

## STUDY ON THE COMPLICATIONS A PREGNANT WOMEN FACES WHO SUFFERS FROM POLYCYSTIC OVARY SYNDROME (PCOS)

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### Abstract

Polycystic ovary syndrome affects 6 to 15% of reproductive age women worldwide. Women diagnosed with polycystic ovary syndrome (PCOS) have focused on diagnosis, menstrual cycle abnormalities, hirsutism and infertility. It is associated with increased risk of miscarriage, gestational diabetes mellitus (GDM), hypertensive disorders of pregnancy, preeclampsia, preterm delivery, and birth of small for gestational age infant. This review aims to summarize current knowledge regarding the clinical and pathophysiological features of pregnancy and children in women with PCOS.

**Keywords:** PCOS, pregnancy, GDM, Preeclampsia.

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### INTRODUCTION

Polycystic ovary syndrome (PCOS) affects 6%-15% of women of reproductive age worldwide and is characterized by hyperandrogenism, ovulatory dysfunction and polycystic ovarian morphology.<sup>1</sup> Polycystic ovary syndrome (PCOS) is a condition in which the ovaries produce an abnormal amount of androgens, male sex hormones that are usually present in women in small amounts. The name polycystic ovary syndrome describes the numerous small cysts (fluid-filled sacs) that form in the ovaries. Polycystic ovaries contain a large number of harmless follicles that are up to 8mm (approximately 0.3in) in size. The reproductive issues with PCOS mainly start with anovulatory cycles leading to subfertility, irregular periods, hirsutism and

weight gain. Post conception, PCOS women are at increased risk for early pregnancy loss (EPL). After having successfully passed the first trimester, they commonly encounter later pregnancy complications like gestational diabetes mellitus (GDM), pregnancy-induced hypertension (PIH), preeclampsia, preterm delivery, and birth of small for gestational age (SGA) infant.[2] It is estimated that between five to 10 percent of U.S. women of childbearing age have PCOS. That's about 5 million women, which makes the condition one of the most common hormonal endocrine disorders among women of reproductive age. Overweight is also a major cause. Weight loss can be very effective in lessening many of the health conditions associated with PCOS. Sometimes weight loss alone can restore hormone level

to normal, causes many of the symptoms to disappear or become less severe. Healthy food habits and exercise helps to combat the weight gain. Research has suggested that PCOS may be related to increased insulin production. PCOS seems to run in families, too, so if someone in the family has it, they might be more likely to develop it. India has witnessed about 30% rise in polycystic ovarian syndrome (PCOS) cases in the last couple of years. Lack of knowledge and lifestyle changes are considered to be the major factor leading to this phenomenon. There is a need to increase awareness among women so as to avoid major cases of fertility problems in the future.

### **POLYCYSTIC OVARY AND PREGNANCY**

There is an increased risk of pregnancy complications in PCOS women. In a study, women with PCOS were more often obese and more commonly used assisted reproductive technology (ART) such as ivf, than women without such a diagnosis.[3] PCOS was strongly associated with preeclampsia in which the BP was >140/90mmHg with protein present in urine and very preterm birth and the risk of gestational diabetes was more than doubled. Infants born to mothers with PCOS were more prone to be large for gestational age and were at increased risk of meconium aspiration and having a low Apgar score (<7) at five minutes.

### **POLYCYSTIC OVARY AND OBESITY**

Women with PCOS have a high prevalence of obesity which can detrimentally affect the pregnancy outcome. The results of this study indicated that the high risk of spontaneous abortion in women with PCOS was related to their high prevalence of obesity and the treatment type they received, as often dictated by their aetiology. The findings of the current study confirm that the incidence of spontaneous abortion increases with increasing BMI. Obesity, therefore, needs to be considered as a confounding factor, given

its higher prevalence in PCOS than non-PCOS women.[4]

### **POLYCYSTIC OVARY AND GESTATIONAL DIABETES**

Gestational diabetes mellitus is the most commonly described pregnancy complication in women with PCOS. GDM complicates 42 to 51% of PCOS pregnancies. Its early diagnosis is crucial and its careful treatment significantly reduces the incidence of related maternal and neonatal complications. The risk of GDM is about three times higher in women with PCOS. PCOS is a condition that causes hormonal imbalances and can interfere with ovulation. Often, women who have PCOS struggle with fertility, although getting pregnant is not impossible. Women who do get pregnant with the condition, however, should be aware that the risk for gestational diabetes is higher. This is because this condition is associated with high blood sugar and insulin resistance. Because of this risk, pregnant women with PCOS may be tested for gestational diabetes earlier than at the routine 23-28 weeks.[5]

### **POLYCYSTIC OVARY AND PREGNANCY INDUCED HYPERTENSION**

Pregnancy-induced hypertension (PIH) occurs in 8% of PCOS pregnancies. It includes PIH, defined as new-onset of hypertension in pregnancy after 20 weeks of gestation, and preeclampsia, defined as PIH with proteinuria. Preeclampsia sometimes develops without any symptoms. High blood pressure may develop slowly, or it may have a sudden onset. Monitoring blood pressure is an important part of prenatal care because the first sign of preeclampsia is commonly a rise in blood pressure. Blood pressure that exceeds 140/90 millimeters of mercury (mm Hg) or greater — documented on two occasions, at least four hours apart — is abnormal.

### **POLYCYSTIC OVARY AND PRETERM LABOR**

Preterm births complicate 6 to 15% of pregnancies of PCOS women. It may be associated with confounding factor of multiple pregnancies induced as a result of use of various ovulation induction regimens in PCOS women. Preeclampsia itself is a risk factor for preterm deliveries. Women with polycystic ovary syndrome (PCOS) have increased risk of pregnancy complications, including preterm birth before 37 weeks. However, if this increased risk also includes extremely preterm births (<28 weeks) is unknown. Such information is important to identify women at risk and tailor antenatal care, since child morbidity and mortality become more prevalent with increasing prematurity.[7]

## 2. CRITERIA FOR SELECTION

### Inclusion criteria :

- Women with age between 20-35 age. This age group was selected as maximum pregnancy cases were seen in this case only without other health problems.
- Pregnant women
- Polycystic ovaries on transvaginal ultrasound,
- Oligomenorrhoea or amenorrhoea,
- Signs of hyperandrogenism (elevated testosterone level, elevated androgen level)

### Exclusion criteria:

- Women above 35 and below 20 age. The women below 20 visited were mostly non pregnant and above 35 were having a known history diseases.
- Non-pregnant women
- Women with known history of diabetes or other serious illness.
- Women with diagnosed adrenal hyperplasia, androgen secreting neoplasm, Thyroid hormone related infertility.
- Women with normal case history.

### Withdrawal Criteria:

- Women attending the hospital were not regular, i.e. they were not available on their routine check-up dates.
- Women who passed away.
- Women who shifted to another hospital for their treatment.

## 3. OBSERVATION

In a study carried out with 65 pregnant women suffering from PCOS, it was found that the risk of hypertension induced due to pregnancy, preeclampsia, preterm delivery, gestational diabetes and mischarge rates increases. But regular follow up to doctor and routine examination and check up helps to improve and minimise the PCOS complications.

### Patient vs BMI

BMI	SUBJECTS
Underweight	11
Normal	29
Overweight	20
Obese	5

### Patient vs Causes of complications

CAUSES	NO.OF SUBJECTS
Anaemia	8
Diabetes	12
Hypertension	7
Previous miscarriage	2
Thyroid	5
Preterm birth	6

### Patient vs Birth outcomes

BIRTH OUTCOMES	NO. OF SUBJECT
Preterm birth	3
Congenital disorder	0
Normal	35

Miscarriage	2
Apgar Score	8
Twins	3

#### Patient vs Overall examination status

EXAMINATION STATUS	NO. OF SUBJECT
All good	38
GDM	9
Hypertension	2

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