



A REVIEW ON PCOD IN PREGNANT WOMEN

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Abstract

During the pregnancy time most of the pregnancy women suffering with various disorders. On that polycystic ovary syndrome (PCOS) plays a major role. If a pregnant women having polycystic ovary syndrome (PCOS) it shows various pathophysiological changes in pregnant women. According to world health organization PCOS is the commonest cause of an ovulatory infertility.

Key Words: PCOS, Infertility, Hyperandrogenism, Ovulatory dysfunction, Hyperplasia, Hyperinsulinemia, Endocrinopathy, Pre-eclampsia, Miscarriage, Gestational diabetes mellitus, Cardio metabolic risk, Multiple pregnancies, Ovarian hyperstimulation syndrome.

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INTRODUCTION

Polycystic ovary syndrome (PCOS) affects 5%-20% of women of reproductive age worldwide and is characterized by hyperandrogenism, ovulatory dysfunction and polycystic ovarian morphology¹. The 2003 Rotterdam criteria are currently the internationally accepted criteria by which PCOS is diagnosed. Patients are diagnosed with PCOS when two out of three criteria are satisfied: oligo- ovulation or anovulation, clinical and/or the presence of polycystic ovaries(PCO) and exclusion of other etiologies(congenital adrenal hyperplasia and androgen secreting tumors).² There also exists the androgen excess and PCOS society definition which recommends that clinical or biochemical hyperandrogenism should be essential for diagnosis, but also ovulatory dysfunction is required in the form of either oligo-anovulation or PCO.³ The pathophysiology of PCOS is multifactorial, and it is believed that a genetic predisposition exists that is exacerbated by excess adiposity. It is thought that the pathophysiology of PCOS involves the interaction between abnormal ovarian morphology, due to excess androgen production by the PCO-hyperinsulinemia, and elevated luteinizing hormone (LH) levels. ⁴According to the world health organization(WHO), PCOS is the commonest cause of an ovulatory infertility.

Polycystic ovary syndrome is one of the most common endocrine disorders, affecting about 5-15% of women of reproductive age.⁶ Reported OHSS rates in the literature for women with PCOS who conceive after IVF are up to 75% compared to women without PCOS being in the order of 2.7%. Prevalence estimates for PCOS as defined by the NIH/NICHD criteria indicate that PCOS is a common endocrinopathy affecting 4-8% of women of reproductive age of 24-28⁷.

ETIOLOGY

Currently there is no cause for PCOS. However, there are associations with excess insulin, low grade inflammation and genetics. Doctors don't know exactly what causes PCOS. They believe that high levels of male hormones prevent the ovaries from producing hormones and making eggs normal⁸.

GENES

Studies show that PCOS runs in families. It's likely that many genes not just one contribute to the condition⁹.

INSULIN RESISTANCE

Upto 70% of women with PCOS have insulin resistance meaning that their cells can't use insulin properly. When cells can't use insulin properly, the body demand for insulin increases. The pancreas makes more insulin to compensate extra insulin triggers ovaries to produce more male hormones¹⁰.

INFLAMMATION

Women with PCOS often have increased levels of inflammation in their body. Being overweight can also contribute to inflammation. Studies have linked excess inflammation to higher androgen levels¹¹.

COMPLICATIONS

Many studies have been performed comparing pregnancy outcome in women with PCOS vs controls.

1. MULTIPLE PREGNANCIES

Multiple pregnancies are the most important cause of the increased perinatal morbidity observed following fertility treatments, with special regard to women with PCOS affected by an ovulatory infertility. Most of the risk of pregnancy complications is due to preterm delivery rates of multiple births¹².

2. MISCARRIAGE

It is still debated whether women with PCOS have an increased risk of miscarriage compared to women without fertility disorder¹³.

3.PREGNANCY INDUCED HYPERTENSION AND PRE-ECLAMPSIA:

All three meta-analysis reported 3-4 times increased risk of pregnancy induced hypertension in women with PCOS. Women with PCOS also represent 3-4 fold increased risk of developing pre-eclampsia during pregnancy¹⁴.

Main data synthesis from three published meta-analysis on pregnancy complications in women with PCOS

OUTCOME	BOOMSMA <i>et al.</i> (2006)	KJERULFF <i>et al.</i> (2011)	QIN <i>et al.</i> (2013)
Maternal			
PIH	3.67(1.98-6.81)	4.07(2.75-6.02)	3.07(1.82-5.18)
PE	3.47(1.95-6.17)	4.23(2.77-6.46)	3.28(2.06-5.22)
GDM	2.94(1.70-5.08)	2.82(1.94-4.11)	2.81(1.99-3.98)
Preterm delivery	1.75(1.16-2.62)	2.20(1.59-3.04)	1.34(0.56-3.23)
Neonatal			
SGA	1.16(0.31-5.12)	2.62(1.35-5.10)	-
LGA	-	1.56(0.92-2.64)	-
Macrosomia	1.13(0.73-1.75)	-	-

4. GESTATIONAL DIABETES MELLITUS

It is the most commonly described pregnancy complication in women with PCOS. Its early diagnosis is crucial and its careful treatment significantly reduce the incidence of related maternal and neonatal complications. The risk of GDM is about 3 times higher in women with PCOS¹⁵.

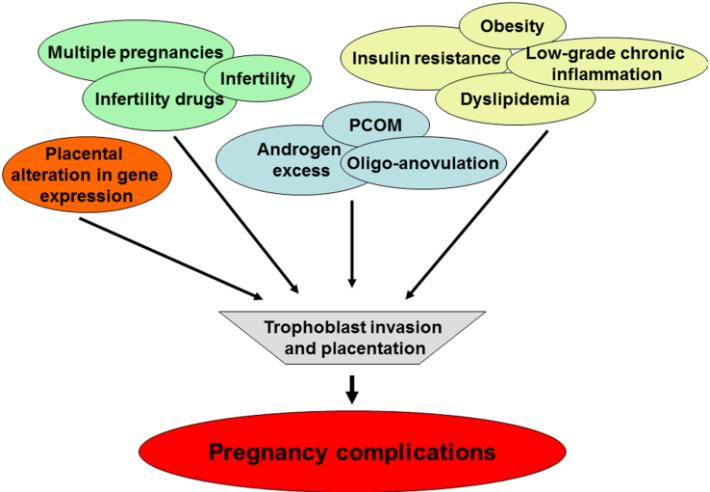
OTHER MATERNAL COMPLICATIONS

Data on the risk of delivery by caesarean section in women with PCOS are controversial. One meta-analysis reported a significantly higher caesarean delivery risk whereas the other two meta-analysis demonstrated no significant influence of PCOS on the risk of caesarean section. The risk of assisted vaginal delivery was not higher in women with PCOS¹⁶.

OFFSPRING HEALTH

In general children born to mothers with PCOS are considered to be at increased risk of developing endocrinological and cardiovascular dysfunction.¹⁷ Increased cardiometabolic risk in offspring of women with PCOS is thought to be due to both genetic and environmental factors starting with the intrauterine environment. Women with PCOS are considered to have a reduced breast feeding rate¹⁸ that resulted significantly related to mid pregnancy androgen levels. Daughters of women with PCOS and increased testosterone levels before and during puberty.¹⁹ At the moment, the impact of being born to a mother with PCOS on long-term child health is still unclear. However, risk factors for adverse child health, including excess preconception maternal weight, excess gestational weight gain and GDM suggest child health may be adversely affected in PCOS.

FIG: PATHOPHYSIOLOGICAL CONSIDERATIONS REGARDING PCOS PREGNANCY COMPLICATIONS



MANAGEMENT

PCOS is the most common cause of female infertility affected an estimated 5 million women.

Eating a healthy diet is really important for women with PCOS. Most women will be able to conceive with a combination of life style changes and fertility drugs.

Many women with PCOS struggle with obesity. One of the main reasons women with PCOS can't conceive is they don't ovulate regularly. Losing some of the extra weight may bring back ovulation.

If the patient is insulin resistant giving diabetes drug metformin can treat the condition.²⁰

CLOMID TREATMENT

Clomid is the most commonly used fertility drug and also the most commonly used treatment for women with PCOS. Some women with PCOS will experience clomid resistance then combination of metformin and clomid may help beat clomid resistance. If this is not successful, drug letrozole with brand name femara may be given²¹. If clomid or letrozole is not successful, the next step is injectable fertility drugs or gonadotropins. Gonadotropins are made of hormones FSH, LH or a combination of both. Brand names you may recognize are Gonal-f, Follistim, Ovidrel, Bravelle²². One of the possible risks of gonadotrophins is ovarian hyperstimulation syndrome(OHSS).

If gonadotropins are not successful the next step is IVF(Invitrofertilization) or IVM(Invitro maturation)²³.

CONCLUSION

PCOS commonly affects women of reproductive age so appropriate advice regarding the impact of lifestyle, obesity and fertility should be offered. Women with PCOS are at increased risk of adverse pregnancy and birth outcomes and increased surveillance during pregnancy. Adequate support should be offered to institute life long life style modifications aiming for a target of healthy weight. Women should be informed of the increased risks of pregnancy complications and the potential for adverse outcomes for their offspring. The causes of PCOS are unclear, but early diagnosis can help relieve symptoms and reduce the risk of complications.

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