



INFLUENCE OF A POOR LIFESTYLE ON THE DEVELOPMENT OF CYSTS IN WOMEN

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ABSTRACT:

Poor lifestyle choices, such as frequently consuming fatty fast food, consuming sugary beverages, living a sedentary lifestyle, and not getting enough exercise, may hasten the ovarian hyperthecosis progression. A recurrent hormonal disorder that affects women of reproductive age (15-30) known as polycystic ovarian disease (PCOD), where the ovaries contain an abundance of tiny cysts. It might interfere with their menstrual cycles and complicate attempts to conceive. PCOD is a serious health issue since those who have it have a higher risk factors include endometrial hyperplasia, endometrial cancer, obesity, cardiovascular disease, diabetes mellitus, obstructive sleep apnea, depression, and nonalcoholic fatty liver disease. Endometrial cancer may be brought on by aberrant, unopposed endogenous estrogenic stimulation brought on by feminizing ovarian tumors and polycystic ovarian syndrome. Patients with polycystic ovarian disease support the finding that endometrial carcinoma with a concurrent endogenous estrogenic stimulation has a better prognosis (P0.01) than endometrial carcinoma alone. A mature follicle, which is also a cystic structure, develops throughout a typical menstrual cycle with ovulation. The symptoms and potential problems of PCOD appear to be well managed by lifestyle changes. Depending on the condition, medication or lifestyle adjustments may be necessary. Getting regular exercise, losing weight, and increasing your daily activity can all help treat or perhaps prevent insulin resistance and lower testosterone levels. Synthetic medications can be used to treat PCOD. This paper contains the correlation between the poor life style and the occurrence of PCOD in women and its cure.

Keywords: Poor lifestyle, tiny cyst, PCOD 1, obesity, infertility, endometrial cancer, insulin resistance.

INTRODUCTION:

Polycystic ovarian disease or syndrome was first pronounced in 1935 by American gynecologists Irving F. Stein, Sr. and Michael L. Leventhal, from whom it got its original name: Stein-leventhalsyndrome (Shrestha et al. 2019). A prevalent hormonal or endocrine abnormality which impacts more and more women between teenage years and menopause (Reproductive age) is polycystic ovarian disease, sometimes referred to as sclerocystic ovary syndrome, ovarian hyperthecosis and functional ovarian hyperandrogenism (Choudhary 2022) (Shrestha et al. 2019). Most PCOD patients develop a large number of little cysts on their ovaries. This is the basis for the term polycystic ovary disease. Although the cysts are not hazardous, they do cause hormonal imbalances (C. S. 2020). A complete follicle, which is also a cystic structure, advances through a regular menstrual cycle that includes ovulation. A developed follicle, prepared to ovulate ranges in size from 18 to 28 mm. Although the polycystic ovaries might not have as many cysts as normal ovaries, numerous tiny antral follicles containing eggs are present in polycystic ovaries; however, the follicles do not contain any properly grow and mature—there is no ovulation. Because the affected females don't have regular periods, and they do not ovulate consistently (C. S. 2020). When a regular menstrual cycle is disrupted, these cysts develop. The ovary has an increase in size and generates an immense quantity of both androgen and estrogen. This overabundance in addition to the lack of ovulation, may cause sterility in Women (Shrestha et al. 2019). It is uncertain what causes polycystic ovarian disease. An essential impact is played by insulin resistance and hyperandrogenism. The hypothalamo-pituitary-ovarian axis is normal; nevertheless, suppression of ovarian follicular growth and improper Pituitary feedback obscure its normal operation (Varsakiya et al. 2023). Since it may develop into a metabolic syndrome that includes insulin resistance, hyperinsulinemia, abdominal obesity, hypertension, and dyslipidemia, it has a gravely detrimental impact on the body's physiology and metabolism. Common metabolic characteristics that lead to severe long-term repercussions, like cardiovascular disease, type 2 diabetes, and endometrial hyperplasia. Important endocrine Gonadotropin-releasing hormone (GnRH) pulse generation is one of the disorders. Luteinizing hormone (LH) hypersecretion is caused by ovarian steroids' feedback inhibition, Ovarian stromal-thecal hyper activity, as well as reduced follicle-stimulating hormone (FSH), Leading in ovarian hyperandrogenism, all of which could have important metabolic, reproductive, dysfunctions of metabolism (Allahbadia et al. 2011). Acne, hirsutism, and male-pattern baldness are the three proven signs of hyperandrogenism (Choudhary 2022). Endometrial cancer risk factors are also prevalent in PCOS-affected women. In actuality, those under the age of 54 possess a greater chance to grow endometrial cancer than they have breast or ovarian cancer (Bellver et al. 2017). High insulin resistance, increasing hyperandrogenism and making PCOS's clinical symptoms worse (Cowan et al. 2023), are frequently observed in PCOD-afflicted women. High-refined-carbohydrate diets, such as those made with maida and other starchy, sweet foods, too much junk food can increase insulin resistance. Sedentary lifestyles and insufficient physical activity are two of the main causes of PCOS. Obesity is a known contributor to insulin resistance, and it is believed that obesity, in conjunction with inherited insulin deficiencies, leads to the production of glucose intolerance among PCOS women (Choudhary 2022). PCOS cannot be cured. Lifestyle

modifications such as exercise and weight loss may be part of the treatment. Birth control pills can help with irregular periods, acne, and excessive hair growth. Metformin and anti-androgens could be beneficial. Other common acne treatments and hair removal methods could be employed (Choudhary et al. 2019). Yoga & regular exercise can help to get rid of this problem (Choudhary 2022).

MATERIALS AND METHODS: The relevant data for this review study was discovered by searching Google Scholar, PubMed, PubMed Central, and published research papers and review articles from throughout the world on how poor lifestyle influences the development of cysts in women. Only publicly available data were used, and speculative assertions concerning exposure were disregarded. Utilizing information from reputable sources of information on the issue is one of these inclusion criteria. The study excluded all other languages than English.

RESULT & DISCUSSION:

Polycystic ovarian disease (PCOD) at a glance: The most prevalent gynecologic illness affecting women of reproductive age is polycystic ovary syndrome (PCOS). It is mostly brought on by androgen excess and is linked to the emergence of significant endocrine, metabolic, cardiovascular, reproductive, and psychological diseases (Shannon et al. 2012). The volume of each ovary in a healthy woman in her reproductive years' ranges from 4-6 ml, and they are folded like a walnut. Depending on the stage of the menstrual cycle, the size of the fluid-filled sacs, known as follicles, found in normal ovulating ovaries can range from 1 to 30 millimeters. The little egg that resides in each follicle or sac is never developed sufficient to cause ovulation, though in the polycystic ovary, more than 12 tiny follicles, with diameters ranging from 2 to 9 millimeters, are usually placed in a "pearl-necklace" pattern around the periphery, the ovaries become bigger in size and bulky containing more than 10 milliliters when a woman is diagnosed with PCOS. As the name implies, poly means multiple, therefore polycystic ovarian disorder refers to a condition in which the ovaries develop numerous tiny sacs resembling cysts that are filled with fluid and do not require surgical removal. (Minocha 2020)

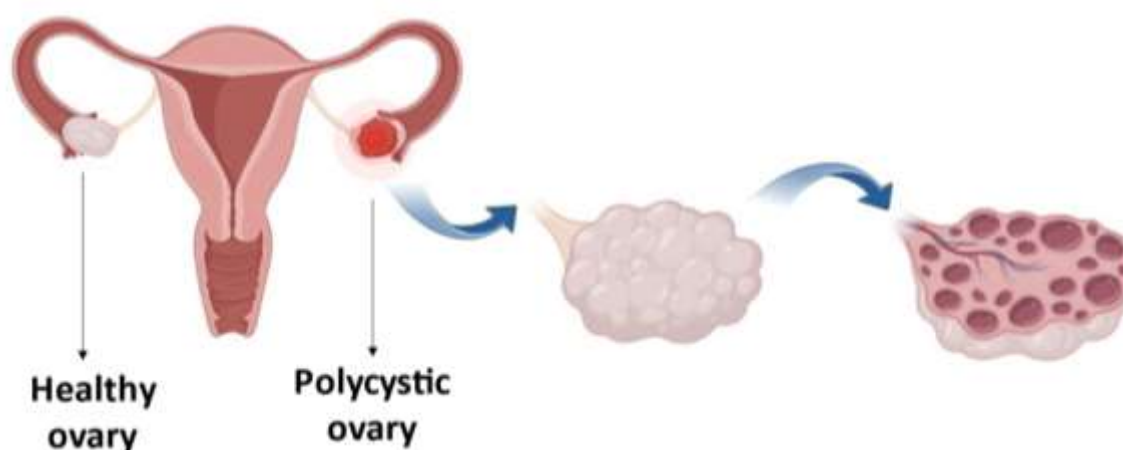


Fig.1. Development of polycystic ovaries (Minocha 2020)

Sign & Symptoms of PCOD: Women with polycystic ovarian syndrome (PCOS), a series of symptoms are at risk for metabolic issues such as insulin resistance, diabetes type 2, dyslipidemia, hypertension, and cardiovascular diseases as well as the manifestations of

PCOD are such as Hirsutism (body hair & excess facial hair), obesity, acne, and psychological issues such as depression, stress, and anxiety. They are also at risk for menstrual problems, ovulation failure, cancer of the endometrium, late menopause, and infertility. (Sedighi et al. 2014) (Emeksiz et al. 2017) (Choudhary 2022). Insulin resistance (IR) is regarded as a significant pathophysiological characteristic of PCOS, exacerbating the clinical manifestation of the condition by causing hyperandrogenism and a higher occurrence of overheavy and obesity (Cowan et al. 2023).

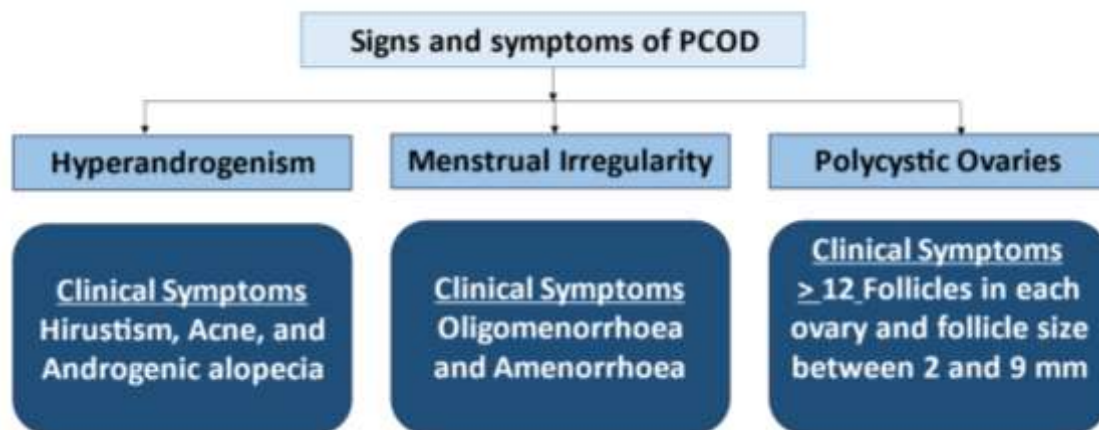


Fig.2. Signs and symptoms of PCOD (Mukkathu et al. 2023)

Poor lifestyle causing PCOD through hormonal Imbalance: PCOD is caused by a mixture of poor lifestyle decisions such as a sedentary way of life, consuming a lot of junkfood and alcohol and cigarette use and not having enough physical activities or yoga, pollution, and stress (Choudhary et al. 2019) (Varsakiya et al. 2023) (Bellver et al. 2017). Fast food is characterized as calorie rich foods that are lacking in nutrients like vitamins and minerals and heavy in saturated fat, salt, cholesterol, and refined sugar. It also contains a lot of sodium, trans fats, processed carbs, and preservatives, which are the main contributors to obesity and have negative physical effects on the body. Whether for obese or lean girls, body weight is a continual problem. Due to their disordered eating patterns, teenage girls' skinny and convenience food eating are linked. Junk food influences androgen levels in an indirect way through IR. Increased insulin levels cause the depletion of sex hormone-binding globulin (SHBG), a protein that acts as a regulator that prevents female androgen production and causes hyperandrogenism when cytokines cause IR (Begum et al. 2023).

The ovary's appearance changes noticeably as a result of the above-mentioned chemical imbalance, disrupting its function and harming fertility. Obesity makes insulin resistance related to PCOS worse. Obesity and PCOS are linked in a reciprocal manner, with women who routinely gain weight making the condition more common and severe. (Minocha 2020). The main endocrine problems are hypersecretion of luteinizing hormone (LH) due to dysregulation of the gonadotropin-releasing hormone (GnRH) pulse producer to response inhibition by ovarian steroids, reduced follicle-stimulating hormone (FSH), hyperactive ovarian stroma, causing ovarian hyperandrogenism, which could all have important metabolic, reproductive and metabolic and cognitive disorders (Allahbadia et al. 2011).

Risks of cancer: Women with polycystic ovarian disorder have a 2.7-fold increased risk of endometrial cancer (pcod). Anovulation's prolonged exposure of the endometrium to unopposed estrogen is a major factor in the increased risk of cancer development.

Additionally, certain women with PCOS may be more susceptible to ovarian cancer (Dumesic et al. 2013). Multiple EC threats exist in females with PCOS, and they may be more likely to develop EC. PCOS is associated with a number of medical, metabolic, and molecular risk factors, such as obesity, diabetes, insulin resistance, nulliparity, progesterone resistance, Cyclin D1, and uncontrolled estrogen production of the endometrium in anovulatory women. There are doubts about the actual strength of the connection between EC and PCOS (Haoula et al. 2012).

TREATMENT:

There are a variety of opinions on how to treat PCOS. Some believe it cannot be cured because it is a lifelong illness, while others have come to the conclusion that alterations in lifestyle and hormone treatment can be effective for PCOS. (Minocha 2020)

Lifestyle Modification & drug therapy: A portion of the population called PCOS women would definitely gain a lot from regular exercise through direct effects on muscle metabolism and indirect effects on weight management; exercise enhances insulin sensitivity (Norman et al. 2002). An improvement in insulin sensitivity occurs along with weight loss. Additionally, it has been demonstrated that losing weight is a successful therapy for type 2 diabetes, a condition that has familiar clinical and metabolic characteristics to PCOS, including generalized and abdominal obesity, IR, hyperinsulinemia, dyslipidemia, and an elevated danger for the onset of cardiovascular illness (Balen et al. 2002). The current PCOS lifestyle guidelines recommend a low-fat, moderate-protein, high-carb diet as well as increased consumption of fiber, wholegrain breads, cereals, fruit, and vegetables to improve insulin sensitivity and reduce related mortality and morbidities (Norman et al. 2002). Consider adhering to the observe discipline and strive to go to bed early and wake up early and do some physical activity like yoga. Have fresh fruits between in the morning and afternoon. Consume at least 8 to 10 glasses of water each day (Choudhary 2022). Insulin-lowering medications, anti-androgen therapy, and oral contraceptives are frequently used over the course of therapy of PCOS patients, and they provide the following functions:

- (a) Reducing mingling androgens with the oral contraceptive medication and/or insulin alerting drugs,
- (b) Outlying androgen receptor blockade with spironolactone, flutamide, ciproterone acetate, or finasteride,
- (c) Eflornithine hydrochloride-induced hair growth inhibition (Balen et al. 2002) (Bellver et al. 2017).

Metformin, an insulin sensitizing agent, reduces serum LH and raises SHBG in PCOS patients, with ovarian andro-gen synthesis being inhibited by 20 to 25% (Bellver et al. 2017).



Fig.3. Probable modification of lifestyle and the possible treatment to overcome PCOD
(Cowan et al. 2023)

CONCLUSION: Women with PCOS who are either overweight or lean tend to eat improperly, which can cause issues like infertility. It is a chronic illness or condition that cannot be reversed; hence there is no long-term treatment available. Medicine and lifestyle modifications are the only choices available to improve health. From this fundamental study, it can be inferred that altering one's lifestyle through moderate exercise, quitting smoking, dietary changes, and less psychosocial stressors is undoubtedly helpful in treating hormonal imbalance.

FUTURE SCOPE: Eliminate processed items such as white bread, biscuits, spaghetti, and foods that are chemically colored, flavored, or vitaminized, as well as prepackaged foods. You don't consume such items, such as opening the packet to eat or the bottle to drink. Patients with PCOS are typically treated with insulin-lowering drugs, anti-androgen therapy, and oral contraceptives. It is not hazardous but if it is not maintained it can be transformed into endometrial cancer.

CONFLICT OF INTEREST: There isn't any conflict of interest with this study.

AUTHOR CONTRIBUTIONS: Acquisition and interpretation of data is done by Tiyaisha Saha. Conception, design and revising of the article are done by Rupesh Dutta Banik.

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