

**PCOD IN FEMALE REPRODUCTIVE AGE- A REVIEW****Anjali C. S.\*<sup>1</sup>, Minnu George<sup>1</sup>, Prothibha Das<sup>2</sup> and Soji S.<sup>2</sup>**<sup>1</sup>Dept. of Pharmacy Practice. Malik Deenar College of Pharmacy. Kasaragod.<sup>2</sup>Dept. of Pharmaceutics, Malik Deenar College of Pharmacy. Kasaragod.**ABSTRACT**

Polycystic ovary syndrome (PCOS/PCOD) is a problem in which a woman's hormones are out of balance. If it is not treated, over time it can lead to serious health problems, such as Diabetes and Heart diseases. The PCOS can be largely increased in our world due to lack of awareness among young woman's and ignorance. Undiagnosed PCOS can lead to infertility. Between 5% and 10% of women of childbearing age (between 15 and 44) have PCOS. Most often women find out they have PCOS in their 2<sup>nd</sup> and 3<sup>rd</sup> decade of life, when they have problems getting pregnant and consult a physician. According to the study it has been found that the most affected age group is 15- 25

years. The studies reveal that in India one in five women suffer from PCOS problem and East India the number is 1 in 4. Another recent study revealed that about 18% of women in India, mostly from East, suffer from poly cystic ovarian syndrome (PCOS). With this knowledge one can reduce the rates of women's with PCOS and thereby reducing the rate of infertility in them. By giving effective patient counseling it is possible to provide a healthy future for the women.

**KEYWORDS:** PCOS (Polycystic ovary syndrome), PCOD (Polycystic ovary, infertility, pregnancy, reproductive age, amenorrhea, oligomenorrhea).

Polycystic ovary syndrome (PCOS/PCOD) is a problem in which a woman's hormones are out of balance. It can cause problems with their periods and make it difficult to get pregnant. If it is not treated, over time it can lead to serious health problems, such as Diabetes and Heart disease. Most women with PCOS grow many small cysts on their ovaries. That is why it is called polycystic ovary syndrome. The cysts are not harmful but lead to hormone

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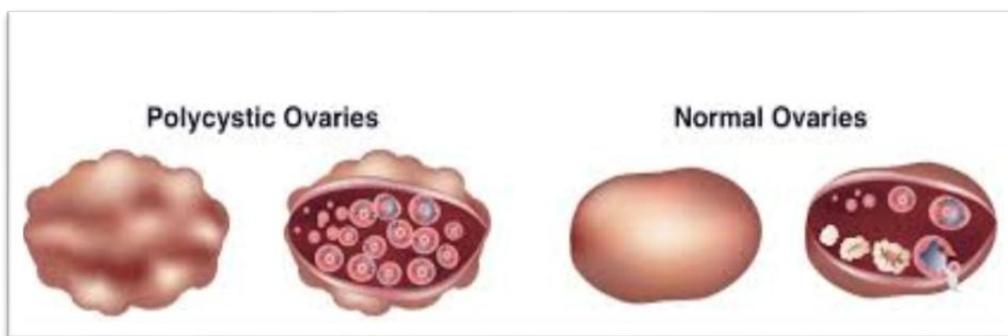
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imbalances. Early diagnosis and treatment can help control the symptoms and prevent long term problems.<sup>[1]</sup>

In a normal menstrual cycle with ovulation, a mature follicle- which is also a cystic structure – develops. The size of a mature follicle that is ready to ovulate is about 18 to 28 mm in diameter. The basic difference between polycystic and normal ovaries is that although the polycystic ovaries contain many small antral follicles with eggs in them, the follicles do not develop and mature properly- so there is no ovulation. Since women with polycystic ovaries do not ovulate regularly, they do not get regular menstrual periods.<sup>[2,3]</sup>

Women with polycystic ovaries often have an excess amount of the male hormones testosterone and androstenedione, result in high testosterone levels in the blood this leads to increased facial and body hair growth.<sup>[1,4,5]</sup>



**Fig 1: Cells Showing Poly Cystic Ovary and Normal Ovaries.**

### **PREVALENCE OF PCOS**

The exact prevalence of PCOS is not known as the syndrome is not defined precisely and depends mainly on the choice of diagnostic criteria. WHO estimates that it affects 116 million woman worldwide as of 2010 (3.4 % of women). One community – based prevalence study using the Rotterdam criteria found that about 18% of women had PCOS and that 70% of them were previously undiagnosed. Ultrasonographic findings of poly cystic ovaries are found in 8-25% of normal women.14% women on oral contraceptives were found to have polycystic ovaries.<sup>[6]</sup>

In Indian scenario the prevalence of menstrual dysfunction in women with PCOS is 14.6-22.8% and irregularities range from amenorrhea to menorrhagia. Insulin resistance is central to the pathogenesis of PCOS and Indians are known to have high prevalence of insulin resistance, so the prevalence of PCOS is expected to be high in the Indian population.<sup>[8]</sup>

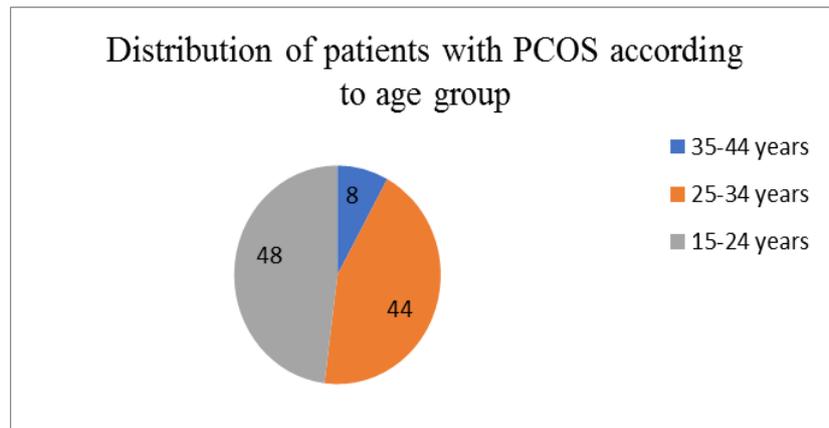
In India, the prevalence is gradually increasing. It was published that PCOS becoming 'epidemic' in Bangalore city, because of the lifestyle that people have adopted (Indian Express in 2013). Increased LH pulse amplitude and frequency have been demonstrated in women and adolescents with PCOS, suggesting an aberrant pattern of hypothalamic gonadotropin-releasing hormone (GnRH) secretion as a causative factor.<sup>[11]</sup>

PCOS produce symptoms in approximately 5-10% of women of reproductive age. It is thought to be one of the leading causes of female subfertility and pregnancy complications. Major symptoms include amenorrhea, oligomenorrhea, dysfunctional uterine bleeding, acne, hirsutism, obesity, etc. PCOS is a major health concern because patients with PCOS are at increased risk of infertility, pregnancy loss, obesity, cardiovascular disorders, diabetes mellitus, obstructive sleep apnea, depression, nonalcoholic fatty liver disease, endometrial hyperplasia and endometrial carcinoma, etc. Infertility occurs in 75% due to anovulation. Metabolic syndrome like diabetes in up to 43.6%, depression in 40%, increase risk of early spontaneous abortion, preterm delivery, hypertensive disorders, gestational diabetes and perinatal mortality in 30-50% and increased risk of multiple gestations from infertility treatment.<sup>[9]</sup>

According to a prospective study conducted on 460 girls aged 15-18 years in Andhra Pradesh, South India, the prevalence of PCOS was found to be 9.13% in adolescents. According to an ovarian Ultrasonographic study, the prevalence has been reported to be 4.0 – 11.9% in the community from 3 different countries. In one community based prevalence study, using the Rotterdam criteria it was found that about 18% of women had PCOS and that 70% of them were previously undiagnosed.<sup>[10]</sup>

#### **AGE- WISE PREVALENCE**

On age distribution analysis, it was observed that PCOS was prevalent throughout reproductive age. No patient of PCOS was found beyond 45 years of age. The maximum prevalence (that is 48%) was found in the age group of 15 – 24 years.<sup>[8]</sup>



**Fig 2: Distribution of Patients with PCOS According To Age Group.**

### Signs and Symptoms

- **Menstrual disorders:** PCOS mostly produces oligomenorrhea or amenorrhea
- **Infertility:** This generally results directly from chronic anovulation
- **High levels of masculinizing hormones:** it is also known as hyperandrogenism. The common signs are acne and hirsutism, but it may produce hypermenorrhea, androgenic alopecia or other symptoms.
- **Metabolic syndrome:** This appears as a tendency towards central obesity and other symptoms associated with insulin resistance. Serum insulin, insulin resistance, and homocysteine levels are higher in women with PCOS.<sup>[9]</sup>

### FOOD CAUSES PCOS

- **SUGARY FOODS:** Many PCOS sufferers have higher insulin levels than normal. This can cause difficulty losing weight. Eating fewer sugars and simple carbohydrate can help them to lose weight and lower the risk of diabetes.
- **FOODS MADE WITH WHITE FLOUR:** White flour is a simple carbohydrate that most PCOS sufferers should avoid. Breads, bagels, cereals, muffins, cupcakes, and other baked goods are common source of white flour.
- **SODIUM- RICH FOODS:** PCOS sufferers should limit their sodium intake to a maximum of 2,300mg/day or to be cautious 1,500mg daily. Skip high sodium foods like smoked meats, canned vegetables, chips, sauces, salted nuts, and canned soups.
- **FATTY FOODS:** PCOS sufferers should avoid saturated fats, meats, fat-free dairy, fat-free dressing, white meat and skin less poultry. Instead of frying food, steam, broil, bake, grill or microwave them to avoid excess oil.<sup>[6,7]</sup>

## PCOS AND PREGNANCY

Women with PCOS are at higher risk for certain problems or complication during pregnancy. In addition, infants born to mother with PCOS are at higher risk of spending time in the neonatal intensive care unit or dying before, during, or right after birth. Complications of pregnancy associated with PCOS, such as preeclampsia, could be a reason for these risks.<sup>[12]</sup>

### Pregnancy Complications Related to Pcos Include

- **Miscarriage or early loss of pregnancy:** Women with PCOS are three times as likely to miscarry in the early months of pregnancy as are women without PCOS.
- **K diabetes:** This is a type of diabetes that only pregnant woman get. It is treatable and, if controlled, does not cause significant problems for the mother or fetus.
- **Preeclampsia:** It is a sudden increase in blood pressure after 12<sup>th</sup> week of pregnancy, can affect the mother's kidneys, liver, and brain. If left untreated, preeclampsia can turn into eclampsia. Eclampsia can cause organ damage, seizures, and even death.
- **Preterm birth:** Infants are considered "preterm" if they are delivered before 37 weeks of pregnancy.
- **Cesarean or c-section delivery:** Pregnant women with PCOS are more likely to have c-sections. Because c-section delivery is a surgical procedure, recovery can take longer than recovery from vaginal birth and can carry risks for both mother and infant.<sup>[1,4,13]</sup>

### Lifestyle Modification of A Patient With Pcos

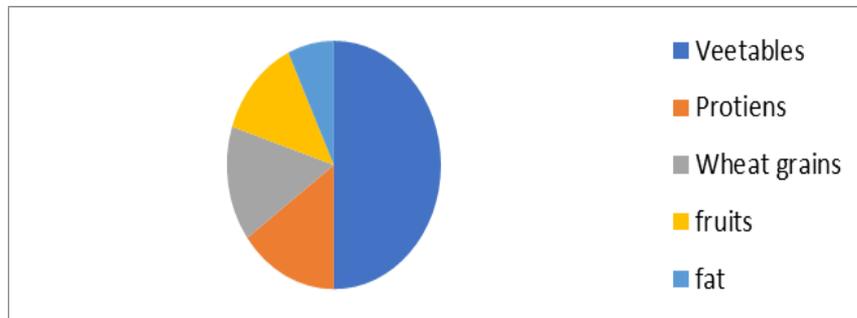
A healthier lifestyle is considered the first step to managing PCOS. This starts with healthy diet, regular physical activity and maintaining a healthy weight.

PCOS is closely associated with obesity, in fact; the majority of women with PCOS are significantly overweight. Obesity contributes to the hormone imbalances of PCOS, worsening irregular bleeding and unwanted hair growth.<sup>[5,7,15]</sup>

The cysts that appear in PCOS can be detected by ultrasound. They usually remain small, do not require surgical removal, and are not associated with ovarian cancer. And perhaps the best news of all is that for many obese women with PCOS, just losing 5% to 10% of their body weight will allow them to resume normal, regular ovulation. Weight reduction is also associated with reduced levels of androgen, improved response to insulin, better cholesterol levels, and lowered risk for heart disease.<sup>[13,14]</sup>

### Pcos Diet Plan

One of the most common side-effects of this health condition is uncontrolled weight gain. But a typical “Low-Fat” weight loss diet like the simple 1200 calorie diet plan is not effective enough to promote weight loss in women suffering from PCOS because in this case, weight gain is a result of high insulin levels that promotes fat storage in the body.<sup>[4,5,10]</sup>



**Fig: PCOD Diet Guideline.**

### Home Remedies To Cure Pcos

Individuals can add the below mentioned foods in the diet.<sup>[4,5,8]</sup>

Methi, Flaxseeds, Cinnamon (Dalchini), Holy basil (Tulsi), Honey, Bitter gourd (Karela), Indian Gooseberry (Amla).

### Pcos Prevention In Young Females

Regular exercise, healthy food, and weight control are the key treatments for PCOD.

- ❖ Try to fit in moderate activity and / or vigorous activity often. Walking is a great exercise that most people can do.
- ❖ Eat heart healthy foods. This includes lots of vegetables, fruits, nuts, beans, and whole grains. It limits foods that are high in saturated fat, such as meats, cheeses, and fried foods.
- ❖ Most women who have PCOD can benefit from losing weight. Even losing 10 lb. (4.5 kg) may help get your hormones in balance and regulate the menstrual cycle.
- ❖ Quit smoking.
- ❖ Physician also may prescribe birth control pills to reduce symptoms, Metformin helps to regulate menstrual cycles, or fertility medicines if a woman having trouble getting pregnant.
- ❖ It may take a while for treatments to help with symptoms such as facial hair or acne. Patients can use over the counter or prescription medicines for acne.

- ❖ It can be hard to, deal with having PCOD. If the patients feeling sad or depressed, it may help to talk to a counselor or to other women who have PCOD or with the similar clinical conditions.<sup>[10,12,13]</sup>

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