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GENERAL

PCOD (Polycystic Ovarian Disease)

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Periods- Hearing this word brings a wave of familiarity, doesn?t it? For women, it?s a defining aspect of life, and many of us can vividly recall how we felt when that first-period cramp hit. Were you Overwhelmed? Nervous? Did you know about it beforehand or did the first experience catch you off guard and scare you to your core?

Everybody knows about the menstrual cycle which every woman experiences throughout her reproductive age and even men aren?t strangers to the mood swings that accompany them. But let?s shift our conversation to something less talked about but equally significant: PCOD (Polycystic Ovarian Disease). PCOD is an endocrinal problem, faced by **1** to **2** women out of every **10** in their reproductive age group.

HORMONES!! Those infamous chemical components in your body are the prime cause of those mood swings that make you crave those chocolates. When they go out of balance, they don?t just mess with your moods but can disrupt your overall health.

PCOD affects fertility up to an extent but with timely diagnosis and healthy lifestyle maintenance, many women with PCOD successfully conceive with healthy pregnancy.

Let's dig deeper into this subject to gain a clearer understanding of this critical topic. Whether you have PCOD, suspect you might have it, or simply just want to understand things better. We believe men should be more informed about women?s health issues such as PCOS. Let's create a space to discuss this in detail and aware people to empower every woman going through this.

What exactly is PCOD?

PCOD also known as PCOS (Polycystic Ovarian Syndrome) is more than just irregular periods. It?s a complex interplay of hormonal imbalances that can affect your fertility, metabolism, and overall health. It arises from a combination of genetic, lifestyle, and environmental factors.

The ovaries are the primary reproductive organs of a female and are responsible for the production of several hormones such as estrogen, progesterone, relaxin and inhibin responsible for controlling reproductive activity in a female. However, in PCOD, hormonal balance is disrupted where ovaries do not release eggs regularly, leading to a cascade of complications.

What happens in PCOD?

PCOS disrupts the hormone levels that impact the reproductive health of the female in many ways. Some of the things a female with PCOD faces are as follows:

1. **Increased Androgens**: The androgen level (testosterone) of women with PCOS is higher than normal. This disrupts the normal balance of female hormones produced by the ovaries (Estrogen, Progesterone, Inhibin, Relaxin, etc.). Hence, hinders the ovulation process. Due to excess androgen in the body, female with PCOD shows symptoms like excess hair growth and acne.

2. **Irregular Ovulation**: As the ovulation is irregular, progesterone level decreases, causing irregular menstrual cycles or missed periods.

3. **Increased insulin and LH**: Insulin and Luteinizing hormone (LH) are generally high in women with PCOS, which worsens androgen production, making the woman gain weight.

4. **Anovulation**: The hormonal imbalance interferes with the release of eggs from the ovaries called anovulation. The formation of immature follicles forms cysts inside the ovaries called polycystic ovaries.

5. **Insulin Resistance**: Metabolism in PCOD doesn?t work properly due to insulin resistance. In insulin resistance, cells cannot uptake glucose from the blood resulting in increased blood sugar levels. In response, the pancreas releases more insulin to force cells to absorb glucose. Thus, this excess insulin stimulates cells present in the ovaries to produce testosterone intensifying the symptoms.

Mental health impact of PCOD

In today?s world, it?s crucial to recognize that health is not limited to physical health; mental health should be addressed as well. PCOD is more than just a woman?s body, it's better to understand that the emotional toll it takes can be overwhelming. Alongside physical issues women with PCOD face, heightened levels of stress, anxiety and low self-esteem are some of the additional symptoms. Acknowledgement of such issues needs solutions which include lifestyle modifications, stress management and following a healthy diet plan.

What are the Symptoms of PCOD

Symptoms related to PCOD are diverse and vary from person to person. Symptoms of PCOD are as follows:

1. **Irregular Periods**: Caused by anovulation.

2. **Hirsutism**: Excessive hair growth on the face, chest, and back due to high androgen levels.

3. **Acne**: Stimulated by high levels of androgens.

4. **Weight gain**: Caused due to insulin resistance and hormonal imbalances.

5. **Polycystic Ovaries**: Ultrasound examination also exposes small cysts present in the ovaries, resulting in enlarged ovaries, which is a prime symptom of PCOD.

What causes PCOD?

PCOS can be caused by many aspects. Though not a very clear perspective is gained about the cause of it. So, throughout the years experts in this field, sharing their expertise for the same discussed and debated this topic and came up with conclusions mentioned below:

1. Genetic Factors: PCOS often runs in the family, this suggests that PCOS can be a hereditary component. Genes involved in insulin production and ovarian function suggest the role of genetics in PCOD.

2. Hormonal imbalances

? **Elevated Androgen Levels:** Excess androgen levels disrupt the normal ovarian function, where ovulation gets interfered causing symptoms like acne, facial hairs, and male pattern baldness

? **Increased Luteinizing Hormone (LH):** Overstimulation of ovaries causes excess androgen production

? **Low Progesterone Levels:** Irregular ovulation causes low progesterone levels resulting in affecting the menstrual cycle of the female.

3. Insulin Resistance: High insulin levels stimulate ovaries to produce androgens contributing to weight gain.

4. Inflammation: Chronic inflammation is common in women with PCOS. Inflammation stimulates the symptoms of PCOS

5. Lifestyle and Environmental factors: Lifestyle and the environment you are living in play an important role in contributing to overall health. The main causes of PCOS are: Poor diet, Obesity, Lack of physical activity, etc.

6. Prenatal factors: High levels of androgen during the prenatal phase also increase the chances of females having PCOD.

Diagnosis of PCOD

PCOD is a condition that requires early diagnosis, treatment, awareness, a healthy lifestyle and a planned diet plan. Many women in today?s generation are dealing with PCOD and some of them do not even get diagnosed.

? Diagnosis of PCOD typically starts with the discussion of symptoms with the doctor and the doctor may check for signs like acne, hair thinning, excess body hair and weight gain

? There is a very common diagnosis criteria followed for PCOD known as **Rotterdam Criteria**. And to be diagnosed with PCOD, you at least need to fulfil two of the three following criteria:

1. Irregular periods

2. High androgen levels

3. Polycystic ovaries

? **Diagnostic Criteria Impact**: The global prevalence indicates how many women worldwide are affected by PCOD and it varies based on diagnostic criteria and the population which is being studied. The different diagnostic criteria used for PCOD predict different prevalence rates: (https://doi.org/10.1007/978-3-030-92589-5_1)

1. 8.7% rate with NIH criteria

2. 17.8% rate with Rotterdam criteria

3. 12.0% rate with AE-PCOS criteria

? World Health Organization (WHO) estimates PCOD affects 8-13% of women of reproductive age (15-44 age). Despite its prevalence, 70% of women which is a significant number of women remain undiagnosed. https://www.who.int/news-room/fact-sheets/detail/polycystic-ovary-syndrome

? A study was published in 2023 stating that the prevalence of PCOD was 5.2%, which is nearly double the previously reported prevalence of 2.9%. 10.1016/j.ajog.2023.04.010

Tests and scans related to PCOS

Early diagnosis of PCOS is important to overcome future complications. PCOS can also show symptoms as severe as infertility and complications related to pregnancy.

1. Blood tests: Blood tests measure the Progesterone, Estrogen, LH, FSH and insulin levels in the blood

2. Ultrasound: Ultrasound is done to examine the enlarged ovaries and cysts present inside the ovaries (Polycystic ovaries).

3. Glucose tolerance tests: This test is done to detect insulin resistance, which is a major cause of PCOS.

The Effect of PCOD on Pregnancy

PCOD affects a woman?s reproductive health up to the extent that a woman can face fertility issues and pregnancy-related complications.

1. Difficulty in Conceiving: Due to irregularity in the release of eggs from the ovaries causes disruption or absence of the menstrual cycle making the conception of the baby difficult.

2. Pregnancy Complications: During pregnancy, women with PCOD face higher risks of Miscarriage, Preterm Birth, Gestational Diabetes and Hypertension.

Lifestyle Modifications for Healthy Pregnancy for Women with PCOD

1. **Diet and Nutrition**: PCOD is a multifaceted disorder and one of the causes is diet. A balanced diet with low glycemic index foods and Omega-3 rich food to support hormonal balance.

2. **Exercise Regularly**: Keep your body active to regulate metabolism. Engage yourself in activities like walking, running, yoga and other physical activities.

3. **Stress Management**: Stress worsens every problem. Besides, working on your physical aspect, work on your mental aspect as well by meditating, journalizing and spending time with family.

4. **Weight Management**: A healthy weight is a path towards improvement. Pregnancy complications related to PCOD will significantly decrease as losing weight will enhance your metabolism.

5. **Adequate Sleep**: Daily 7-8 hours of sleep is adequate for a human body to perform optimally, and regular sleep supports your hormone level.

With a balanced lifestyle and proper management, a woman with PCOD can significantly reduce risks and mitigate future pregnancy complications. Early diagnosis of PCOD plays an important role in better outcomes, underscoring the importance of spreading awareness about PCOD. Small lifestyle changes can transform a stressful person into one marked by confidence. Educating people regarding PCOD needs to be done regularly to break the stigma surrounding this critical subject. It is less of educating and more of empowering by providing that space for women to speak and feel supported.

Competing interests

The authors declare that they have no competing interests.

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