Pakistan Endocrine Society

Newsletter

www.pakendosociety.org

July to September 2024

Newsletter Theme

Polycystic Ovary Syndrome

PCOS

From the President's Desk

Dr. Aisha Sheikh

Dear colleagues,

As we mark September as PCOS Awareness Month, the Pakistan Endocrine Society (PES) has been deeply committed to raising awareness and advancing education. Throughout the month, we held numerous activities, including public awareness videos, information leaflets, Facebook live sessions, and workshops titled "Breaking the PCOS Code" across Pakistan, aimed at healthcare professionals. In addition, we hosted a webinar, "Navigating the PCOS Hormonal Maze," focused on guiding HCPs through the complexities of PCOS management. We are also pleased to announce the EndoHub and Endolympics, featuring clinical case discussions and a quiz competition for fellows in training. Furthermore, since our mid-summer meeting, we have conducted Facebook live sessions on thyroid disorders, Type 1 diabetes, and menopause, along with webinars on disorders of the thyroid and in-patient hyperglycemia management.

PES has also partnered with the Society of Pediatric Endocrinology and Diabetes Pakistan (SPEDP) to deliver a series of webinars and a symposium on "Demystifying Puberty and Pubertal Disorders." This initiative included two webinars that explored the physiology, embryology, and genetics of puberty, followed by a full-day symposium held across four major cities, which featured lectures and workshops dealing with pubertal disorders.

This year, we are excited to present the 22nd PES Annual Meeting in the historic city of Lahore from 11-13 October 2024. The meeting will host esteemed national and international speakers, with endorsements from American Association of Clinical Endocrinology (AACE), International Society of Endocrinology (ISE), South Asian Federation of Endocrine Societies (SAFES) and Society for Endocrinology (SFE), UK. The scientific program includes pre-conference workshops and courses, as well as scientific sessions covering key areas in diabetes and endocrinology.

I extend my heartfelt thanks to our scientific and executive members, PES admin and IT support whose tireless efforts have made these accomplishments possible. A special thank you goes to the scientific and organizing committee of PESCON2024 for their hard work in curating this outstanding program.

I warmly welcome all PES members, speakers, delegates, and corporate members to the vibrant city of Lahore. Together, let's embrace this opportunity for learning, collaboration, and celebration.

See you all soon!

From the Editor's Desk

Dr. Saima Askari

PCOS: A Multifaceted Disorder Requiring Comprehensive Care

Dear Colleagues,

Polycystic Ovary Syndrome (PCOS) affects approximately 12-18% of women of reproductive age but often remains underdiagnosed and undertreated in primary care. As general practitioners, your role in identifying and managing this complex condition is crucial, as it has significant implications for women's physical, emotional, and reproductive health.

September is PCOS Awareness Month, emphasizing the need for education about this condition. PCOS is characterized by menstrual irregularities, hyperandrogenism (excess male hormones), and polycystic ovaries on ultrasound. Women with PCOS commonly experience insulin resistance, obesity, and increased risks of metabolic syndrome, type 2 diabetes, cardiovascular disease, and infertility due to anovulation.

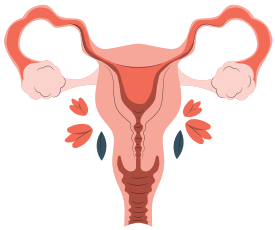
Early diagnosis is essential, with the Rotterdam criteria serving as the standard diagnostic tool. This requires two of the following: oligo- or anovulation, clinical and/or biochemical signs of hyperandrogenism, and polycystic ovaries on ultrasound. Regular screening can lead to timely referrals and treatment.

Management of PCOS is multifaceted, including lifestyle modifications like weight management and exercise, especially for overweight patients. Pharmacological options, such as hormonal contraceptives and insulin sensitizers like metformin, can help manage symptoms and reduce long-term health risks. It's also important to address the emotional impact of PCOS, as many women report anxiety, depression, and body image issues. Providing comprehensive support and mental health referrals is vital.

As our understanding of PCOS evolves, staying informed about the latest research is essential for effective interventions.

In conclusion, PCOS is a complex condition with wide-ranging implications for women's health. General practitioners are in a unique position to recognize and manage this syndrome, improving the quality of life for many women. By enhancing our awareness, we can provide better care and empower our patients to manage their health proactively.

As we gather for the 22nd Annual PES Conference in Lahore, I warmly welcome all participants, speakers, and guests. This year's conference promises enriching discussions, innovative research, and collaborative learning in endocrinology and women's health. Together, we will explore advancements and engage in dialogue about the challenges related to endocrine disorders. Your commitment to improving patient care is vital, and I look forward to inspiring conversations during this important gathering.



PCOS
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Message from Dr Azra Rizwan

Effective Weight Loss Strategies for Managing PCOS

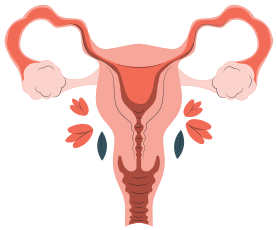
Polycystic Ovary Syndrome (PCOS) is a complex condition affecting many women of reproductive age. One of the key strategies in managing PCOS is weight loss, which can significantly improve symptoms, enhance fertility, and lower the risk of related conditions such as type 2 diabetes. Achieving and maintaining a healthy weight requires a combination of lifestyle changes and, in some cases, medication.

A high-fiber diet plays a crucial role in weight management for PCOS patients. Incorporating whole grains, vegetables, fruits, and legumes helps improve digestion and provides lasting satiety, which aids in reducing calorie intake. Replacing refined carbohydrates with whole wheat products can also help regulate blood sugar levels, a key concern for many women with PCOS. Limiting sugar-sweetened beverages, which are often high in calories and contribute to insulin resistance, is another essential dietary measure.

In addition to dietary changes, regular physical activity is vital. Exercise not only promotes weight loss but also improves insulin sensitivity, reduces inflammation, and enhances overall metabolic health. A combination of aerobic exercises, like walking or swimming, and strength training can be especially beneficial.

For patients who struggle with weight loss through lifestyle changes alone, medications can offer additional support. Metformin, a common medication used to manage insulin resistance, may help some women lose weight by improving how their body handles insulin. Other medications, such as GLP-1 receptor agonists, have shown promise in aiding weight loss by suppressing appetite and slowing digestion.

A holistic approach that combines healthy lifestyle changes with appropriate medical interventions provides the most effective strategy for weight management in women with PCOS. This, in turn, improves overall health and helps manage the underlying symptoms of PCOS more effectively.



PCOS
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Message from Dr. Ibrar Ahmed

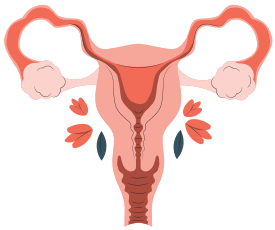
The Backbone of Healthcare: Enhancing General Practitioners Response to Polycystic Ovary Syndrome

Pakistan, as a country, is struggling to provide health care to its general public. There is the usual understanding that health delivery has three tiers: tertiary, primary, and secondary. In my opinion, primary care is the backbone of successful health care delivery. Therefore, awareness and capacity building of primary health professionals is always important. Educating them is a prime responsibility of ours for better health care.

General Practitioners should address the problems related to non-communicable diseases in society. Polycystic Ovary Syndrome (PCOS) is often mismanaged at the General Practitioners' level. For general practitioners, it's essential to recognize and address PCOS with a proactive and compassionate approach. PCOS affects not only the reproductive health of women but also their metabolic, mental, and emotional well-being. The diagnostic criteria and management strategies should be explained to GPs in a manner that they can apply to their patients. Through these simple measures, one can facilitate early intervention, improving long-term outcomes. General Practitioners should always address the day-to-day problems of PCOS.

Our General Practitioners should understand the issues they can address regarding PCOS in their practice. Early detection through simplified criteria, holistic care through combined efforts by doctors, nutritionists, and psychologists, and encouraging lifestyle modifications (diet and exercise) are essential. Individualized care and support in the form of a soft attitude towards patients can make a profound difference in a patient's quality of life.

In my opinion, it's a trickle-down effect empowering women to lead healthier, balanced lives through the prompt intervention of General Practitioners. Establishing understanding among GPs is key to success in combating the burden of PCOS that we are facing nowadays. It's always the hope you create for your patients that gets them active in achieving the goals you have set for them.



PCOS Awareness Month
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Message from Dr. S. Abbas Raza

President ISE

PCOD Awareness: Empowering Physicians for Early Intervention

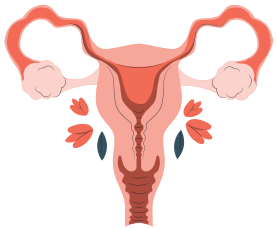
As Endocrinologists, we often encounter patients with Poly Cystic Ovarian Disease (PCOD). This complex hormonal disorder affecting women of reproductive age is seen in as many as one in every 4 th girl. Although, we do realize not everyone with PCOD needs to be treated but I'd like to highlight the importance of early recognition and appropriate advice as early intervention makes a bigger impact.

PCOD is a common problem, which usually get our attention when experiencing Irregular menstrual cycles, experiencing symptoms of Hyperandrogenism (acne, hirsutism) and/or finding Polycystic ovaries on ultrasound.

However, it's essential to note for physics in front line of providing medical care, that not all patients will have all three features. Also, apart from being related to hormonal abnormality, PCOD is also a metabolic disorder, increasing the risk of insulin resistance, type 2 diabetes, and cardiovascular disease

Role of General Physicians is crucial in Identifying high-risk patients, conducting basic investigations (HbA1c, lipid profile, thyroid function tests and when needed referring suspected cases to Endocrinologists for further evaluation and management

Early diagnosis and intervention can significantly impact the quality of life for these patients. Let's work together to raise awareness and provide comprehensive care for women with PCOD.



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Message from Prof. Saeed Mahar

Comprehensive Management of Polycystic Ovary Syndrome (PCOS): A Patient-Centric Approach

Polycystic ovary syndrome (PCOS) is the most common endocrine disorder affecting reproductive-age women.

Patients must present with at least two of the following features to receive a diagnosis: clinical/biochemical hyperandrogenism, ovulatory dysfunction, or polycystic ovaries on ultrasound.

PCOS is a chronic, lifelong, heterogeneous group of disorders, which can make it challenging to treat, "it's an endocrine disorder which has gynaecologic manifestations, dermatologic symptoms, and cardiometabolic comorbidities, which is where the [primary care physicians] can play a very important role. These patients have a high prevalence of depression and anxiety, which is also an opportunity for primary care physicians to intervene."

Once a diagnosis is established, "the most important role of an internist is to try to make sure that complications down the street are prevented and mitigated. In patients with PCOS, physicians should screen for associated conditions like obesity, cardiovascular disease, sleep apnoea, and metabolic dysfunction-associated steatotic liver disease (formerly non-alcoholic fatty liver disease), among others. In addition, "there's a very well-documented increased risk for type 2 diabetes, about a fourfold increased risk.

When it comes to treatment, "there's no one answer to, 'How are you managing PCOS?' It depends on the presentation of the patient, what is bothering the patient the most. It needs to be patient-centric, and so it's not just a one size will fit at all."

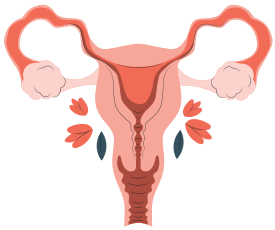
To manage PCOS, physicians first have to ask themselves what symptoms the patient is reporting and what's most relevant.

If a patient's primary issue is menstrual irregularities, birth control pills are typically prescribed. However, for patients who can't be on birth control—say due to clotting issues—then metformin can be used.

Patients with irregular menses and male hormone issues could go on oral birth control pills. With adequate contraception, they can also be prescribed the antiandrogen spironolactone.

Regardless of weight or body mass index (BMI), lifestyle management, including healthy eating and exercise, benefits most patients with PCOS and is often recommended as first-line treatment.

"Obesity is such a significant driver of this syndrome, and even modest weight loss will help resume regularity in the menses and will bring down the androgen levels. Lifestyle management also improves depression symptoms" and can improve quality of life and decrease anxiety.



PCOS Awareness Month
September, 2024

Message from Prof. M. Zaman Shaikh

Polycystic Ovary Syndrome: A Multidimensional Challenge Requiring Comprehensive Care

PCOS is a complex endocrine disorder affecting up to 10% of women of reproductive age, characterized by a combination of metabolic, reproductive, cosmetic, and psychological symptoms. A family physician is crucial in early detection, management, and education about this mysterious condition.

Diagnosis of PCOS is based on the Rotterdam criteria, which require two out of three findings:

1. **Oligo- or anovulation:** Irregular or absent menstrual cycles.
2. **Hyperandrogenism:** Clinical signs (e.g., hirsutism, acne, alopecia) or biochemical evidence of elevated androgens.
3. **Polycystic Ovaries on ultrasound:** Multiple small follicles on the ovaries, though this is not required if the other two criteria are met.

Exclusion of other causes of hyperandrogenism, such as thyroid dysfunction, hyperprolactinemia, Cushing syndrome or congenital adrenal hyperplasia, is essential in making the diagnosis.

PCOS is strongly associated with insulin resistance, obesity, and metabolic syndrome. Many patients have increased risk factors for T2DM, CVD, MASH (Metabolic-Associated Steatohepatitis). Regular screening for these conditions is advised, including checking fasting glucose, HbA1c, lipid profiles, and BP. Lifestyle interventions, particularly weight management through diet and exercise, are the first-line treatment. Even modest weight loss (5-10% of body weight) can improve insulin sensitivity, regulate menstrual cycles, and reduce androgen levels. However, not all women with PCOS are overweight.

Treatment options depend on the desire of the patient

For women desiring pregnancy, ovulatory dysfunction in PCOS often leads to infertility. Clomiphene citrate or letrozole are first-line pharmacologic treatments for ovulation induction. For those not seeking pregnancy, hormonal contraceptives (combined oral contraceptives or progestin-only therapies) are the cornerstone of treatment, helping to regulate menstrual cycles and protect the endometrium from hyperplasia or cancer risk.

In addition to hormonal therapies, anti-androgens like spironolactone can be added to manage hirsutism and acne. These agents, however, are contraindicated during pregnancy and must be used with reliable contraception.
Metformin is often used for its insulin-sensitizing properties and has shown benefits in regulating menstrual cycles, reducing androgen levels, and improving fertility.

Cosmetic treatment for hirsutism includes laser therapy, electrolysis, waxing, threading and bleaching. Depression, anxiety, and body image disturbances are prevalent in women with PCOS, partly due to the physical manifestations like hirsutism, weight gain, and infertility. Family physicians should incorporate mental health screening into routine visits.

Patients with PCOS may benefit from a multidisciplinary approach involving dietitians, endocrinologists, and reproductive specialists. Regular follow-ups are important for adjusting management based on changing symptoms or life goals, such as pregnancy planning.

Conclusion: PCOS is a chronic, multifaceted disorder that requires ongoing care. Family physicians are uniquely positioned to provide comprehensive, patient-centered management, addressing this condition's reproductive, metabolic, cosmetic, and psychological dimensions. Early diagnosis and intervention can significantly improve the quality of life and long-term outcomes for women with PCOS.

PCOS
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Message from Dr. Musarrat Riaz

Understanding and Managing Hirsutism in General Practice: A Focus on PCOS

Hirsutism, defined as excessive hair growth in androgen-dependent areas like the face, chest, and back, often signals underlying hormonal imbalances. As general practitioners, it's crucial to approach this condition not only as a cosmetic issue but also as a potential marker for serious medical conditions, such as polycystic ovary syndrome (PCOS).

PCOS is the leading cause of hirsutism, affecting up to 80% of cases. It typically presents with irregular menstrual cycles, acne, and weight gain. Early recognition and diagnosis using the Ferriman-Gallwey scale can guide treatment. Other possible causes include idiopathic hirsutism, non-classical congenital adrenal hyperplasia (NCAH), and, in rare cases, androgen-secreting tumors. A detailed patient history, hormonal testing, and imaging are essential components of the diagnostic workup.

Treatment should be individualized. Oral contraceptives and anti-androgens like spironolactone are often used to manage symptoms, especially in women not seeking pregnancy. Cosmetic options such as laser hair removal and electrolysis offer additional relief. In women with PCOS, lifestyle modifications like weight loss can significantly improve both metabolic health and hair growth.

Finally, the psychological impact of hirsutism is profound, with many patients experiencing low self-esteem or social anxiety. Compassionate, holistic care is key to addressing both the physical and emotional dimensions of this condition.

Launch of the South Asia Obesity Forum: Challenges and Scope

The South Asia Obesity Forum (SOF) is a consortium of experts from eight South Asian countries: India, Pakistan, Bangladesh, Sri Lanka, Nepal, Afghanistan, Maldives, and Mauritius, with the tagline "United against Obesity." Registered in Kathmandu, the forum was officially launched during the Annual Congress of the Sri Lanka College of Endocrinologists (SLENDO 2024), which attracted a large audience of doctors and allied health care professionals, including dietitians, nutritionists, media representatives, and policymakers.

Initiated by Dr. Dina Shrestha, a consultant endocrinologist from Nepal, and other like-minded professionals from South Asia—including Dr. Nitin Kapoor, Dr. Sanjay Kalra, Dr. Rucha J. Mehta, Dr. Md Faruque Pathan, Dr. Selim Shahjada, Dr. Musarrat Riaz, Dr. Azra Rizwan, Dr. Sidrah Lodhi, Dr. Santosh Shakya, Dr. Aswin Pankajakshan, Dr. Mariyam Niyaz, Dr. Prasad Katlunda, Dr. Ranil Jayawardena, and Dr. Mohammed Wali Naseri—the SOF aims to create a collaborative platform that unites clinicians, researchers, and experts in the fight against obesity. The goal is to provide a comprehensive and easily accessible resource for obesity prevention and management, ultimately leading to improved health outcomes for individuals and communities.

During the launch on August 11, 2024, Dr. Md Faruque Pathan presented the vision and mission of SOF. The region-specific SOF declaration, known as "The Colombo Declaration," outlined four key points:

1. **Academic and research activities** aimed at sensitizing healthcare professionals to the need for timely obesity prevention and management.
2. **Awareness campaigns** designed to educate the public about the importance of managing obesity while avoiding the stigmatization of individuals living with obesity.
3. **Advocacy efforts** to engage policymakers and planners in making anti-obesity drugs and devices accessible, affordable, and available to all.
4. **Audits of obesity-related activities** across the South Asian region to ensure that both felt and actual needs are addressed.

SOF reaffirms its commitment to conducting a comprehensive campaign against obesity. Its partnership-based, person-centered, public-inclusive, and policy-concordant approach will drive academic, awareness, and advocacy initiatives, supported by rigorous audits.

Obesity is not just a matter of excess weight; it is a complex disease influenced by genetic, environmental, and behavioral factors. Effective obesity management necessitates a holistic approach that goes beyond standard diet and exercise recommendations. Physicians must identify underlying contributors such as hormonal imbalances, genetic predispositions, and psychological influences to provide personalized and effective care. This was highlighted by speakers during the SOF launch ceremony.

Dr. Niranjala Meegoda Widanege, President of the Sri Lanka College of Endocrinologists, welcomed the guests, while Dr. Prasad Katlunda from Sri Lanka discussed the impact of obesity in South Asia. Topics covered during the session included "Obesity: The Octopus in the Room" by Prof. Nitin Kapoor and Dr. Aswin Pankajakshan, both from India; "Medical Nutrition Therapy" by Prof. Ranil Jayawardena from Sri Lanka; and "Motivational Therapeutics in Obesity" by Dr. Musarrat Riaz from Pakistan. A highlight of the session was an engaging aerobic session conducted by a trained expert, emphasizing the importance of physical activity in our daily lives and ways to make it more enjoyable.

In his address, Dr. Mahipala Herath, Secretary of Health at the Ministry of Health, emphasized that platforms like the South Asian Obesity Forum (SOF) are vital for bridging the knowledge gap. They provide specialized training and resources for healthcare professionals. Through conferences, workshops, and training programs, these organizations keep physicians informed about the latest research and best practices in obesity management.

The Asian Journal of Obesity is the official journal of the South Asia Obesity Forum, and its first edition was presented during the SOF launch at SLENDO 2024. The Editor-in-Chief is Dr. Nitin Kapoor, with Dr. Sanjay Kalra serving as Deputy Editor. The journal aims to tackle the challenges posed by the obesity pandemic and mitigate its impact in the region through education, research, and advocacy.

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Syed Ather Enam, S.I.

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Prof. A. H. Aamir

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Professor Atul Kalhan

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Understanding Polycystic Ovary Syndrome (PCOS), Causes, Symptoms, and Treatment Options

Introduction

Polycystic Ovary Syndrome (PCOS) is the most prevalent endocrine condition that affects women of reproductive age. It is characterized by menstrual abnormalities and hyperandrogenism (1). Additionally, its pathogenesis has been linked to altered Luteinizing Hormone (LH) action and insulin resistance. There has been a prevalence of 5% - 15% of PCOS in women of reproductive age according to the diagnostic criteria of the US National Institutes of Health (2). PCOS can appear in a variety of clinical presentations. Patients may present multiple gynecologic, dermatologic, or metabolic symptoms, or they may be asymptomatic. Patients with PCOS most typically appear with indications of hyperandrogenism and a constellation of oligomenorrhea, amenorrhea, or infertility (3).

Androgens are male hormones produced in excess by the body in PCOS patients; these hormones are present in relatively small quantities in all females (4). This hormonal imbalance can cause irregular menstrual periods, infertility, and other symptoms, including acne and excessive hair growth (hirsutism), by interfering with the formation and release of eggs from the ovaries (ovulation) (5).

Causes and Risk Factors of PCOS

PCOS is a complex disorder with multiple causes. It is thought to develop from inherited, endocrinal, and environmental variables. These factors contribute to the hormonal irregularities and metabolic disturbances found in patients with PCOS.

Genetic Predisposition

There is significant proof associating PCOS with genetics, indicating that the condition frequently runs in families (6). Another family member is more likely to get PCOS if a mother or sister already has it. Though the precise genetic process is unknown, several genes involved in hormone synthesis and control may raise the chance of having PCOS.

Hormonal Imbalance

A disturbance in regular hormone levels is the primary cause of PCOS, particularly:

- Excess Androgens (Male Hormones): Elevated levels of testosterone and other androgens are commonly seen in PCOS patients (7). Numerous typical PCOS symptoms, such as hirsutism (excessive hair growth) and thinning scalp hair, result from this.
- Impaired Ovulation: Imbalanced hormone levels, particularly elevated testosterone and decreased follicle-stimulating hormone (FSH), impact the ovaries' capacity to develop and release eggs, which can result in irregular or nonexistent menstruation and problems with fertility (8).

Environmental Factors

Obesity: Though not every individual with PCOS is overweight, obesity can make the illness worse by raising androgen levels and aggravating insulin resistance. Additionally, persistent low-grade inflammation results from excess body fat, which can further upset the balance of hormones (9).

Stress: Prolonged stress raises cortisol levels, which can exacerbate PCOS symptoms by interfering with hormone control. Elevated stress can also indirectly increase insulin resistance by influencing eating patterns and weight gain (9).

Symptoms and Diagnosis

The common symptoms of PCOS include irregular menstrual cycle, weight gain and obesity, acne and hirsutism, infertility and reproductive issues, and psychological conditions including depression, anxiety, and mood swings. The primary approach to diagnosing PCOS is clinical, which entails ruling out other illnesses that might exhibit comparable symptoms. The Rotterdam criteria, which call for two of the three essential characteristics, are the most often used diagnostic framework (10).

Rotterdam PCOS Diagnosis Criteria (2003)

Two of the following three conditions must be fulfilled for individuals to be diagnosed with PCOS:

1- Menstrual irregularities are common signs of irregular ovulation or anovulation.
2- Hyperandrogenism can be diagnosed clinically (high amounts of body or face hair, acne) or by laboratory testing.
3- When an ultrasound scan reveals polycystic ovaries, the ovaries must either have an enlarged volume or have 12 or more follicles in a single ovary. Cyst presence is not necessary for a diagnosis, though.

Existing and Current treatment strategies

In the past, PCOS therapies were limited and mainly targeted symptom management. Early techniques included wedge resection surgery, which involved removing a portion of the ovaries to promote ovulation, and hormonal therapy like estrogen to control menstrual cycles (11).

Current therapies target multiple aspects of PCOS. Hormonal treatments, such as birth control tablets, are frequently used to decrease acne, lower testosterone levels, and regulate menstruation. Fertility drugs, such as letrozole and clomiphene citrate, induce ovulation in people who want to get pregnant (12, 13). Traditionally used to treat diabetes, Metformin is also used to control periods and enhance insulin sensitivity. A lifestyle change is essential for PCOS management. A healthy diet, consistent exercise, and stress reduction can improve hormonal balance and insulin sensitivity. Even minor weight loss might make a big difference in the symptoms.

Although additional research is required, alternative remedies such as acupuncture and herbal supplements like inositol and spearmint tea have become more popular for treating symptoms. Although they are less prevalent now, surgical methods to stimulate ovulation, such as Laparoscopic Ovarian Drilling (LOD), may be employed in refractory situations. The emphasis is still on individualized, comprehensive treatment that integrates lifestyle, alternative, and medical modalities.

Managing PCOS and associated conditions

PCOS management includes treating the syndrome overall as well as diseases that have been linked to it, such as mental health issues, diabetes, and cardiovascular disease. To avoid consequences including heart disease, Type 2 diabetes, and infertility, early diagnosis is essential. Insulin resistance is a common issue that may be controlled with medicine such as Metformin, diet, and fitness (14). Regular monitoring and adherence to a heart-healthy diet can help reduce the risk of cardiovascular disease. Mental health conditions like sadness and anxiety need to be treated with therapy or stress reduction methods.

Lifestyle changes are essential for managing symptoms. A balanced, low-glycemic diet, consistent exercise, and weight management improve insulin sensitivity and hormone balance and decrease symptoms. These adjustments and medical interventions provide a comprehensive strategy for PCOS management.

Conclusion

PCOS is an alarming endocrinopathy. It is not a single disease but rather a combination of increasing cases. It not only reduces a woman's ability to conceive but also has long-lasting effects on her general health beyond menopause. Although the precise impact of PCOS on lifespan remains uncertain, it unquestionably lowers life quality. Furthermore, the drug habit it causes may have adverse effects. Therefore, the diagnosis, epidemiology, genetics, and molecular causes of PCOS require study attention.

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Article

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Polycystic Ovary Syndrome (PCOS): Dietary Myths and Facts

Introduction
Polycystic Ovary Syndrome (PCOS) is a common endocrine disorder that affects women of reproductive age, with a global prevalence estimated at around 10%. The condition is characterized by hormonal imbalances, insulin resistance, and metabolic challenges, leading to symptoms such as irregular menstrual cycles, hirsutism, acne, and weight gain. Given the complex nature of PCOS, diet is often considered a cornerstone of its management. However, there is considerable misinformation regarding what constitutes an effective diet for managing PCOS.

Myth 1: Carbohydrates Should Be Completely Avoided
Fact: While it is true that women with PCOS often have insulin resistance, which can make carbohydrate metabolism more challenging, completely eliminating carbohydrates from the diet is not necessary and can be harmful. The focus should be on the quality and quantity of carbohydrates consumed. A 2021 review published in *Nutrients* emphasizes that complex carbohydrates with a low glycemic index (GI) are beneficial for women with PCOS. These foods, including whole grains, legumes, and vegetables, help stabilize blood glucose levels and improve insulin sensitivity. Completely avoiding carbohydrates can lead to nutrient deficiencies and may not be sustainable long-term.

Myth 2: A Gluten-Free Diet Is Essential for PCOS Management**
Fact: The popularity of gluten-free diets has led some to believe that they are beneficial for managing PCOS, even without a diagnosed gluten intolerance or celiac disease. However, a gluten-free diet is not necessary for most women with PCOS. Research published in *Endocrine Reviews* in 2022 indicates that there is no evidence to suggest that gluten-free diets offer specific benefits for PCOS. Instead, the focus should be on a balanced diet that includes whole grains, fruits, vegetables, and lean proteins. Unless a woman has a confirmed gluten sensitivity, eliminating gluten may lead to unnecessary dietary restrictions and reduced intake of important nutrients.

Myth 3: Dairy Products Exacerbate PCOS Symptoms**
Fact: The role of dairy in PCOS management is often debated, with some claiming that dairy products can worsen symptoms due to their insulinotropic effects. However, recent studies suggest that moderate consumption of dairy, particularly low-fat and fermented dairy products like yogurt, does not necessarily exacerbate PCOS symptoms and may even have beneficial effects. A 2023 study published in *The Journal of Clinical Endocrinology & Metabolism* found that dairy consumption did not significantly impact androgen levels or insulin resistance in women with PCOS. However, the study also highlighted that individual responses to dairy can vary, so it's important for women to monitor their symptoms and adjust their diets accordingly.

Myth 4: Supplements Can Replace a Healthy Diet in PCOS Management**
Fact: While certain supplements, such as inositol, vitamin D, and omega-3 fatty acids, have shown promise in supporting PCOS management, they cannot replace a balanced diet. Supplements should be seen as an adjunct to, rather than a replacement for, a nutritious diet. A 2020 meta-analysis published in *Nutrients* underscores that while supplements can help address specific nutrient deficiencies or support metabolic health, they are most effective when used alongside dietary modifications. A diet rich in whole foods, including fruits, vegetables, lean proteins, and healthy fats, remains the cornerstone of managing PCOS.

Myth 5: Low-Calorie Diets Are the Best Approach for Weight Loss in PCOS**
Fact: While calorie reduction can lead to weight loss, extreme low-calorie diets can be counterproductive for women with PCOS. Such diets may slow metabolism, increase cravings, and lead to nutritional deficiencies. A 2022 study in *Obesity Reviews* found that sustainable weight loss in The

women with PCOS is better achieved through moderate caloric restriction combined with a nutrient-dense diet and regular physical activity. The study emphasized that even modest weight loss (5-10% of body weight) can significantly improve PCOS symptoms, including menstrual regularity and insulin sensitivity.

Diet plays a critical role in managing PCOS, but it is important to separate myths from facts to avoid unnecessary dietary restrictions or ineffective strategies. The most effective dietary approach to managing PCOS involves a balanced, individualized plan that considers the unique metabolic and hormonal challenges of the condition. Emphasizing whole foods, managing carbohydrate intake, and avoiding extreme dietary restrictions can help women with PCOS manage their symptoms more effectively. As research continues to evolve, women with PCOS should consult with healthcare professionals, including dietitians, to receive personalized advice based on the latest evidence.

Feel free to adjust any part of the text further based on your preferences!

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Article

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PCOS and Metabolic Syndrome: Unravelling the Connection for a Healthier Future

Polycystic ovary syndrome (PCOS) is a common endocrine disorder affecting approximately 12-18% women of reproductive age. It typically manifests as menstrual irregularities, hirsutism, and polycystic morphology on pelvic ultrasonography, with menstrual irregularities being the most common presenting feature. PCOS is a significant cause of female infertility due to anovulation, impacting 6-10% of women in the United States. Additionally, women with PCOS are at a high risk of developing metabolic syndrome, with prevalence rates reported as high as 46% in this population. A study in India found that the incidence of metabolic syndrome is 4.2 times higher in women with PCOS than in the general population. Long-term, these women are also at increased risk for type 2 diabetes, cardiovascular diseases, dyslipidemia, metabolic dysfunction-associated fatty liver disease (MAFLD), sleep apnea, and psychological issues.

Table 1. Definition of Metabolic syndrome

NCEP	WHO	WHO modified*
Any three of the following criteria: Fasting plasma glucose ≥110 mg/dl	Insulin resistance (under hyperinsulinemic, euglycemic conditions)	Hyperinsulinemia: upper quartile of population **or** fasting plasma glucose ≥ 110 mg/dl
	Plus any two of the following criteria:	**Plus any two of the following criteria:**
Hypertension ≥ 130 mmHg systolic or ≥ 85 mmHg diastolic blood pressure	Hypertension > 160/90 mmHg or controlled with drug treatment	Hypertension ≥ 140/90 mmHg or controlled with drug treatment
Obesity Waist circumference > 40 inches for males, > 35 inches for females	Obesity BMI > 30 kg/m² **or** waist-to-hip ratio > 0.9 for males, > 0.85 for females	Obesity BMI ≥ 30 kg/m² **or** waist-to-hip ratio > 0.9 for males, > 0.85 for females
Elevated triglycerides ≥ 150 mg/dl	Elevated triglycerides ≥ 150 mg/dl	Dislipidemia with either or both: Elevated triglycerides ≥ 150 mg/dl
Low HDL cholesterol < 40 mg/dl for males, < 50 mg/dl for females	Low HDL cholesterol < 35 mg/dl for males, < 40 mg/dl for females	Low HDL cholesterol < 35 mg/dl for males, < 40 mg/dl for females
	Microalbuminuria > 20 µg/min or albumin-to-creatinine ratio ≥ 20 mg/g	

Modified as described in the Kuopio study.

Pathogenesis:
The pathophysiology of PCOS is complex and multifactorial, involving developmental, environmental, genetic, and epigenetic factors.

Insulin Resistance:
Insulin resistance (IR) is central to PCOS, affecting about 30% of non-obese and up to 70% of obese individuals. Although not used in diagnostic criteria, IR and hyperinsulinemia lead to androgen excess, common in both PCOS and metabolic syndrome. Women with PCOS also have a higher risk of glucose intolerance with a prevalence of impaired fasting glucose (3%), impaired glucose tolerance (15.2%), and type 2 diabetes (1.5%).

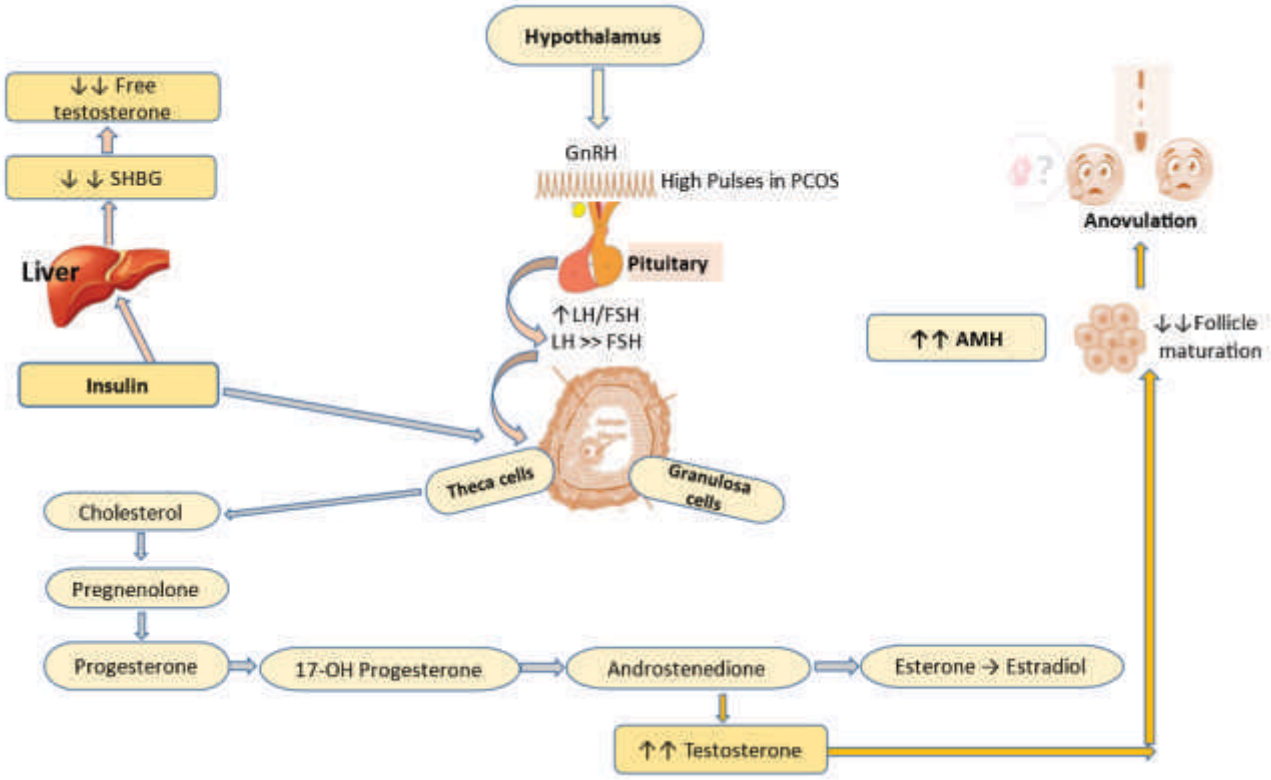
Hyperandrogenism:
Hyperandrogenism, closely linked to IR and obesity, results from hyperinsulinism reducing sex hormone-binding globulin (SHBG) and increasing ovarian and adrenal androgen production. Elevated androgens in turn promote abdominal fat accumulation, IR, impaired follicular growth, and anovulation. Research suggests hyperandrogenism may also contribute to chronic inflammation and ovarian fibrosis.

Obesity:
Central obesity is found in about 40% of women with PCOS and results from genetic factors, poor diet and inactivity. It leads to adipocyte dysfunction and excessive adipokine release, contributing to IR.

Environmental Factors:
Sedentary lifestyles and exposure to endocrine disruptors (EDs) can alter insulin action and contribute to PCOS. Further research is needed to understand these mechanisms.

Genetic and Epigenetic Factors:
Genetic predisposition is significant in PCOS, with studies indicating a 50% likelihood of sisters sharing the condition. Adverse perinatal environments can cause lasting gene expression changes, increasing disease risk. Androgen exposure during this period can induce PCOS-like phenotypes in adult females.

Figure 1. Multifactorial pathology of PCOS:



Potential Metabolite-Related Therapeutic Strategies for PCOS:
Implementing a structured approach for the early detection and management of metabolic syndrome, particularly in women of reproductive age, would be highly beneficial to the healthcare system.

Table 2. metabolic syndrome risk factor screening in women with PCOS :

Screening parameters	Frequency of assessment
Cigarette smoking	At every visit, obtain history of recent smoking habits, if any, or cessation
Obesity (weight, BMI, waist circumference)	At every visit
Blood pressure	For women with a BMI <25 kg/m^2, annually For women with a BMI ≥25 kg/m^2, at every visit
Complete lipid profile	For women with a normal profile, every 2 years For women with an abnormal profile or excess weight, annually
Oral glucose tolerance test (75 g)	All women, every 2 years Women with risk factors (age >40 years, ethnicity, physical inactivity, smoking, waist circumference (>80 cm), BMI ≥25 kg/m^2, hypertension, previous gestational diabetes mellitus, family history of diabetes mellitus), annually

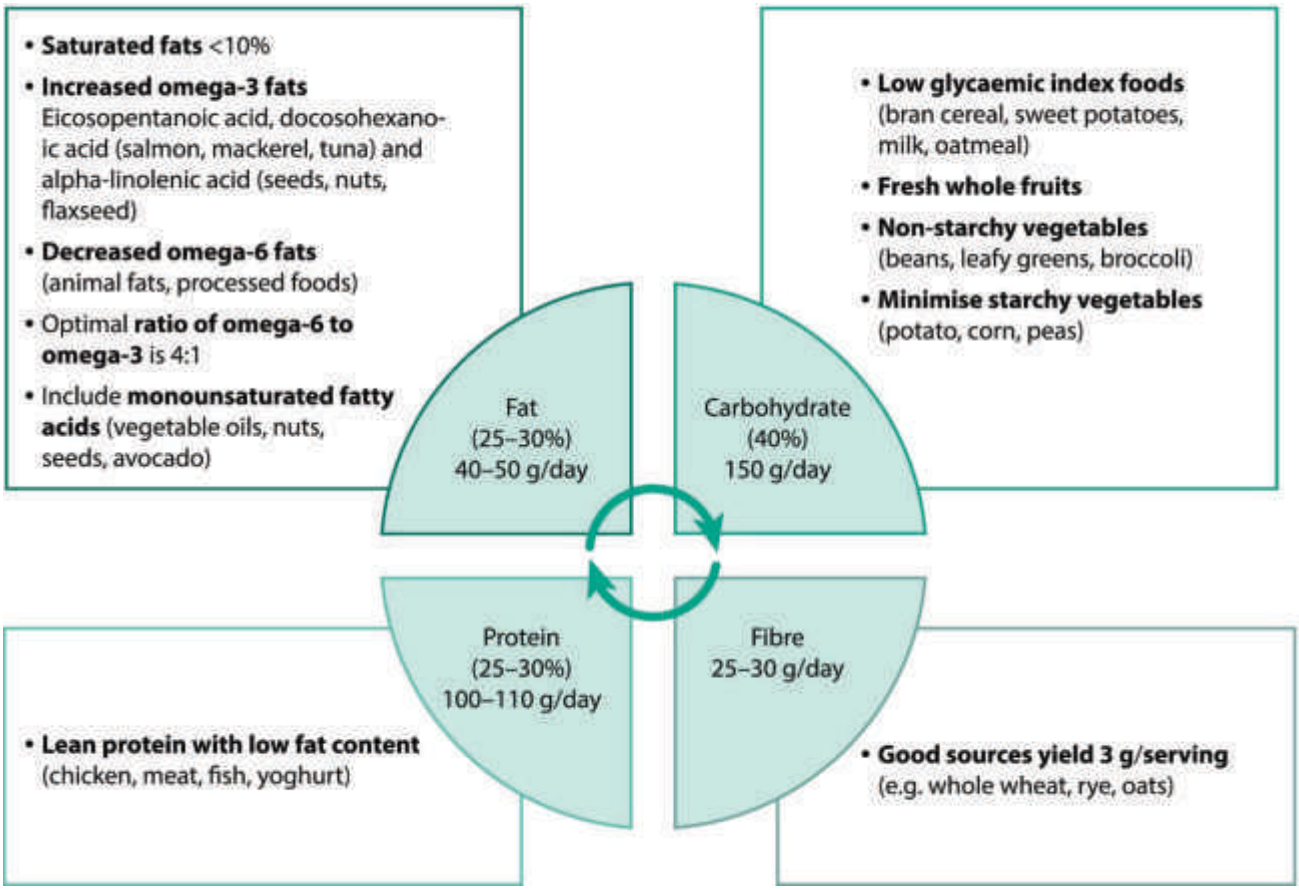
Although there is no established cure for PCOS, but lifestyle changes have shown significant improvement in symptoms and complications. An ideal treatment option would be the one which addresses the underlying etiology of both PCOS and MS. But unfortunately, there is no single treatment option available to achieve this goal.

1. Lifestyle modification:
The initial therapy for PCOS is weight loss as obesity causes worsening of PCOS symptoms. Lifestyle modifications which include diet and exercise might improve insulin resistance and hyperandrogenism and are recommended for primary CVD prevention.

A meta-analysis demonstrated that a low carbohydrate diet, particularly when maintained long-term, is advantageous for managing PCOS. Additionally, research suggests that the Mediterranean diet, rich in complex carbohydrates, fiber, and monounsaturated fats, may be among the most effective dietary strategies for women with PCOS.

The Endocrine Society clinical practice guidelines suggest the use of exercise along with diet modification as the first line treatment to manage obesity in women with PCOS. Weight loss of approx. 7% of body weight with diet and exercise leads to a 58% decrease risk of developing type 2 diabetes.

Figure 2. Diet plan with quantities calculated for a 1500 calorie diet:



Exercise enhances glucose disposal and improves muscle sensitivity to insulin. In women with PCOS, those who reported engaging in 8 hours of sports activities per week showed improvements in acne and menstrual irregularities. Even without significant weight loss (less than 5%), exercise alone increased insulin sensitivity, reduced the free testosterone index, and induced ovulation in 9 out of 18 obese PCOS patients .

2. Insulin sensitizers:

Metformin is commonly used in PCOS management. The guidelines particularly recommend metformin in those patients with PCOS with failed lifestyle modification and who have impaired glucose tolerance or type 2 diabetes. A combination of lifestyle and metformin is more beneficial than lifestyle alone in reducing BMI and adipose tissue levels. It also regulates the menstrual cycle in women with PCOS.

Pioglitazone significantly improves endocrine and metabolic irregularities in women with PCOS, and it can be used as a beneficial alternative to metformin in women who are unable to take or tolerate metformin, particularly who are not obese.

3. Inositol:

It is considered as vitamin B and exists in two forms: mayo-inositol (MI) and D-chiro-inositol (DCI). These act as insulin sensitizers and improves oocyte quality and different studies have been exploring the right doses and isoforms for PCOS females.

4. GLP-1 receptor analogues:

These are newer treatment options for obesity and in turn improving PCOS and metabolic syndrome in females with obesity. These agents have unique advantage of delayed gastric emptying, decrease satiety and improving insulin sensitivity. The clinical evidence has reported good results in terms of weight loss, improving hyperandrogenism and insulin resistance .

4. Bariatric surgery:

It is an effective treatment option for females with morbid obesity. This procedure improves body weight, insulin resistance and metabolic parameters,

which in turn also improves PCOS symptoms and long-term complications. A recent meta-analysis of nine studies involving 234 obese patients with PCOS found that bariatric surgery led to significant improvements in BMI, blood glucose levels, insulin resistance, and hypertension. Additionally, the surgery reduced hyperandrogenism and its related symptoms, while also enhancing menstrual regularity and increasing ovulation rates .

5. Statins:

Statin therapy works by inhibiting HMG-CoA reductase, an enzyme involved in cholesterol production, leading to improved lipid profiles. It has shown long-term benefits in reducing the risk of cardiovascular disease. However, the use of statins is limited in women who are trying to conceive or are already pregnant due to concerns about potential fetal teratogenic effects. It is recommended that statin therapy be discontinued before attempting conception.

Conclusion:

PCOS should not be considered as a gynecological disease only, it has a strong association with metabolic syndrome and long-term cardiovascular complications. It also provides an opportunity to begin primary prevention at the time of diagnosis at a young age. Lifestyle modification is the first line treatment option for PCOS, and multiple treatment options are available to alleviate the symptoms of disease. However, there is no single treatment effective for all and individualization of care is key to managing these patients.

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Launch of ENDOGRANT

The Pakistan Endocrine Society is excited to announce the signing of a Memorandum of Understanding (MoU) with Getz Pharma for the launch of ENDOGRANT—an innovative initiative aimed at advancing clinical trials related to diabetes and endocrinology at the national level. This collaboration underscores our commitment to enhancing evidence-based practices in these crucial fields.

ENDOGRANT will provide essential support for researchers and clinicians, fostering a robust environment for scientific inquiry and the development of effective treatment strategies. Together, we aim to improve patient outcomes and promote a healthier future for individuals affected by endocrine disorders and diabetes across Pakistan.

Demystifying Puberty and Pubertal disorders

The collaboration between the Pakistan Endocrine Society and the Society of Pediatric Endocrinology and Diabetes of Pakistan successfully created a comprehensive awareness program on puberty and pubertal disorders. This program aimed to educate healthcare professionals, particularly those in endocrinology, pediatrics, gynecology, and family medicine, about the intricacies of puberty and its potential disorders. The program consisted of two webinars followed by a full day symposium. The first Webinar focused on the physiology of the male and female reproductive systems and second webinar provided an overview of normal puberty, along with discussions on the embryology and genetics of the reproductive system. After these webinars, a full day symposium was planned on 29th September in four cities (Karachi, Lahore, Peshawar and Islamabad) at the same time. In this symposium, morning session (9 AM - 1 PM) was focused on lectures covering various male and female pubertal disorders while in afternoon Session, interactive workshops were conducted to provide hands-on experience and in-depth learning.

This event was particularly targeted at fellows in adult and pediatric endocrinology, as well as residents in medicine, gynecology, and family medicine. The combination of webinars and the symposium enabled participants to gain both theoretical and practical insights into pubertal disorders and their management.

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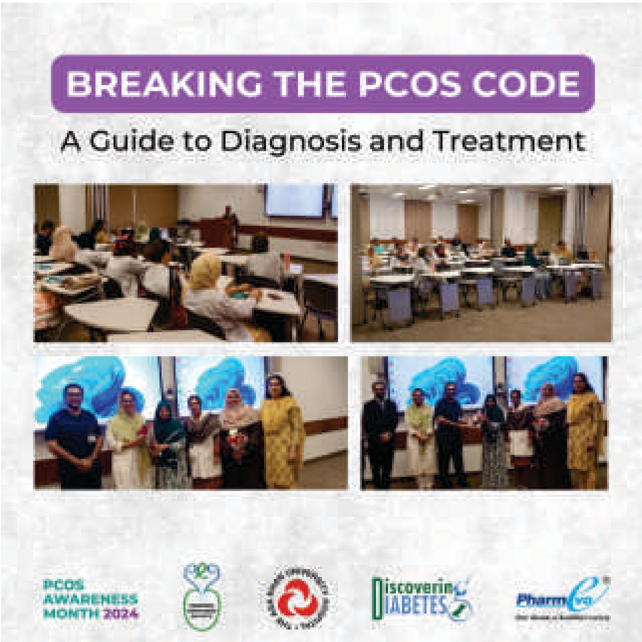
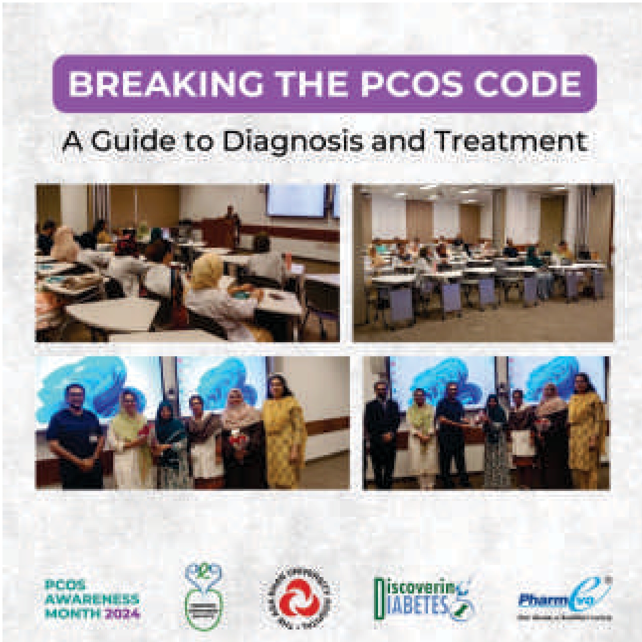
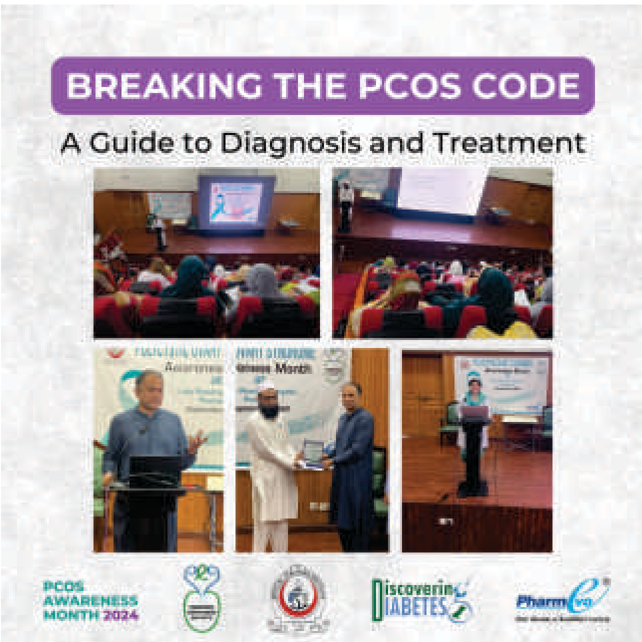
Pakistan Endocrine Society's PCOS Awareness Month Initiatives: A September of Learning and Engagement

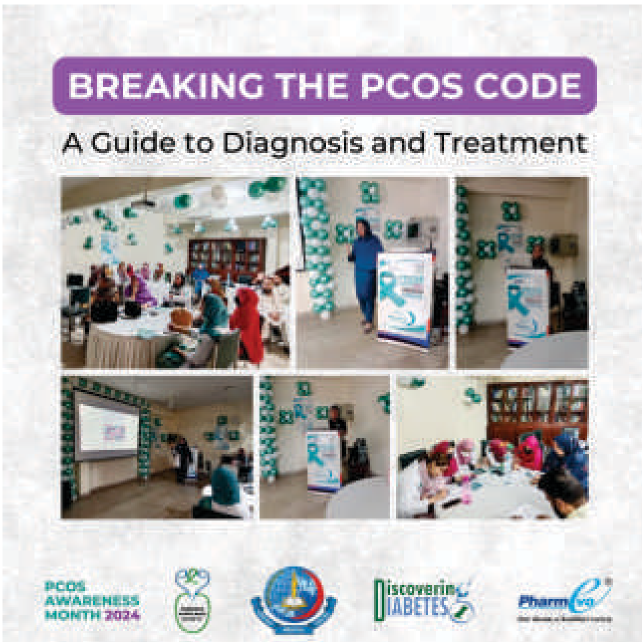
In September, to commemorate the PCOS (Polycystic Ovary Syndrome) Awareness Month, Pakistan Endocrine Society (PES) led an impactful series of activities across Pakistan. These initiatives aimed to foster a deeper understanding of PCOS among healthcare professionals (HCPs) and raise public awareness about this often misunderstood condition. PES's endeavors spanned workshops, live sessions, webinars, and digital content, all contributing to a better grasp of PCOS management and its early diagnosis.

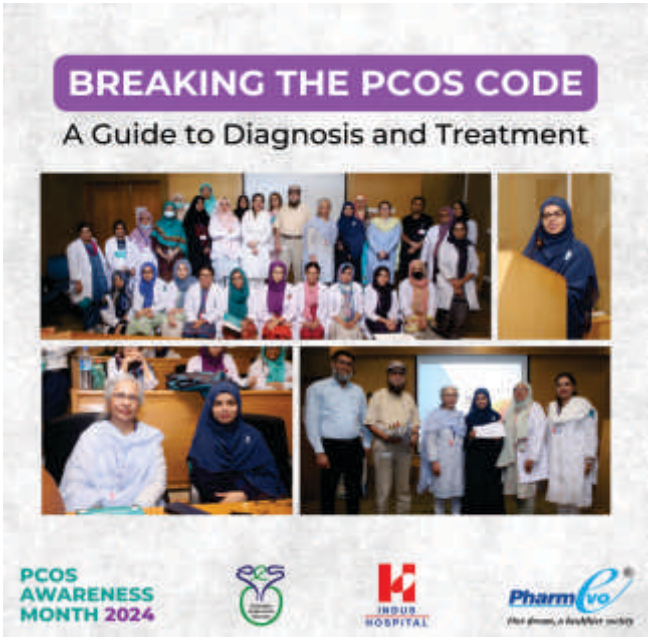
Workshops for Healthcare Professionals PES organized instructive workshops in leading hospitals across Pakistan, engaging healthcare professionals in discussions and training for improved PCOS management. These sessions were critical in bridging knowledge gaps, helping doctors and allied health staff provide better care to patients living with PCOS.







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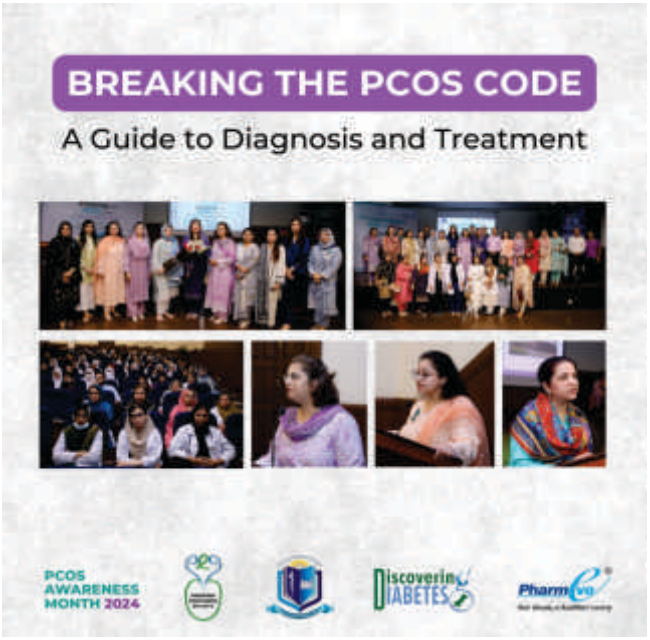
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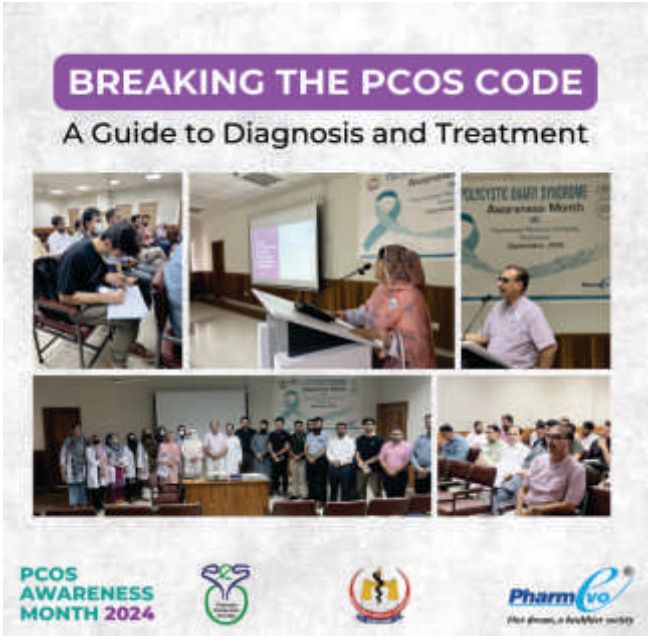
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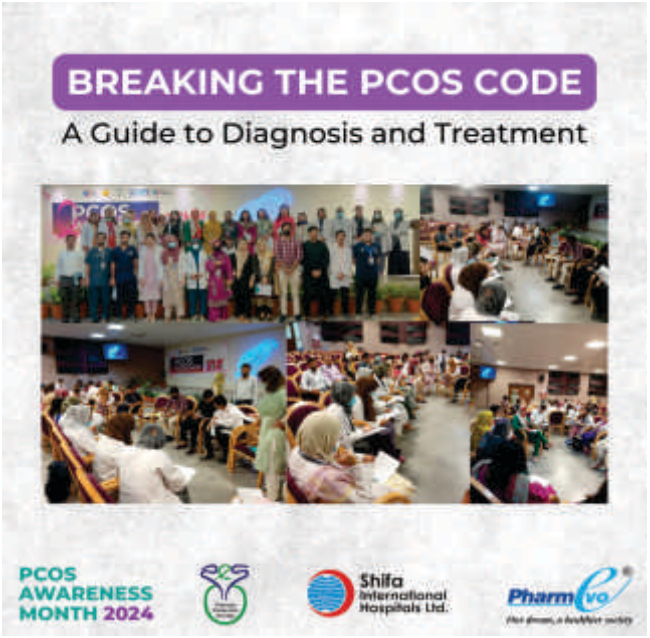
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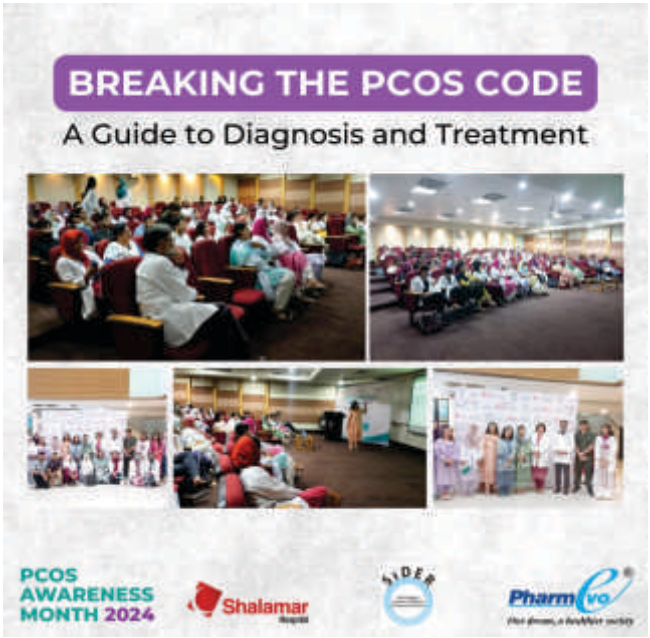
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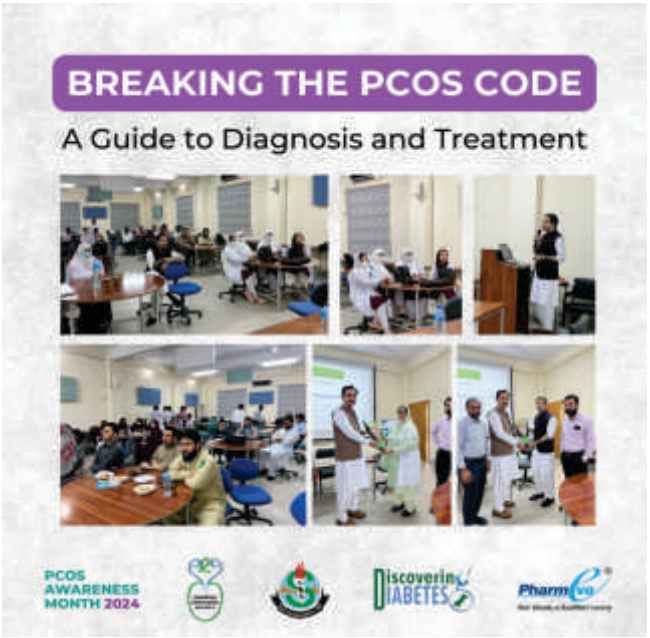
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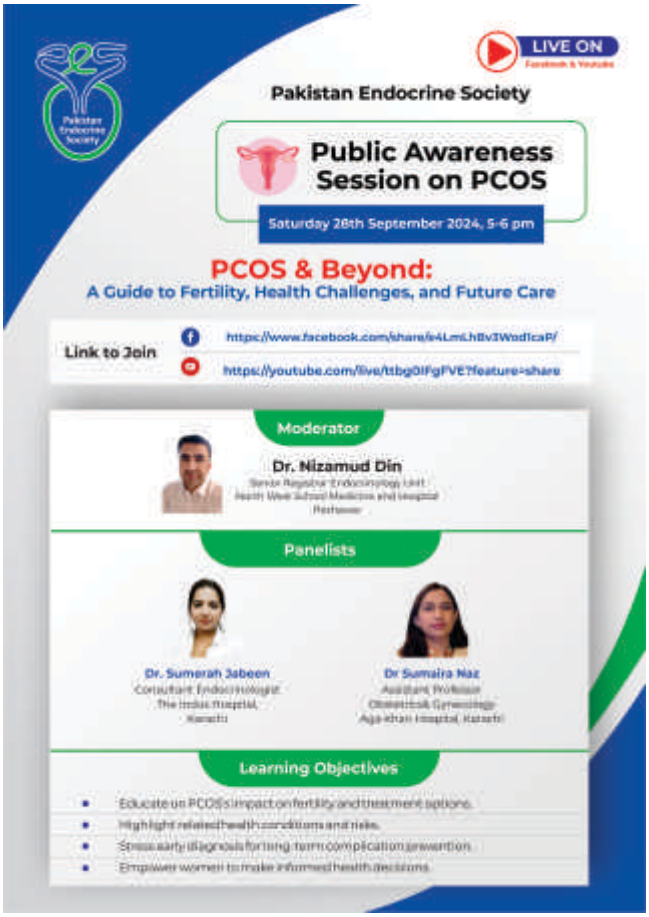
Public Awareness through Facebook Live Sessions

For general public awareness on PCOS, PES hosted a series of Facebook live sessions where experts from endocrinology, gynecology, dermatology, and nutrition actively participated, sharing insights into PCOS management, symptoms, and its impact on women's health. These sessions provided valuable information in an accessible manner from trusted medical professionals.



Webinar: Navigating the PCOS Hormonal Maze

One of the highlights of the month was the webinar titled "Navigating the PCOS Hormonal Maze," where Dr. Aisha Sheikh, a renowned endocrinologist, shared her expertise with healthcare professionals. She discussed the various presentations of PCOS across the lifespan of women, offering valuable clinical insights that enriched the understanding of this complex condition. She was joined by Dr. Sadia Masood who focused on the dermatological aspects of PCOS .

Pakistan Endocrine Society

Join us for an insightful webinar on

Navigating the PCOS Hormonal Maze

Saturday 21st September 2024, 3-4 pm

This event aims to deepen our understanding of PCOS across various life stages, highlighting hormonal and dermatological challenges. The webinar also aims to equip healthcare professionals with practical, evidence-based treatment strategies to improve patient outcomes

Link to Join https://us02web.zoom.us/webinar/register/WN_811SyhNZQwOIp00tQvM-rg

Moderator

Dr. Muhammed Saleem
Consultant Endocrinologist
Aga Khan Hospital,
Hyderabad Sindh

Talks & Speakers

Talk 1 — **PCOS - Challenging Cases**

Dr. Aisha Sheikh
Consultant Endocrinologist
The Aga Khan University,
Karachi
President, PES

Talk 2 — **Dermatological Manifestations of PCOS and their management**

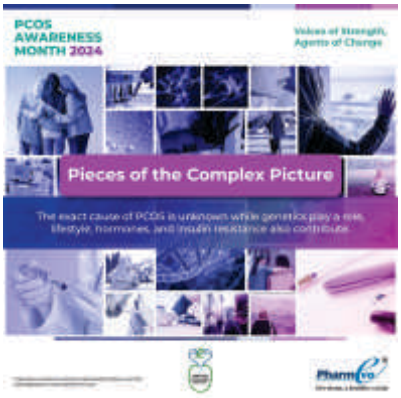
Dr Sadia Masood
Associate Professor-Dermatology
Director Residency Programs
Department of Medicine
The Aga Khan University, Karachi

Learning Objectives

- Awareness and Understanding of PCOS Across Life Stages
- Improved Knowledge of Dermatological Management of PCOS
- Integration of Multidisciplinary Care Approaches
- Practical Application of Treatment Modalities

Digital Advocacy: Social Media and Video Content

PES also embraced digital platforms to spread awareness about PCOS. Educational online videos and static posts were shared on various social media forums of PES, reaching a broad audience. These posts highlighted key aspects of PCOS, from symptoms and treatment options to patient advocacy, further amplifying the reach of our awareness campaign.



Patient Advocacy via Radio

To engage a wider audience, PES carried out radio programs on FM 100, broadcasting from Karachi and Lahore. These programs were tailored to raise awareness among the general public, emphasizing the importance of early diagnosis and management of PCOS. Through this medium, we were able to foster a better understanding of the disease and its impact on women's health.

Overall, the collective efforts during PCOS Awareness Month created a wave of learning and understanding, benefiting both healthcare professionals and the general public. PES remains committed to advocating for women's health and addressing critical issues like PCOS through collaborative and impactful initiatives.

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Role of Gut Microbiota in Polycystic Ovary Syndrome

Introduction
Polycystic ovary syndrome (PCOS) is a complex condition with multifactorial origins, including genetic, neuroendocrine, and lifestyle factors, alongside emerging evidence of gut microbiota involvement.

Gut Microbes and Metabolic Dysfunction
The gut microbiota comprises around 1014 microorganisms, which significantly influence human metabolism. Dysbiosis may contribute to insulin resistance (IR), a key factor in PCOS. Notable studies show that transferring microbiota from lean donors can improve insulin sensitivity in metabolic syndrome patients, indicating a link between gut microbiota and PCOS pathogenesis.

Chronic Inflammation and PCOS
Tremellen et al. propose a "gut barrier endotoxemia-inflammation mechanism," where lipopolysaccharides (LPS) from gut flora led to systemic inflammation and insulin resistance, further exacerbating PCOS.

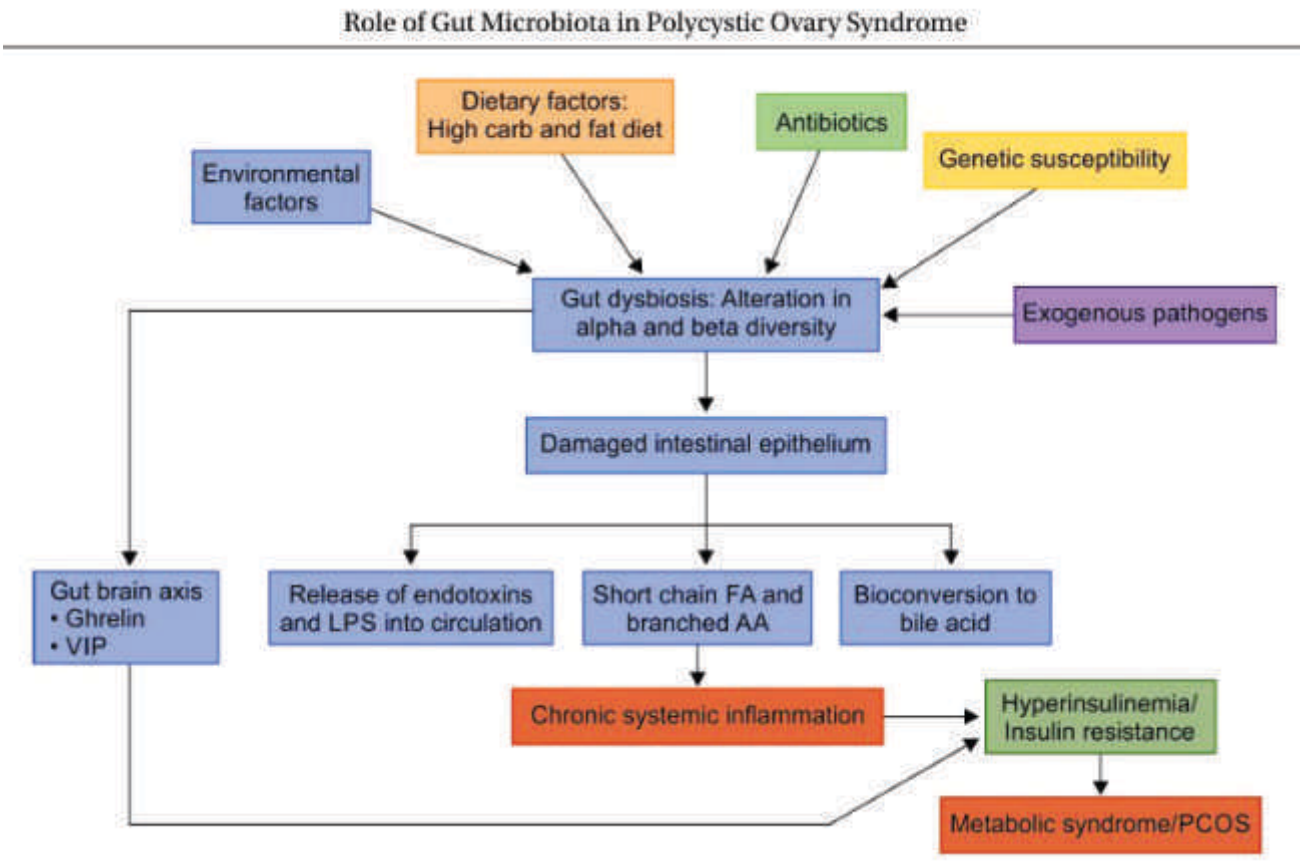

Fig. 1: Pathogenesis of PCOS by dysbiosis of gut microbiota

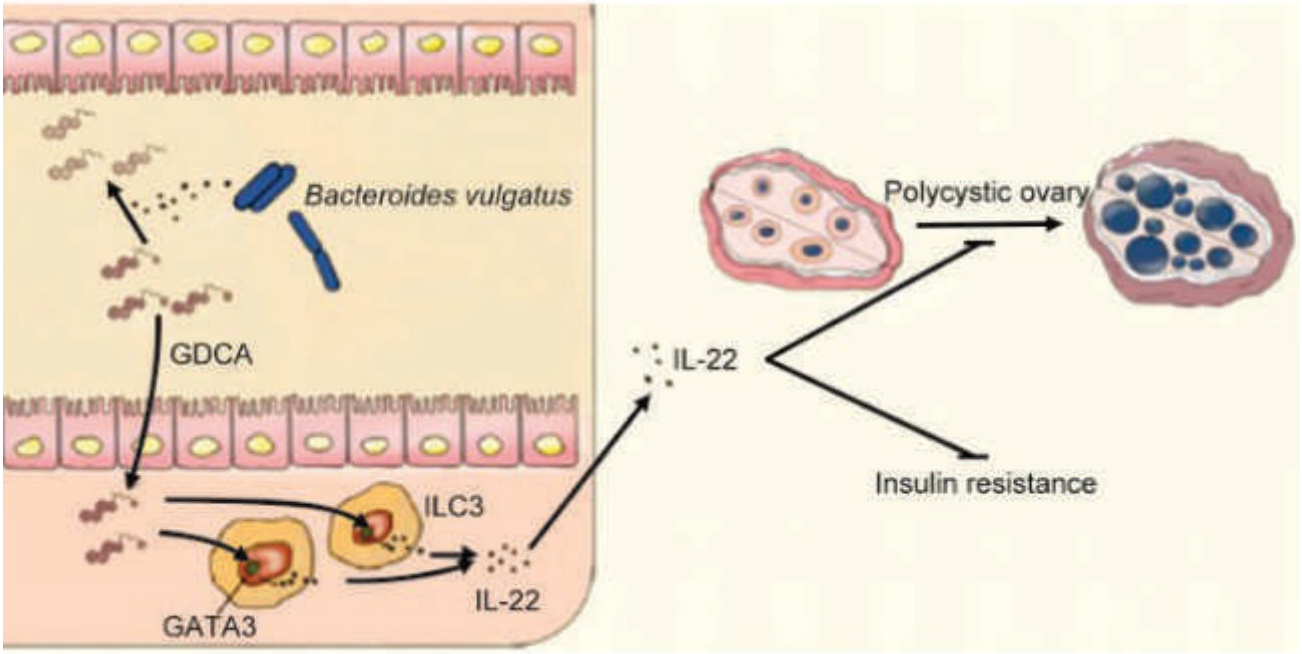

Fig. 2: Role of Bacteroides in the pathogenesis of insulin resistance and PCOS

Gut Biodiversity in PCOS

Altered gut microbial diversity, specifically decreased levels of beneficial bacteria (e.g., Lactobacillus and Bifidobacterium), and increased levels of harmful bacteria (e.g., Bacteroidaceae) have been observed in PCOS patients. This dysbiosis correlates with clinical parameters such as insulin resistance and hormonal imbalances.

Gut-Brain Axis and Hormonal Influence

Gut hormones, including Ghrelin and Peptide YY, are impacted by gut microbiota, potentially affecting body mass index (BMI) and insulin resistance. Additionally, sex hormones appear to influence microbial diversity, with evidence of reduced α diversity in women with hyperandrogenism.

Short-chain Fatty Acids (SCFAs)

SCFAs, particularly butyrate, play a protective role for the intestinal barrier and improve insulin sensitivity. Probiotics like Bifidobacterium and Faecalibacterium can increase SCFA levels, contributing to better metabolic outcomes in PCOS.

Treatment Options

Emerging therapeutic strategies include probiotics, prebiotics, and synbiotics aimed at restoring gut microbiota balance. Dietary interventions promoting high fiber and low carbohydrate intake also help modulate gut flora.

Future Research

Further exploration of gut microbiota's clinical implications in PCOS is warranted, with potential avenues including fecal microbiota transplantation (FMT) and interleukin-22 supplementation to enhance insulin sensitivity.

Conclusion

The gut microbiota significantly impacts the pathogenesis and management of PCOS, offering new insights into therapeutic approaches for this common condition.

Reference:

Garg R, Dhiman S, Gupta A. Role of Gut Microbiota in Polycystic Ovary Syndrome.

ENDOHUB

ENDOHUB case study competition which is an initiative of Pakistan Endocrine Society and Getz Pharma conducted its 4th Session in Karachi. This is a learning and skills development platform where Endocrine Fellows compete for the best clinical cases from the field of Endocrine and the best case study presenter is awarded with educational grant.

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