



## Research Article

### A PROSPECTIVE OBSERVATIONAL STUDY ON EVALUATION OF COMPLICATIONS IN WOMEN WITH POLYCYSTIC OVARIAN SYNDROME

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#### ABSTRACT

Background: Polycystic ovary syndrome (PCOS) represents the most common endocrine dysfunction in women of reproductive age and it is considered a heterogeneous and complex disorder that can impact many organ systems. Women with PCOS have higher prevalence of early pregnancy loss. Beside fertility problems, metabolic and psychological complications include insulin resistance, diabetes, hypertension, metabolic syndrome, depression are at high level in women with PCOS. However, there is evidence that lifestyle intervention limits the PCOS. Therefore, our objective is to evaluate the complications and to check quality of life improvement in PCOS women. Material and methods: Females of 15-45 years diagnosed with PCOS were included in our study. Results: Among 150 patients recruited in our study, 21-25 years age group females were highly affected with PCOS. Most of the women were with short-term complications which includes infertility, menstrual dysfunction. After frequent ultrasound scanning and general approach with the patient 50% of complications subsided due to regular medication, diet and exercise. Conclusion: From this study we conclude that to maintain Lifestyle intervention along with regular medicine improve the quality of life in PCOS women.

**Key words:** PCOS, Infertility, Menstrual dysfunction, Lifestyle modification.

#### INTRODUCTION

Polycystic ovary syndrome (PCOS) is the most prevalent endocrine disorder among premenopausal women (menstrual irregularities), characterized by heterogeneous presentation of hyperandrogenism, ovulatory dysfunction, and polycystic ovarian morphology (PCOM).<sup>1</sup> Polycystic ovary syndrome women typically have a number of small cysts around the edge of their ovaries. Ovaries containing a large number of harmless cysts that are no bigger than 8mm each. Normal ovaries have only about half this number of cysts. The cysts are egg-containing follicles that have not developed properly because of a hormone imbalance. Often in PCOS, none of these follicles develops enough to release an egg, meaning ovulation does not take place. Also, in some women, which results in many of the typical symptoms.<sup>3</sup> In India the prevalence of PCOS estimated to 9.13% to 36% among aged 18-34 years. However, it is important to make an early diagnosis in order to prevent early and late sequel of the syndrome. Early diagnosis and treatment can help control the symptoms and prevent long term problems.<sup>4</sup> Signs and symptoms of PCOS including Heavy bleeding, irregular menses, hirsutism, acne, weight gain, androgenic alopecia and darkening of the skin. The short term and long-term complications of PCOS affects the women health due to an increased incidence of early complications such as infertility and obstetric outcomes and to an increased rate of late complications as well as enhanced cardiovascular, metabolic, and oncology risks. It is very difficult to accurately define the precise extent of these complications, due to the heterogeneous nature of the syndrome, the unclear pathogenetic mechanisms, and the presence of confounding factors, such as obesity.<sup>1,12,13</sup> The treatment of infertility in PCOS includes lifestyle changes (diet and exercise), pharmacological therapies (oral agents such as clomiphene citrate, letrozole or

metformin or injectable agents such as gonadotropins), surgical therapy (laparoscopic ovarian surgery) or IVF. IVM has been proposed to offer a promising alternative to conventional IV.<sup>17,19,20</sup>

#### MATERIAL AND METHODS

It is a prospective, observational study conducted in patients from Lavanya hospital Warangal. Patients were explained about the study and relevant data was collected from patients or patient care takers by explaining them in their local language. Institutional Human Ethical Committee Endorsement was obtained after submission of protocol and IHEC number is KIMC/KMC/NCT/NIS/2018/P09.

#### Inclusion criteria

Patients are included into the study based on the following criteria: Women with age 15-45 years visiting outpatient department with irregular anovulatory periods or ultrasound polycystic ovary morphology. Women with clinical or biochemical signs of hyperandrogenism.

#### Exclusion criteria

Exclusion criteria for the study subjects includes: Women with irregular menses other than PCOS and other causes of androgen excess.

#### Study design

It is a prospective, observational study design performed for a period of 6 months and the patients with PCOS were included.

The primary goal was to achieve improvement in the reproductive and metabolic features of PCOS.

**RESULTS**

This main patient characteristics are reported in the Table 1.

A total of 79 patients included in the study of which maximum numbers of subjects were married 135 and 15 unmarried. Distribution of patients according to their age was overall 150 were included in the study of which age group between 15-20 were 19(12.6%), age group between 21-25 were 76(50.6%), age group between age group between 26-30 were 38 (25.6%), age group between 31-35 were 15 (10%), age group between 36-40 were 1(0.6%) and age group above 41 were 1 (0.6%). From all these groups maximum number of subjects were in between age of 21-25 years. From the selected population most of the patients were overweight 67(44.6%), followed by normal weight were 49 (32.6%), Obese were 32(21.5%) and underweight were 2(1.3%). Hb levels (<11 g/dL) are low in 81(54%) patients out of 150 and 69 (46%) patients have Normal Hb levels (11-15 g/dL). Menstrual flow was normal in 108/150 patients, heavy in 35 and spotting in 7 patients. We studied on haemoglobin levels in PCOS population and observed that high numbers of women with PCOS are anaemic.

**DISTRIBUTION OF PATIENTS ACCORDING TO COMPLICATIONS**

All patients experienced complications due to PCOS mostly short-term complications of which 135 reported infertility, 140 patients have menstrual dysfunction, 32 patients gained excess weight (obesity) and Hyperandrogenism common in all women.

**Table 1 (N=150)**

Characteristics	Overall
Marital status N	
Married	135
Un-married	15
Age(years), N	
15-20	19
21-25	76
26-30	38
31-35	15
36-40	1
>41	1
BMI, N (range)	
Normal	49 (18.5-24.9)
Underweight	02 (<18)
Overweight	67 (25-29.9)
Obese	32 (30-39.9)
Severity of menstrual flow, N	
Normal	108
Heavy	35
Spotting	7
Haemoglobin levels, N	
<11	81
11-15	69

Long-term complications which include Metabolic risk (diabetes, insulin resistance, overweight) reported in 12 patients. women with PCOS present an increased prevalence of classic risk factors for cardiovascular disease (CVD) such as hypertension, dyslipidemia in 16 patients. This is present in Table 2.

**DISCUSSION**

PCOS is one of the most common conditions in reproductive aged women. The probability of development of PCOS based on the weight of women for example those with higher BMI confer a high risk.<sup>1,5</sup>

In our study we noticed that 21-25 years age group were found to be dominant which is in comparison to other age groups. According to the current available literature, the short-term complications may lead to development of long-term complications. These are several lines of evidence suggesting that women with PCOS are also at increased risk of cardiovascular disease. A retrospective study manifested the risk of metabolic complications in the new PCOS phenotypes based on the Rotterdam criteria.<sup>2,9</sup>

In present study on effect of lifestyle modifications and regular medication of PCOS observed great role in improving complications.<sup>7,20</sup>

In our study 49 (32.6%) of the study population showed weight reduction and 21 (41%) of the study population reduced the hyperandrogenism due to regular diet and physical activity, and 37 (25%) due to regular medication. This is present in table 3.

**Table 2**

Categories	No of cases	Percentage%
Short-term complications		
Infertility	135	90
Menstrual dysfunction	140	93.3
Obesity	32	21.3
Hyperandrogenism	150	100
Long-term complications		
CVD	16	10.6
Metabolic risk	12	8

**Table 3: PCOS complications improved in association with its pharmacological management and life style based on physical examination**

Complications improved	Regular diet & physical activity		On regular medication	
	No of cases	Percentage %	No of cases	Percentage %
Obesity	49	32.6%	-	-
Hyperandrogenism	21	14%	37	25%

## CONCLUSION

PCOS among adolescents is an emerging problem that needs careful assessment, timely intervention, and early diagnosis in order to prevent early and late sequel of the syndrome. Overall, women with PCOS show an increased risk of obstetric, cardiovascular, metabolic, and psychological complications. In the light of these considerations, all women with a diagnosis of PCOS should be screened for all risk factors with aim to select specific treatment, lifestyle modifications, customizing the therapy and long-term follow-up. Lifestyle intervention along with regular medicine anticipated to work as a reduction in menstrual dysfunction, obesity that will be associated with a reduction in insulin resistance, which will in turn lead to an improvement in the reproductive and metabolic features of PCOS.

**Limitations:** Difficulty in accessing data from PCOS patients who visited the hospital less than three times.

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