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## Research Article

# The prevalence and features of the polycystic ovary syndrome in young South Indian women from Pondicherry

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## ABSTRACT

**Background:** Aim of current study was to correlate clinical presentation of menstrual irregularity with ultrasound ovarian morphology and assess prevalence of occult PCO.

**Methods:** Fifty women in the age group of 15-25 years attending gynaecology OPD with the complaints of menstrual irregularity were selected for the study. Fifty women within the same age group without any of these complaints were enrolled as control.

**Results:** Past In study group 80% were obese, 50% had acne, 26% had hirsutism, 94% had oligomenorrhea, 80% had ovarian morphological changes and 6% had amenorrhea. In the control group 48% were obese and 46% had ovarian changes.

**Conclusions:** Occult PCOD category need follow up and laboratory assays, as they have risk of PCOD and long term implications like diabetes, hypertension, dyslipidemia and cardiovascular disease.

**Keywords:** Prevalence, Occult PCO, PCOS

## INTRODUCTION

Poly Cystic Ovarian Disease (PCOD) is a heterogeneous multisystem endocrinological disorder of reproductive age. PCOS set early in adolescent life, but clinically manifest in reproductive age with long term implications of diabetes hypertension, dyslipidemia, cardiovascular disease which forms syndrome X. This syndrome is a combination of clinical, biochemical and ultrasound parameters of ovarian morphology. The quoted incidence is 8-10 % by various authors.

Androgen Excess Society defines PCOS as a syndrome of ovarian dysfunction with three cardinal features namely hyperandrogenism, anovulation and Polycystic ovary morphology with Rotterdam criteria. PCOS cause anovulation and infertility in 20%, insulin resistance and hyperinsulinemia in 50-70 % and obesity in 60% young women.

## Aim

To correlate clinical findings with ultrasound ovarian morphology and assess prevalence of occult PCO

## METHODS

Fifty young women in the age group of 15-25 years attending Gynae OPD of Sri Manakula Vinayagar medical college & hospital, Puducherry, S. India with the complaints of menstrual irregularity were included in the study. Fifty women with complaints of acne and hirsutism attending dermatology OPD of SMVMCH were enrolled as controls. Height, weight and BP were recorded; BMI calculated History regarding infertility, amenorrhea, and menstrual irregularities were taken using a questionnaire. Study subjects and controls were subjected to ultra-sonogram to study ovarian morphology. PCOD was diagnosed using Rotterdam

criteria of 12 or more small follicles seen in ovary giving the appearance of “String of Pearls”, each follicle of 2-9 mm diameter, ovaries volume  $>10 \text{ cm}^3$ . Clinical presentation was correlated with ultra sonographic ovarian morphology.

## RESULTS

The obesity was correlated with body mass index (BMI). Among study subjects 80% were obese while in the control group 48% were found to be obese. Assessment

of Acne and hirsutism (n=100) showed that 50% had acne in the study group, and 30% in control group had acne. It was also found that incidence of acne is less in women with BMI  $<19$  (8%) and incidence of hirsutism is more in women with BMI  $>26$ . In the study group, out of 25 women with acne, 13 had hirsutism also, 12 women did not have either acne or hirsutism.

In the control group, Out of 15 women who had acne, only 7 had hirsutism, 28 did not have either acne or hirsutism. Incidence of hirsutism is more in study group.

**Table 1: Interrelations between BMI, obesity, acne, hirsutism and menstrual patterns among study subjects.**

BMI	Obesity	Acne	Hirsutism	Menstrual patterns		
				Regular	Oligomenorrhea	Amenorrhea
$<19$	10 (20%)	5 (10%)	Nil	7	4	Nil
20-25	20 (40%)	11 (22%)	4 (8%)	4	13	1
$>26$	20 (40%)	9 (18%)	11 (22%)	2	17	2

**Table 2: Interrelations between BMI, obesity, acne hirsutism and menstrual patterns among controls.**

BMI	Obesity	Acne	Hirsutism	Menstrual patterns		
				Regular	Oligomenorrhea	Amenorrhea
$<19$	26(52%)	3(6%)	nil	20	1	Nil
20-25	7(14%)	5(10%)	2(4%)	9	6	Nil
$>26$	17(34%)	7(14%)	3(6%)	6	8	Nil

Oligomenorrhea is the commonest menstrual irregularity seen in our study. In the study group 94% had oligomenorrhea and 6% had amenorrhea. The occult PCO category comprises of 10 subjects in the study group and 23 subjects in the control group. The occult PCO comprised of subjects whose ultra-sonogram did not show any morphological changes in the ovary. Women with typical PCOS type of ovarian dysfunction without hyperandrogenism are termed as dysregulated<sup>6</sup> PCO. In our study, 12 women in study group, and 23 in controls did not have acne or hirsutism.

**Table 3: Ultra sonogram findings among study subjects and controls.**

BMI	Cases		Controls	
	PCO	Occult PCO	PCO	Occult PCO
$<19$	2	Nil	Nil	Nil
20-25	13	Nil	19	23
$>26$	25	10	8	Nil
<b>Total</b>	40	10	27	23

## DISCUSSION

Prevalence of PCOS in our study was 8% which corresponds with other studies conducted by various authors. Azziz R<sup>1</sup> from USA has reported an incidence of

8% in black and 4.8% in white women. Asuncion<sup>2</sup> has reported 6.5% PCOS in unselected population in Spain. From a community sample from Australia,

March WA<sup>3</sup> has reported 8.7% of PCO. Richards<sup>4</sup> has reported an incidence of 28% PCO in obese women and 5.5% in lean women from Madrid. The prevalence of polycystic ovarian syndrome ranged from 4.8 - 8.7%. 80 study subjects were obese with BMI  $>20$ . 48% were obese in the control group. Richards<sup>4</sup> has reported 28% of his study subjects with PCOS were obese. Georgina Jones<sup>5</sup> from U. K. in her cross sectional study with South Asian and Caucasian women has quoted an incidence of obesity of 42.3% in South Asian women with PCOS and 38.6% obesity in white Caucasian women. In women with BMI less than 19, 8% had acne. Asuncion M<sup>2</sup> has reported 12.3% of his PCOS women had acne. Out of 25 women with acne in study group, 13 had hirsutism. In control group, out of 15 women who had acne, 7 had hirsutism. Interrelation between BMI, obesity, acne hirsutism and menstrual patterns among study subjects, and controls is shown in Table 1 & 2. Women with typical PCOS type of ovarian dysfunction without hyper androgenism are termed as dysregulated PCO.<sup>6</sup> In our study, 12 women in study group, and 23 in controls did not have acne or hirsutism. In study subjects, 68% women had oligomenorrhea and 3 had amenorrhea. In the control group 30% had oligomenorrhea and 70% had

regular cycle. Georgina Jones<sup>5</sup> has reported that 35.3% of South Asian women and 38.6% white Caucasian women presented with obesity, infertility and menstrual irregularity. Oligomenorrhea was seen in 42.3% South-Asian women and 35.4% in white Caucasian women in her series. PCOS was diagnosed as per Rotterdam Criteria. Ultra sonogram findings among study subjects and controls are shown in Table 3. 10 out of 50 women who presented as PCOS in study group and 23 out of 50 controls did not show any changes in ovarian morphology. These women fall into a category of Occult PCO (OPCOS). Mortenson<sup>6</sup> from USA has reported 25% of asymptomatic volunteers with PCOS, did not show any change in ovarian morphology in his study. These young women with occult PCOS and dysregulated PCO may develop established syndrome in reproductive age with long term sequel such as diabetes, hypertension and infertility. They need regular follow up.

## CONCLUSIONS

Young women who are diagnosed as dysregulated PCO are at a high risk to develop PCOD and long term sequel such as diabetes, hypertension and infertility. So they need follow up, additional diagnostic parameters for diagnosis and management. This a preliminary study. Assays are needed in addition to ultra-sonogram for the further evaluation.

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