


Management of Polycystic Ovary Syndrome in the Present Day: An Updated Review

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Abstract

Polycystic ovary syndrome (PCOS) is a common endocrine disorder affecting women of reproductive age, characterized by ovulatory dysfunction, hyperandrogenism, and polycystic ovaries detected via ultrasound. The management of PCOS has evolved significantly, with integrated approaches that include lifestyle modifications, pharmacological therapies, and personalized interventions. This article reviews recent advances in PCOS treatment, focusing on aspects such as metabolic control, restoration of reproductive function, and improved quality of life. Recent studies reinforce the importance of individualized treatment and a multidisciplinary approach, promoting better clinical and psychological outcomes for patients.

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Introduction

Polycystic ovary syndrome (PCOS) is one of the most common endocrine disorders in women of reproductive age, affecting between 6% and 20% of this population, depending on the diagnostic criteria used. It is characterized by a heterogeneous set of signs and symptoms, including hyperandrogenism, chronic anovulation, and polycystic ovaries detected via ultrasound. Furthermore, PCOS is frequently associated with metabolic conditions such as insulin resistance, obesity, dyslipidemia, and an increased risk of cardiovascular diseases, as well as psychological disorders such as anxiety and depression. The etiology of PCOS is not yet fully understood, but studies suggest the involvement of genetic and environmental factors. The diagnosis of PCOS has evolved over time, incorporating more precise criteria and advanced technologies. The Rotterdam criteria, established in 2003, remain widely used, requiring the presence of at least two of the three criteria: oligo/anovulation, clinical or biochemical signs of hyperandrogenism, and polycystic ovaries on ultrasound. Recently, the measurement of anti-Müllerian hormone (AMH) has emerged as a promising marker in identifying PCOS due to its correlation with antral follicle count and ovarian function.

The management of PCOS presents challenges due to its complexity and phenotypic variations among patients. In recent years, significant advances have been made in understanding the pathophysiological mechanisms of PCOS and in developing more effective therapeutic approaches. These approaches include pharmacological interventions such as the use of combined oral contraceptives, insulin sensitizers, anti-androgens, and ovulation inducers, as well as non-

pharmacological treatments such as lifestyle modifications. Additionally, a multidisciplinary approach involving endocrinologists, gynecologists, nutritionists, and psychologists has proven essential for a more comprehensive and effective management strategy.

Objectives

This article aims to review current strategies in PCOS management, highlighting recent advances and integrated approaches that contribute to improving clinical outcomes and patients' quality of life.

Materials and Methods

A bibliographic review was conducted, including articles published in databases such as PUBMED, ScienceDirect, and Scielo to support the study.

Discussion

Managing PCOS requires a multidimensional approach due to the syndrome's complexity and the variety of phenotypes presented by patients. Lifestyle modification, including adopting a balanced diet and regular physical exercise, is the first-line intervention for overweight or obese women. Recent studies have shown that modest weight loss, between 5% and 10%, can significantly improve ovulatory function, reduce circulating androgen levels, and enhance insulin sensitivity. Pharmacological treatments also play a crucial role in PCOS management. Combined oral contraceptives remain the therapy of choice for women who do not wish to conceive, as they help regulate menstrual cycles, reduce hyperandrogenism, and offer endometrial protection. Metformin, an insulin sensitizer, is often

used to improve insulin resistance and promote ovulation, especially in obese women with PCOS.

Another therapeutic option includes the use of ovulation inducers, such as clomiphene citrate and letrozole, for patients who desire pregnancy. Recent studies indicate that letrozole is a more effective alternative to clomiphene citrate due to higher ovulation and pregnancy rates. Furthermore, anti-androgens such as spironolactone are recommended for treating hyperandrogenism symptoms, such as acne and hirsutism, but should be used cautiously in women who wish to conceive due to the risk of fetal feminization. Beyond clinical treatments, psychological support is essential in addressing the emotional disorders frequently associated with PCOS. Cognitive-behavioral therapy and follow-ups with specialized psychologists can help improve self-esteem and reduce anxiety and depression. Therefore, a multidisciplinary approach is crucial to meeting the physical and emotional needs of patients. Finally, advances in genetic and molecular research may contribute to more personalized treatments in the future. Studies have identified several genes associated with PCOS, which may serve as therapeutic targets. Additionally, new therapies, such as GLP-1 receptor agonists, have shown promise in reducing body weight and improving metabolic parameters in women with PCOS.

Conclusion

The management of polycystic ovary syndrome requires an integrated and individualized approach, considering patients' metabolic, reproductive, and psychological aspects. Lifestyle changes remain the foundation of treatment, while pharmacological interventions, such as combined oral contraceptives, metformin, and ovulation inducers, are essential for improving clinical outcomes. A multidisciplinary approach is fundamental to ensuring comprehensive and effective care, promoting better quality of life for patients. It is important to emphasize that future research should focus on elucidating the pathophysiological mechanisms of PCOS, identifying diagnostic biomarkers, and developing more personalized therapies. With scientific advances, it is expected that PCOS management will continue to evolve, offering innovative solutions to meet the diverse needs of this population.

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