Prevalence of infertility has not changed although more couples are seeking help more than previously. Infertility can be primary or secondary. An estimated 1 in 10 women between the ages of 15 and 44 have trouble conceiving.¹

Although both women and men can experience infertility, women in a relationship with a man are often perceived to suffer from infertility, regardless of whether they are infertile or not. Infertility has significant negative social impacts on the lives of infertile couples and particularly women, who frequently experience violence, divorce, social stigma, emotional stress, depression, anxiety and low self-esteem.

1.1. Etiology

1 in 3 infertile women have a problem with the female reproductive system. 1 in 3 infertile men have a problem

with the male reproductive system.² In the female reproductive system, infertility may be caused by a range of abnormalities of the ovaries, uterus, fallopian tubes, and the endocrine system, defective transport and defective implantation like hormonal imbalance, congenital anomalies, fibroids and infection.³ In the male reproductive system, infertility may be caused by obstruction of the reproductive tract causing dysfunctionalities in the ejection of semen. hormonal disorders leading to abnormalities in hormones produced by the pituitary gland, hypothalamus and testicles. Testicular failure to produce sperm. Abnormal sperm function and quality.²

While assisted reproduction technologies (ART) have been available for more than three decades, with more than 5 million children born worldwide from ART interventions such as in vitro fertilization.

(IVF), these technologies are still largely unavailable, inaccessible and unaffordable particularly in low and middle-income countries (LMIC).⁴

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1.2. Diagnosis

1.2.1. For female

1. Pelvic exam: including a Pap smear to check for structural problems or signs of disease.
2. Blood test: A blood test can check hormone levels, including thyroid hormones
3. Transvaginal ultrasound: Doctor inserts an ultrasound wand into the vagina to look for problems with the reproductive system.
4. Hysteroscopy: inserting a thin, lighted tube (hysteroscope) into the vagina to examine the uterus
5. Saline sonohysterogram (SIS): filling the uterus with saline (sterilized salt water) and conducts a transvaginal ultrasound. A full uterus makes it easier to see inside the uterus.
6. Hysterosalpingogram (HSG): X-rays capture an injectable dye as it travels through the fallopian tubes. This test looks for blockages.
7. Laparoscopy: health provider inserts a laparoscope (thin tube with a camera) into a small abdominal incision. Female pelvic laparoscopy helps identify problems like endometriosis, uterine fibroids and scar tissue.

1.2.2. For males

These tests can help diagnose or rule out a male fertility problem:

1. Semen analysis: This test checks for problems with sperm, such as low sperm count and poor mobility. Some men need a needle biopsy to remove sperm from the testicles and test it. For most men, this is the only test that will be needed in the workup of infertility.
2. Blood test: A blood test can check testosterone, thyroid and other hormone levels. Genetic blood tests look for chromosomal abnormalities.
3. Scrotal ultrasound: An ultrasound of the scrotum identifies varicoceles or other testicular problems.^{2,5}

1.3. Treatment

1.3.1. Treatments for female infertility include

1. Medications: Fertility drugs change hormone levels to stimulate ovulation.
2. Surgery: Surgery can open blocked fallopian tubes and remove uterine fibroids and polyps. Surgical treatment of endometriosis doubles a woman's chances of pregnancy.⁶

1.3.2. Treatments for male infertility include

1. Medications: Medications can raise testosterone or other hormone levels. There are also drugs for erectile dysfunction.
2. Surgery: Some men need surgery to open blockages in the tubes that store and carry sperm. Varicocele surgery

can make sperm healthier and can improve the odds of conception.

3. Fertility treatment options for all genders
4. Intrauterine insemination (IUI): A healthcare provider uses a long, thin tube to place sperm directly into the uterus.
5. In vitro fertilization (IVF): IVF is a type of assisted reproductive technology (ART). It involves harvesting the eggs at the end of the stimulation and placing sperm and eggs together in a lab dish. The sperm fertilize the eggs. A provider transfers one of the fertilized eggs (embryo) into the uterus.
6. Intracytoplasmic sperm injection (ICSI): This procedure is similar to IVF. An embryologist (highly specialized lab technician) directly injects a single sperm into each of the harvested eggs and then a provider transfers an embryo into the uterus.
7. Third-party ART: Couples may use donor eggs, donor sperm or donor embryos. Some couples need a gestational carrier or surrogate. This person agrees to carry and give birth to your baby.⁴

1.4. Prevention

1.4.1. Men and women can take these steps to protect their fertility, especially while trying to conceive

1. Eat a well-balanced diet and maintain a healthy weight.
2. Don't smoke, misuse drugs or drink excessively.
3. Get treated for STDs.
4. Limit exposure to toxins.
5. Stay physically active, but don't overdo exercise.

1.5. Prognosis

Approximately 9 out of 10 couples get pregnant after undergoing fertility treatments. Success rates vary depending on the cause of infertility, the couple's ages and other factors. In general:

1. Each IUI attempt has a 20% success rate
2. An estimated 1 in 2 women under the age of 35 conceive with ART. That number drops to 1 in 30 women (3%) for women in their early to mid-40s.^{7,8}

2. Nursing management: A case study

A Case study of a female with infertility is discussed with consent from her. Mrs X, 32 years old was admitted in ante natal ward at Guwahati Medical College Hospital on 23-04-2020 with the chief complaints of not able to conceive pregnancy for last two years, irregular menstruation for three month, pain in lower abdomen for two weeks, weakness for two weeks. She had a history of miscarriage two years back. She has no past medical history except some cold and fever. In family history, her elder sister

also developed same complaint and she was found as first degree infertility on arrival, vital signs are stable. Hysterosalpingogram (HSG) was done and report shows that there is some blockage in the right fallopian tube. Chest X ray was also done and report shows normal findings.

2.1. Nursing diagnosis

Acute pain related to infertility treatment as evidenced by patient's facial expression and by her own verbalisation.

2.1.1. Expected outcome

The woman will be able to express decreased pain.

2.1.2. Nursing intervention

1. Assess the severity and duration of the pain.
2. Observed precipitating factors recurrence and progressive characteristics. The woman's pain level measured using Wong Baker's faces scale as 6.
3. Provided basic comfort measures (e.g. repositioning) and leisure activities (e.g. watching TV).
4. Advised her to talk to families, use distraction therapy as well as other methods of pain relief.
5. Administered analgesics (Tablet Diclofenac Sodium 50 mg BD as per Doctors prescription).

2.1.3. Evaluation

The woman expressed level of pain as 2 in Wong baker's pain scale and she was comfortable and ventilating her feelings with her family members.

2.2. Nursing diagnosis

Anxiety related to the disease process as evidenced by frequent asking of questions.

2.2.1. Expected outcome

The woman will express decreased anxiety

2.2.2. Nursing interventions:

1. Assessed the level of anxiety.
2. Assessed the degree of experience of pain and the current stage of knowledge
3. Provided information that is accurate and truthful.
4. Inform the family about supervision and treatment.
5. Encouraged the family to acknowledge the problem and express feelings.

2.2.3. Evaluation

The woman was happy and able to cope up with the condition.

2.3. Nursing diagnosis

Knowledge deficit related to treatment and prognosis as evidenced by frequent asking of question of disease.

2.3.1. Expected outcome

The woman will be able to understand the treatment procedure.

2.3.2. Nursing interventions:

1. Encouraged the woman to ask her doubts
2. Allowed her to express her feelings
3. Discussed with the woman about the treatment prognosis.
4. Encouraged woman to support herself physically and psychologically.

2.3.3. Evaluation

Woman understood the treatment process and cooperated well.

3. Conclusion

Generally worldwide it is estimated that 1 in 8 couples have problems in conceiving. Nearly 80% of couples achieve conception, if they so desire within 1 year of having regular intercourse with adequate frequency another 10% remain infertile by the end of third year. Infertility primarily refers to the biological ability of the person to contribute to conception. In both men and woman the fertility process is complex. Infertility problems are due to female as well as male infertility or combination of both. Although testing of testing in woman, it is equally important for the male partner to be tested at the same time.

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6. Conflicts of Interests

None

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