

Exploring the Prevalence of PCOS: Addressing Challenges and Impact on Adolescent

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Abstract: Polycystic ovarian syndrome - A multifactorial reproductive, metabolic and hormonal disorder affecting an increasing number of Adolescent girls and women in reproductive - age. It's first observed by 'stein - Leventhal' so known as 'stein - Leventhal syndrome. commonly caused by multiple factors like irregular periods which further may leads to infertility and complications during pregnancy. Excess male hormone Androgen, in severe cases leads to hirsutism. Along with some metabolic complications like insulin resistance 7 % leads to diabetes type 2. all above issues impacts the quality of Social and Psychological Wellbeing, increase biopsychosocial influence and social gauche. The main cause is modified lifestyle and genetics. This study delves into the intricate landscape of PCOS and its prevalence among adolescent girls in Yavatmal city of Maharashtra (India). Through a comprehensive review of existing literature, community surveys, This study aims to elucidate the burgeoning ratio, phenotypic variations, and socio - demographic factors influencing PCOS.

Keywords: PCOS, hirsutism, insulin resistance, Acanthosis nigricans, acne vulgaris, Adolescent, Yavatmal [M. S.]

1. Introduction

Polycystic ovarian syndrome is a complex endocrine syndrome characterised by hormonal imbalance in reproductive age that have implications on early puberty, disrupted menses, and potential long - term effects on reproductive health. Metabolic issues like insulin resistance impact multiple factors like cardiovascular issues, reproductive and mental wellbeing. Yavatmal city of Maharashtra serves the geographical area focused for this purpose to address the limited knowledge on PCOS prevalence. Although it is believed To be linked to lifestyle modifications and environmental elements. Factors like poor diet, sedentary lifestyle and stress can contribute to the development of PCOS and may be Influenced by a combination of genetic factors.

a) Metabolic risk

Compensated insulin resistance a condition where cells become less responsive to insulin a peptide hormone that regulates blood glucose levels. As a result the pancreas produces more insulin which leads to elevated level, causes hyperinsulinemia, disrupted carbohydrate metabolism leads to development of diabetes type 2 and weight gain and obesity causes cardiovascular issues like increased cholesterol levels in blood which can impact overall health of individuals.

b) Hormonal imbalance:

Elevated levels of androgen lead to irregular menses OR absence of menses, anovulation and the formation of ovarian cysts. lack of regular menses (Failure Of release of ova from ovary) shows cysts in the ovaries on ultrasound imaging and can be cause of infertility, difficulty In conceiving. The menstrual cycle is a very important indicator of women's good reproductive health and of their endocrine function. Menstrual cycle is characterized by variability in volume, pattern and regularity. imbalances in hormonal exposure may contribute to the development of endometrial hyperplasia, a precursor to endometrial cancer. Another

Common Symptom is acne and hirsutism which is excess hair growth on specific body parts. majority of adolescents with PCOS show Acanthosis nigricans a condition that shows Patches of darkened skin on the back of the neck, underarms and into the groin area.

c) Mental health:

The hormonal imbalances and physical symptoms, along with the challenges of managing the condition, may contribute to emoti obsessive compulsive disorder along with body image may further impact mental well - being, all because of increased level of cortisol and dehydroepiandrosterone a precursor of sex hormones including estrogen and testosterone (DHEA) due to hormonal, metabolic disturbances.

d) Definition of PCOS for prevalence estimation:

Polycystic ovarian syndrome (PCOS) is a multifactorial hormonal syndrome among people assigned female at birth, characterised by irregularity in menses, excess male hormone Androgen level, typically manifesting during puberty and the presence of small cysts in the ovaries. The prevalence of PCOS among adolescent girls is challenging to determine precisely but it is estimated to affect approximately 10 - 15% of this population during their reproductive phase.

2. Objective

To explore the prevalence of PCOS in Adolescents in Yavatmal Maharashtra and linked with respect to the clinical and paraclinical findings and its diverse Spectrum.

3. Methodology

No research has been done on PCOS in this region, we obtained the opportunity to assess the prevalence of it. A survey-based pilot study performed in Various educational institutions in Yavatmal city. This study aimed at assessing

Clinical and physical features dataset which contains 250 adolescents girls as a targeted group. Inclusion criteria include 14- 20 years old, this study used a confidential well-structured polycystic ovarian syndrome questionnaire (PCOSQ) adhered to ethical guidelines ensuring confidentiality and privacy. which includes a general health history questionnaire with [1] Socio - demographic (age, gender, ethnicity, education, marital status) and [2] Socio - economic (income, employment) and [3] clinical implications like lifestyle, hormonal imbalance and menstruation data. Again has [4] Metabolic risk factors like glucose intolerance, increased insulin, diabetes, acne and hirsutism with androgenic alopecia, obesity and endometrial complications. [5] Eating habits like overeating.

Polycystic ovarian syndrome is the main cause of effective infertility, individual encounters insulin resistance compensated by hyperinsulinemia in 9 %, impaired glucose intolerance. the prevalence of Polycystic Ovarian Syndrome among targeted Adolescents girls in Yavatmal city is about 10 % hyperandrogenism impacts multiple issues like, acne and are considered Due to increased androgen level in blood. the clinical symptoms of hirsutism which shows increased growth of terminal hairs in the androgen dependent parts of the body. Study shows that some individuals have Acanthosis nigricans a darkened skin patches on the neck, underarms and groin area. Most of the individuals have comorbidities. The most common clinical finding is Irregular menstrual cycle usually started from menarche and may appear in the form of amenorrhea (Absence of menses), oligomenorrhea (Frequent menses), and polymenorrhea (Abnormally Frequent menses) and might even being normal ovulation combines with other complications hence it is called as a multifactorial complicated condition, there is no single criteria for the diagnosis of this syndrome. In this study a severe form of acne was observed called acne vulgaris.

Prevalence of Polycystic Ovarian Syndrome also impacts individuals mental health with all the above complications the adolescents face social Gauche with own body dissatisfaction result in low self esteem and aggressiveness irritability, sadness and ego - resiliency with anxiety and depression all causes because of polycystic ovarian syndrome. All above data is paramount Consideration for preventive healthcare measures associated with PCOS.

4. Discussion- Principle findings

- 1) Menstrual Irregularity: Adolescents with PCOS experience irregular periods, anovulation and their Menstrual issues than general Adolescent girls. Irregular menses develop cysts in ovaries.
- 2) Fertility Challenges: PCOS is a leading cause of infertility due to irregularities of menses and individuals with it may face challenges in conceiving naturally. Hyperandrogenism Symptoms: Includes acne, hirsutism, and male - pattern baldness associated due to elevated levels of androgen in PCOS.9, anger issues and poor behaviour with dissatisfaction of their body. It leaves adolescents With low confidence and worry for future health related challenges.
- 3) Lifestyle Management: Lifestyle modifications, including regular exercise and balanced diet.

- 4) Genetic and Environmental factors: Both genetic and environmental factors may contribute to the development of PCOS, with a complex interplay influencing its manifestations.
- 5) Multidisciplinary approach: Effective management of PCOS often requires a multidisciplinary approach involving gynecologist, Endocrinologist, dietitians, and mental health professionals to address its diverse Spectrum and impact.

These findings highlight the complexity of PCOS and emphasize the importance of a comprehensive understanding and management. In recent years the prevalence of Polycystic Ovary Syndrome has increased in young Adolescent females due to transforming lifestyle changes. There is a limited source of data in the literature Unveiling prevalence of Understanding the diverse Spectrum of polycystic ovarian syndrome manifestations in this population will aid in tailoring effective preventive and therapeutic interventions. The discussion will encompass the socio - demographic and socio - economic Determinants, potential risk factors and implications for public health policies.

5. Result

The study reveals a burgeoning rate of prevalence of Polycystic Ovarian Syndrome among adolescent girls with a higher possibility of metabolic complications, abnormalities In menstruation which leads to infertility and metabolic complications which lead to serious issues like diabetes Type 2 and cardiovascular problems. The adolescent girls had inadequate information and less awareness about polycystic ovarian syndrome. To overcome such lethal effects of PCOS and to improve quality of life, individuals need knowledge and understanding of it which can be highly possible by setting specific and essential health - related strategies like structured teaching programmes by conducting Awareness Seminars and workshops can be useful. Enhancing awareness information by using social networks, and Creating awareness programmes in every educational institution can help to understand and deal with PCOS.

Table: Total individuals surveyed 400.

Obesity	12 (5%)
Hyperandrogenism	7 (3 %)
Hyperinsulinemia	15 (6%)
Insulin resistance	10 (4%)
Acanthosis nigricans	7 (3%)
PCOS	12 (5%)
Acne	13 (5.5%)

6. Conclusion

This Research contributes to the growing body of knowledge and awareness of polycystic ovarian syndrome by shedding light on its prevalence among adolescent girls in Yavatmal city of Maharashtra. The outcomes will Inform healthcare professionals and educators to develop targeted strategies significantly for early detection and diagnosis and prevention. This will help in managing polycystic ovarian syndrome in this specific demographic, ultimately fostering

better reproductive and metabolic health outcomes for individuals with PCOS. Interpreting these results collectively provides a comprehensive understanding of the impact of PCOS with a specific population, guiding healthcare practices, interventions, and future research efforts.

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