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Prevalence of Complications and their Associated Risk Factors in Female Reproductive System

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ABSTRACT

Introduction: Complications of the female reproductive system can occur as a result of disease in one of the many reproductive organs: the ovaries, the fallopian tubes, the uterus, the cervix, the vagina or the breast. During the reproductive years, these complications often present as altered menstruation, pelvic pain, or infertility.

Objective: This study is aimed to identify the prevalence of complications and their associated risk factors in female reproductive system.

Methods: A Prospective Observational study was conducted in an outpatient department of Gynaecology clinic at Warangal for a period of 6 months.260 participants were involved in the study. Women who have not conceived and ,women who are diagnosed with different types of complications seeking medical treatment in outpatient department of Gynecology was included in the study.Data was obtained by direct communicating with the patient which helped in data collection and consist of patient demographic details, past medication history, family history and social habits.

Results: Among 260 patients the prevalence rate of infertility is highest 38.8%, PCOD 25.7%, Ectopic pregnancy 14.6%, Endometriosis 10%, Menorrhagia 4.6%, Hydrosalpinx 3.07%,
PID 1.9% and uterine fibroids 1.1%

Conclusion: Proper attention to health and assessment at right time and taking appropriate treatment can reduce the complications and helps the women to lead a healthy life.

Keywords: Hysterectomy, Infertility, Intrauterine device, Obesity, PCOD, Pelvic Inflammatory disease

INTRODUCTION

INFERTILITY**:** Infertility is defined as failure to conceive after one year of regular unprotected sexual relationship. Infertility classified as primary, when there is no history of pregnancy having occurred, or secondary, when inability to conceive occurs after one or more successful pregnancies [1]. Risk factors for infertility are Endometriosis in endometriosis the pelvic anatomy is deformed and fertility is decreased through mechanical adhesion, such as pelvic adhesion. These adhesions cause damage to ovule release or selection, decrease sperm motility, and causing disruption in myometrium such as fertilization disorder and embryo transfer. PID is a serious condition where the upper part of the female reproductive system and its supporting structures become inflamed. Valid evidence also shows that

women with PID are at risk of ectopic pregnancy, fallopian tube infertility and chronic pelvic pain. There are many hormonal disorders that cause infertility. Hypothyroidism, hyperprolactinemia (high male hormone levels) and luteal phase defect (low progesterone) are a few examples of these disorders [2]. In women with the polycystic ovary syndrome, abdominal obesity may be co-responsible for the development of hyperandrogenism and associated chronic anovulation, the risk of subfecundity and infertility, conception rates, miscarriage rates, and pregnancy complications are increased in these women.

ECTOPIC PREGNANCY: A pregnancy that is not in the uterus. The fertilized egg settles and grows in any location other than the inner lining of the uterus. Risk factors for Ectopic pregnancy are Previous induced abortion, Pelvic inflammatory disease**,** Previous abdominopelvic surgery**,** Puerperal sepsis**,** Previous spontaneous abortion**,** Previous ectopic pregnancy and Intrauterine contraceptive device[3].

ENDOMETRIOSIS**:** Endometriosis is defined as the presence of endometrium in an abnormal or ectopic location. Menarche beginning at less than 11 years of age, as well as heavy and prolonged menses is risk factors for Endometriosis. These two factors increase the extra uterine environment's exposure to menstrual blood and endometriosis risk [4].

PID (PELVIC INFLAMMATORY DISEASE): Pelvic inflammatory disease (PID) is severe inflammation that results when vaginal and cervical infections spread into the uterus, fallopian tubes, ovaries, and surrounding tissues. Women who use an IUD as a form of birth control are at a greater risk for PID. This does not mean that IUDs cause PID, but that women who use them are more likely to develop the condition. History of STDs, especially gonorrhea and Chlamydia, Prior episodes of PID are also at risk of developing PID[5] .

HYDROSALPINX: Hydrosalpinx is a condition where the fallopian tube becomes obstructed and fills with fluid [6]. Endometriosis, Pelvic inflammatory disease (PID) Ruptured appendicitis, Abdominal surgery**,**Post hysterectomy are the risk factors for Hydrosalpinx.

UTERINE FIBROIDS **:**Uterine fibroids (also known as leiomyomas or myomas) are the commonest benign uterine tumors, with an estimated incidence of 20%–40% in women during their reproductive years **.** They are classified by their location relative to the layers of the uterus (as subserous, intramural, or submucous) and can be single or multiple**.**Risk factors for the development of uterine fibroids are early menarche, stress, parity and pregnancy [7].

MENORRHAGIA**:** Menorrhagia is defined as excessive cyclic uterine bleeding that occurs at regular intervals over several cycles, or prolonged bleeding that lasts for more than seven days**.** Increased age, Premenopausal leiomyomata, Endometrial polyps,Abnormalities of platelet function, such as von Willebrand's disease are the riskfactors for Menorrhagia[8] .

POLYCYSTIC OVARIAN SYNDROME **:** Polycystic Ovary Syndrome (PCOS) is a heterogeneous disorder. As one of the leading causes of anovulatory infertility.

PCOS is characterized by the presence of polycystic ovaries, menstrual irregularities, and clinical/biochemical hyperandrogenism. [9] Obesity is the major risk factor for PCOD**.** Obesity, increasing body weight, body fat accumulation, and insulin resistance elevate the risk of developing PCOS and exacerbating its clinical symptoms through complex and pathways, influencing androgenicity in women affected by the disease [10].

The age of weight gain may impact the development of insulin resistance. Obesity before menarche is associated with significantly higher androgen concentrations. This suggests that obesity associated with elevated ovarian androgen production may predispose adolescents to PCOS [9].

METHODS: A Prospective Observational study was conducted in Gynaecology outpatient department clinic for a period of 6 months.260 participants were involved in the study . Women who have not conceived and, women who are diagnosed with different types of complications seeking medical treatment in out patient department of Gynaecology were included in the study. Data was obtained by direct communicating with the patient and consisted of patient demographic details, past medication history, family history and social habits.

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RESULTS

Table 1: Prevalence of complications

Complications	Percentage
Infertility	38.8%
PCOD	25.7%
Ectopic pregnancy	14.6%
Endometriosis	10%
Menorrhagia	4.6%
Hydrosalpinx	3.07%
PID	1.9%
Uterine fibroids	1.1%

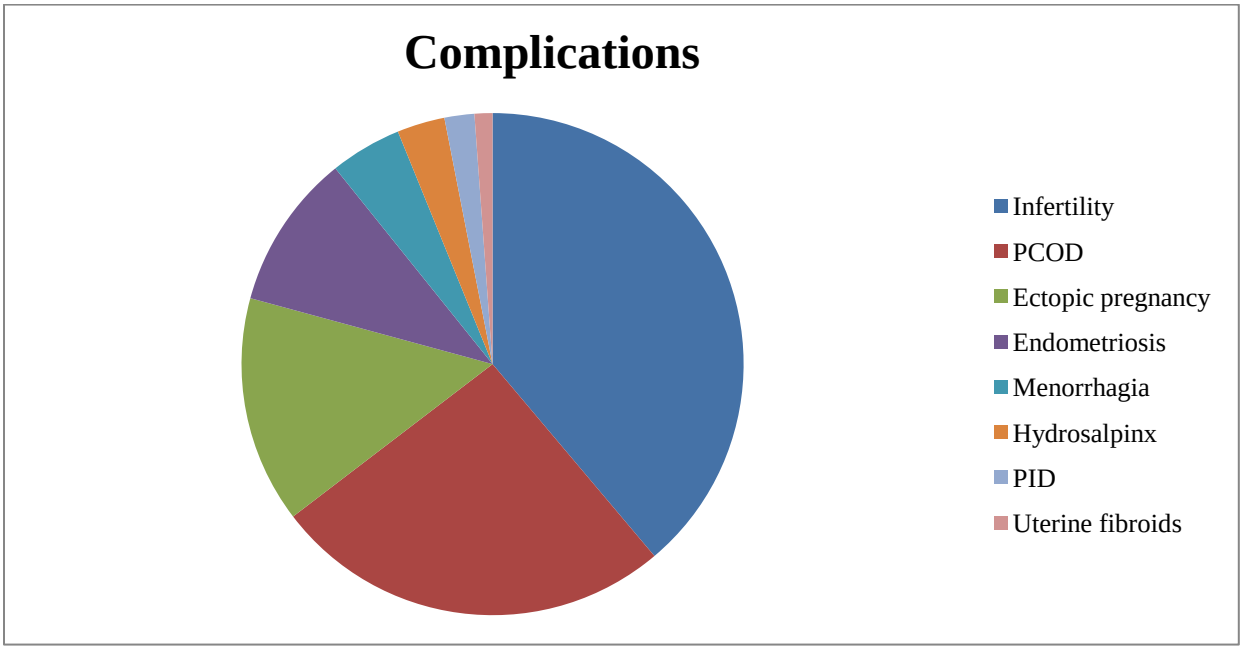

Table 2: Risk factors for Infertility

Risk factors	Percentage
PCOD	27%
Obesity	24%
Endometriosis	19%
Thyroid	16%
Fallopian tube defects	5.9%
PID	4.9%

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Table 3 : Risk factors for PCOD

Risk factors	Percentage
Obesity	55.2%
Hormonal imbalance	44.4%

Table 4: Risk factors for Ectopic pregnancy

Risk factors	Percentage
Previous Ectopic pregnancy	34.2%
IUD	26.3%
Previous induced abortion	13.1%
Spontaneous abortion	13.1%
PID	7.8%
Abdominal surgery	5.2%

Table 5 : Risk factors for PID

Risk factors	Percentage
IUD	60%
History of STD	40%

Table 6: Risk factors for Hydrosalpinx

Risk factors	Percentage
Post hysterectomy status	50 %
Abdominal surgery	25 %
PID	12.5 %
Endometriosis	12.5 %

Table 7: Risk factors for uterine fibroids

Risk factors	Percentage
Stress	66%
Pregnancy	33%

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Table 8: Risk factors for Menorrhagia

Risk factors	Percentage
Increased age	66.6%
Endometrial polyp	33.3%

Table 9: Risk factors for Endometriosis

Risk factors	Percentage
Menopause at an older age	46.1%
Heavy menstrual period longer than 7 days	38.4%
Early onset of menarche	15.3%

DISCUSSION:

PCOD is a major complication in women of all reproductive age which can lead to reproductive complications. In our study we have found that obesity is the primary risk factor that is leading to PCOD mainly in adolescent age group females. Obesity can be developed due to sedentary life style modifications where its impact is greater on female reproductive health. In patients suffering from PCOS, the incidence of obesity is somewhere between 50- 75%, which is higher than in the general population. Not only is obesity more common among women with PCOS, research suggests that obesity may exacerbate many of the manifestations of PCOS including androgen levels and insulin resistance. Obese women suffering from PCOS generally have higher serum androgen concentrations and a reduced response to fertility treatments when compared to lean women with PCOS [9] .

We found that 34.2% of previous induced abortion is the major risk factor leading to Ectopic pregnancy abortion .The relationship between prior abortions and ectopic pregnancy is explained by the postabortal infections leading to tubal damage. In the past, these post-abortal infections were due to illegal abortions which were not done under aseptic precautions and lack of proper antibiotic coverage [11].

IUD use is another risk factor for PID. At least two factors–the background prevalence of STI and the conditions under which the IUD procedure is performed influence the risk of PID. Disruption of the cervical mucus barrier by a foreign object that deposits bacteria directly into the uterine cavity is a well-established mechanism for infection [12].

Post hysterectomy status is a risk factor for Hydrosalpinx. In patients who have undergone partial hysterectomy, due to proximal occlusion of the fallopian tube resulting from surgery and distal occlusion secondary to possible pelvic adhesions in which the uterus is removed but the fallopian tubes and ovaries remain, hydrosalpinx may develop due to the potential occlusion of both the proximal and distal ends, leading to the accumulation of normal fallopian tube fluid [6].

Stress was seen to be a major risk factor for uterine fibroids. Stress affects adrenal activity that could raise progesterone levels, and thus increase fibroid development [13].

We also found many cases of Menorrhagia in elderly females who also had uterine fibroids. Endometrial polyps are risk factors for Menorrhagia [14].

Heavy menstrual flow for longer than 7 days and early onset of menarche are the risk factors for Endometriosis which was clearly seen in our study. These factors increase the extra uterine environment exposure to menstrual blood and thereby increase endometriosis risk. Women with heavier and longer menstrual flow or abnormal uterine bleeding also have been seen to be more susceptible to endometriosis, as these conditions increase the extra-

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uterine environment's exposure to endometrial tissue [4].

CONCLUSION

This study shows that there is lot of ignorance in female population with respect to their gynecological health and knowledge and awareness with regards to the various complications which might affect fertility and quality of life will go a long way in ensuring the health especially in the reproductive years of women. Such awareness will also reduce the cost of health care in the community.

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