



PCOS MANAGEMENT IN ADOLESCENT AND REPRODUCTIVE AGE GROUP WOMEN

Obstetrics & Gynaecology

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ABSTRACT

Introduction: Polycystic Ovary Syndrome (PCOS) is a complex endocrine disorder affecting women of reproductive and adolescent age. It is characterized by hormonal imbalance, insulin resistance, and metabolic dysfunction. The study aimed to evaluate the incidence, treatment modalities, and outcomes in women with PCOS. **Materials and Methods:** A hospital-based cross-sectional study was conducted October 2020 to September 2022 at Alluri Sitarama Raju Academy of Medical Sciences, Eluru. 310 women aged 15–35 years diagnosed with PCOS were included. Clinical features, hormonal and ultrasound parameters were assessed. Treatment outcomes related to menstrual regularity, acne, hirsutism, BMI, and fertility were evaluated. **Results:** The most prevalent symptom was oligomenorrhea (82.4%), followed by hirsutism (66.9%) and acne (21.7%). Majority of patients were in the 26–30 age group. Treatment showed improvement in BMI, menstrual patterns, acne, and conception rates in infertile women. **Conclusion:** Early diagnosis and individualized management strategies including lifestyle changes and pharmacotherapy significantly improve outcomes in women with PCOS.

KEYWORDS

INTRODUCTION

Polycystic Ovary Syndrome (PCOS) is a prevalent endocrine disorder in women characterized by hyperandrogenism, irregular menses, and polycystic ovaries. It is a multifactorial disease with genetic, hormonal, and environmental influences. PCOS manifests during adolescence and continues through reproductive years. Common symptoms encompass acne, hirsutism, irregular menstrual cycles since menarche, and signs of hyperandrogenism.

Diagnosis is typically based on chronic anovulation, elevated androgen levels, and the presence of polycystic ovaries visible on ultrasound. PCOS can be classified into three phenotypes: (i) elevated androgen levels with ovarian cysts and occasional anovulation, (ii) elevated androgen levels with occasional anovulation, and (iii) elevated androgen levels with ovarian cysts.

Complications associated with PCOS include elevated blood sugar levels, obesity, metabolic dysfunction, and challenges with fertility, often linked to abnormalities in pituitary gland function, oogenesis, and insulin secretion.

Medications such as metformin, oral contraceptives, and myo-inositol have shown benefits for adolescents with PCOS. Oral contraceptives, which include synthetic progesterone and combined progesterone-estrogen pills, have been associated with improvements in menstrual cycle regularity, acne reduction, decreased obesity, lower blood glucose levels, and better cholesterol and low-density lipoprotein (LDL) profiles. However, these treatments should be continued only if side effects are minimal. Before starting oral contraceptives, it is advisable to make changes in lifestyle, diet, and body mass index (BMI). Additionally, medical nutrition therapy and nutritional supplements can help alleviate symptoms and restore ovulation, providing an ideal approach for managing PCOS. Results indicate that treatment has led to improvements in menstrual cycle regularity, facial acne, obesity, blood glucose levels, and overall cholesterol and low-density lipoprotein (LDL) levels. However, treatment should be maintained only if side effects are minimal.

Prior to initiating oral contraceptives, it is advisable to implement changes in lifestyle, diet, and body mass index (BMI). Medical nutrition therapy and nutritional supplements have been effective in

alleviating symptoms and restoring ovulation. Hormonal contraceptives are recommended as the first line of treatment for managing menstrual irregularities, hirsutism, and acne.

For infertility, clomiphene is used, while lifestyle modifications offer benefits for managing obesity and improving overall health. Thiazolidinediones are noted for their favorable benefit-to-risk ratio. Myo-inositol effectively supports normal ovarian function and enhances ovum quality. Improvement in symptoms and normalization of the menstrual cycle typically occurs within 4–12 months.

AIMS AND OBJECTIVES

Aim:

To study incidence, different treatment modalities and outcomes in women with PCOS.

Objectives:

1. To diagnose PCOS in adolescent and reproductive-age women.
2. To recommend various treatment options for managing in pcos.
3. To evaluate clinical outcomes.

MATERIALS AND METHODS

Study Area:

Department of Obstetrics and Gynaecology, Alluri Sitarama Raju Academy of Medical Sciences, Eluru, Andhra Pradesh, India.

Study Design:

Cross-sectional observational study.

Sample Size:

310 women with PCOS.

Duration of Study:

October 2020 to September 2022.

Sample Size Tools: Structured questionnaire, clinical exam, ultrasound, hormone levels.

Analysis: SPSS v20, $p < 0.05$ considered significant.

INCLUSION AND EXCLUSION CRITERIA

Inclusion Criteria:

1. Women between 15 to 35 years age group with PCOS
2. Women with infertility due to PCOS.

3. Women with menstrual abnormalities
4. Women with obesity, hyperandrogenism due to PCOS.

EXCLUSION CRITERIA:

1. Women <15 and >35 years
2. Hyperandrogenism due to other causes
3. Any other ovarian pathologies
4. Menstrual abnormalities due to other causes
5. Infertility due to other causes
6. Obesity due to other causes
7. Hirsutism due to other causes

RESULTS

Table 1: Age Distribution

Age Group (Years)	Number	Percentage (%)
15–25	87	28.0
26–30	217	70.0
31–35	6	2.0

Table 2: Clinical Features Distribution

Clinical Feature	Number	Percentage (%)
Oligomenorrhea	255	82.4
Hirsutism	207	66.9
Overweight	67	21.7
Acne	67	21.7
Obesity	66	21.4
Infertility	53	17.2
Amenorrhea	18	5.9

Table 3:: Comparison of PCOS Treatment Outcomes by Intervention and Condition

Treatment given	Condition	n	Baseline	End of treatment	p-value
Lifestyle modification	Hirsutism	207	46 (52.3%)	42 (47.7%)	0.631
OCP	Hirsutism	207	51 (92.7%)	4 (7.3%)	0.001*
Metformin/Letrozole/ Combined	Hirsutism	207	110 (84.0%)	21 (16.0%)	0.001*
Lifestyle modification	Acanthosis Nigricans	71	10 (66.7%)	5 (33.3%)	0.688
OCP	Acanthosis Nigricans	71	19 (52.8%)	17 (47.2%)	0.003*
Metformin/Letrozole/ Combined	Acanthosis Nigricans	71	41 (85.4%)		0.002*
Lifestyle modification	Irregular menstrual pattern	288	72 (75.0%)	24 (25.0%)	0.001*
OCP	Irregular menstrual pattern	288	69 (76.7%)	21 (23.3%)	0.001*
Metformin/Letrozole/ Combined	Irregular menstrual pattern	288	147 (83.5%)	29 (16.5%)	0.001*

Table 4: Success of conception in PCOS women with infertility

Treatment Given	Conceived					
	Yes	%	No	%	Total	%
Letrozole	10	37.0	17	63.0	27	100.0
Both Metformin & Letrozole	24	92.3	2	7.7	26	100.0
Total	34	64.2	19	35.8	53	100.0

Chi-square=17.59, p=0.001* (p<0.05, significant)

DISCUSSION

In the present study, the majority of participants were within the 26 to 30 years age group, representing 70.0% of the total 310 participants. The 15 to 25 years age group constituted 28.0% (87 individuals), while a small proportion, 2.0% (6 individuals), were in the 31 to 35 years age group.

When considering the participants' residences, a significant majority, 69.0% (214 participants), resided in urban areas, whereas 31.0% (96 participants) were from rural areas.

Regarding occupation, students formed the largest group, comprising

51.0% of the participants. Homemakers followed closely, making up 47.0%. The smallest group included those who were employed, accounting for only 2.0%. The distribution of clinical patterns among the study participants revealed that Oligomenorrhea was the most common, affecting 82.4% (255 individuals) of the total 310 participants. Hirsutism was also highly prevalent, occurring in 66.9% (207 individuals). Both overweight and acne were observed in 21.7% (67 individuals) of the participants, while 21.4% (66 individuals) were affected by obesity. Infertility was reported by 17.2% (53 individuals), and amenorrhea was the least common condition, affecting 5.9% (18 individuals).

TREATMENT OUTCOME:

The present study evaluated the effectiveness of the various treatment for PCOS in managing symptoms and achieving successful conception in women with PCOS and continue to explore optimal treatment combinations and their long-term outcomes. Infertility. Metformin was the most commonly prescribed treatment, followed by oral contraceptive pills (OCP), and combinations of Metformin with OCP or Letrozole. Lifestyle modifications were also frequently adopted. The success rates for conception varied significantly across treatments, with a notable 92.3% success rate in women receiving both Metformin and Letrozole. BMI reductions were significant in groups undergoing lifestyle modifications, Metformin, or combination treatments, while OCP alone showed a non-significant increase in BMI. Symptom management was also effective, with significant improvements in cases of Acanthosis Nigricans, Hirsutism, and irregular menstrual patterns, particularly in groups treated with Metformin, Letrozole, or their combinations.

The findings align with existing literature demonstrating high prevalence of menstrual irregularity, acne, and hirsutism in PCOS. Lifestyle modification combined with pharmacotherapy (metformin, COCs, myoinositol) showed promising results. Early diagnosis in adolescents is crucial to mitigate long-term reproductive and metabolic consequences.

CONCLUSION

PCOS requires a multidisciplinary approach for early diagnosis and effective management. This study highlights the varied efficacy of different treatment modalities in managing symptoms and achieving successful conception in women with PCOS. Most of the participants were young women, predominantly from urban areas, with a significant portion being students and homemakers. Clinical patterns such as oligomenorrhea and hirsutism were highly prevalent, and lifestyle modifications, along with various combinations involving Metformin, proved effective in significantly reducing BMI. Metformin, both alone and in combination with Letrozole or OCP, was particularly effective in improving insulin resistance, reducing symptoms like acanthosis nigricans, and achieving weight control. In terms of conception rates among women with infertility, the combination of Metformin and Letrozole showed a significantly higher success rate compared to Letrozole alone, highlighting the potential benefits of combined treatment strategies. Personalized care with emphasis on lifestyle interventions and appropriate medical therapy improves clinical and reproductive outcomes.

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