



PREVALENCE OF POLYCYSTIC OVARIAN SYNDROME AMONG FEMALE MEDICAL COLLEGE STUDENTS

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ABSTRACT

Background: Polycystic ovarian syndrome is most common endocrine disorders in women affecting reproductive age. Primary defect in PCOS is not defined but present with clinical symptoms such as menstrual irregularities – oligomenorrhea [infrequent menstruation more than 35days], weight gain, Hirsutism, acne, alopecia, ovaries are large or cyst, skintag, insulin resistance and in older age increased the risk of diabetes mellitus, cardiovascular problems, Dyslipidemia, infertility. This study to estimate the prevalence of PCOS among female medical college student in Melmaruvathur Adhiparasakthi Institute of Medical Sciences and Research Institute, Melmaruvathur. It is a cross sectional study in Department of obstetrics and Gynecology, Melmaruvathur Adhiparasakthi Institute of Medical Sciences and Research Institute among female medical college students. This study will be conducted with 300 students between in the age group of [17-26 years]. All students were advised to do Biochemical, Hormonal and Ultrasonography investigations to evaluate the diagnosis of PCOS under Rotterdam's Criteria at the department of Obstetric and Gynecology. Out of 300 student girls, the result came for this study with 27.42% students had Normal BMI, 42.74% students were Overweight, 20.96% students were Obese, 8.9% students were Underweight, 37.33% students had acne, 75.8% students had Menstrual irregularities, 8.66% students had Hirsutism, Ultrasonography report reveals 57% students were diagnosed as PCOS in college student. Polycystic ovarian syndrome is non – communicable disorder affecting women with symptoms and evaluation of biochemical, hormonal and ultrasonography can predict a hallmark diagnosis of PCOS. Prevalance of PCOS among Medical college students study reveals 41.33% were advised to change life style modification, dietary habits, proper diagnosis and treatment with Gynecology consultant.

Keywords:- Stein- Leventhal Syndrome, Irregular menstrual cycle, BMI, Obesity, Acne, Prevalance, Student girls.

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INTRODUCTION

Polycystic Ovary Syndrome (PCOS) also known as stein – leventhal syndrome is an endocrine disorder affecting women in reproductive age. Primary defect of

PCOS is unknown. it affects 2.2 to 20% of reproductive aged women [1]. There is a triad for PCOS which was described in 1935 such as [Amenorrhea, Obesity and

Hirsutism[2].It is also referred to as “Syndrome O”.i.e. Over nourishment, Over productive of insulin, ovarian confusion and ovulatory disruption[3].[4] The European society of Human Reproductive and Embryology /American society for Reproductive Medicine Criteria , often called Rotterdam includes various phenotypes based on a combined of any two of the three findings :

1. Oligo/Amenorrhea : Absence of menstruation for 45 days or more and /or less than 8 menses per year.
2. Clinical hyperandrogenism : Modified Ferriman and Gallway (mFG) score of 8 or higher .
3. Polycystic ovaries : presence of more than 10 cysts , 2-8mm in diameter, usually combined with increased ovarian volume of more than 10cm³, and an echo-dense stroma in pelvic ultrasound scan

In India , prevalence is gradually increased because of the lifestyle that people have adopted. The dietary habits also alter the hormonal imbalance. Sometimes weight loss can restore hormone level to normal it may disappear the symptoms , its hyperandrogenic manifestation includes acne hirsutism , Dyslipidemia ,Insulin resistance ,Diabetes ,Obesity ,Cancer ,Infertility and coronary heart disease[5] .All women were advised for hormonal and ultrasonographic evaluation for diagnosis of PCOS on basis of Rotterdam’s criteria .Hence the study was conducted to assess the prevalence of PCOS among college students in Melmaruvathur Adhiparasakthi Institute of Medical Sciences and Research Institute and its association with exercise ,life style modification ,dietary habits, behavioural modification plays an important role for the prevention of further complication and morbidity .

OBJECTIVES:

To estimate the prevalence of PCOS among medical students girls in MelmaruvathurAdhiparasakthi Institute of Medical Sciences and Research Institute, Melmaruvathur

METHODS:

This is a cross sectional study conducted with 300 female students in Melmaruvathur Adhiparasakthi Institute of Medical Sciences and Research Institute between the age group of (17-26yrs) from march 2019 to

march 2020. Study was conducted after getting the permission from dean of the colleges Inform consent taken. Date was collected pretested structured questionnaire after obtaining written informed consent.

INCLUSION CRITERIA:

Students aged between 17 to 26 years who attained menarche and those who gave consents were included in this study.

EXCLUSION CRITERIA:

Those who were married , thyroid disorders , cushing syndrome, hyperprolactinemia were excluded from this study.

All the students were advised to do hormonal and ultrasonographic evaluation for diagnosis of PCOS on the basic of Rotterdam’s criteria .Questionnaire was given to the participants it includes knowledge assessments ,Detailed history about menstrual irregularities , general examination , ultrasonography.

Data collection was as follows:

- Age
- Weight in kg height in cm to calculate BMI
- Type of diet – vegetarian or mixed diet
- Irregularity of menstrual cycle
- Signs of hyperandrogenism – Hirsutism and acne
- Waist hip ratio
- Type of consultation – Dermatologist or gynaecologist or any other

OPERATIONAL DEFINITIONS:

- Students – 17-26 years
- BMI :
- Normal BMI : 18-23 kg/m²
- Overweight – 23 to 24.9kg/m²
- Obese- 25 kg/m² according to WHO criteria.
- Hormonal estimation for PCOS blood samples were collected for FSH ,LH .

RESULTS:

Out of 300 students, 124 students had PCOS .Thus the prevalence of PCOS in the study was 41.33%.

TABLE 1-Distribution according to age group:

AGE GROUP	PCOS	NO OF STUDENTS	PERCENTAGE
17-19 YRS	14	70	11.29%
19-21YRS	22	80	17.74%
21-23YRS	31	67	25%
23-26YRS	57	83	45.96%

In age group distribution ,study population was observed that PCOS was more prevalent in 23-26yrs is 45.96%.

TABLE 2-Distribution according to family history:

FAMILY HISTORY	NO.OF.STUDENTS WITH PCOS	PERCENTAGE
Yes	51	41.12%
No	73	58.9%
Total	124	100%

Family History of PCOS was observed that about 41.1% had positive family history in 1st degree relative .

TABLE :3-Body Mass Index:

BMI	NO OF STUDENTS PCOS PRESENT	PERCENTAGE
<17.9kg/m ² underweight	11	8.9%
18- 22.9 kg/m ² normal	34	27.42%
>23 kg/m ² overweight	53	42.74%
>25kg/m ² obese	26	20.96 %
Total	124	100%

Waist hip ratio:

WAIST HIP RATIO	PCOS PRESENT	PERCENTAGE
<0.85	24	19.35%
>0.85	100	80.65%
TOTAL	124	100%

Out of 124 diagnosed with PCOS , 8.9% students were underweight, 27.42% students were normal , 42.74% students were overweight and 20.96% students were obese. Among students who had overweight BMI found to have higher waist hip ratio which is the most important etiology for developing PCOS. Hence weight reduction in such women significantly improves menstrual outcomes.

TABLE 4-Types Of Diet:

TYPE OF DIET	NO OF STUDENTS	PERCENT
Mixed (veg/non vegetarian)	163	54.33%
Vegetarian	137	45.67%
TOTAL	300	100%

In this study, 54.33% students were consuming mixed food, 45.67% were consuming veg food.

TABLE 5-Menstrual Irregularity:

MENSTRUAL IRREGULARITY	NUMBER OF STUDENTS	PERCENTAGE
Pcos	114	91.93%
Non-pcos	26	8.67%

Menstrual irregularity is most common in PCOS. This study observed that 91.93% students in PCOS includes oligomenorrhea, amenorrhoea and menorrhagia.

TABLE 6-Other Clinical Manifestation:

Clinical manifestation	NO.OF STUDENTS	PERCENTAGE
Acne	112	37.33%
Hirsutism	26	8.66%
Alopecia	38	12.67%
Pigmentation	29	9.67%
Mood change/depression	95	31.67%

This study observed that 37.33% had acne, 8.6% had hirsutism , 12.67% had loss of hair 9.67% had pigmentation , 31.67% had mood change / depression.

TABLE 7- Physical Activity:

PHYSICAL ACTIVITY	NO OF STUDENT	PCOS PRESENT	PCOS ABSENT	PERCENTAGE
Yoga	25	13	12	4.33%
walking	127	51	76	17%
Jogging	11	4	7	1.33%
NO physical activity	137	112	25	37.33%

Out of 300 student girls ,60% students with reduced physical activity have high risk of developing PCOS. All students were advised to do exercise.

TABLE 8-Findings Of Ultrasound Report:

AGE	PCOS	NON PCOS	TOTAL
17-19YRS	26 (37.14%)	44	70
19-21 YRS	28(35%)	52	80
21-23YRS	22(32%)	45	67
23-26YRS	48(57%)	35	83

USG Report of student revealed that out of 300 students 57% of PCOS are mostly in 23-26 yrs girls.

DISCUSSION:

Among medical college students in Department of obstetrics and Gynecology, Melmaruvathur Adhiparasakthi Institute of Medical Sciences and Research Institute, Prevalance of this study was found to be 41.33%. Williamson et al in their study reported the prevalence of PCOS between 2.2-26% [9]. when the study was sub divided into age group it was observed that majority is 45.96% in 23-26 yrs student girls. When family history of PCOS was taken it was observed that 58.9% had positive in first degree relatives. Study done by Kahsar-Miller MD, Nixon C, Boots LR, Go RC, Azziz R of the 78 mothers and 50 sisters evaluated clinically, 19(24%) and 16(32%) where affected with PCOS [6]. When BMI is calculated out of 124 diagnosed with PCOS 42.74% girls were Overweight, 20.96% girls were Obese. PCOS girls had higher waist to hip ratio significant to BMI. BMI was significantly higher in cases confirmed with PCOS in the study done by Joseph N et al at Karnataka [7]. Menstrual irregularity was most common it

was observed that PCOS student girls had 75.81% had oligomenohoea, amenorrhoea, menorrhagia. A recent study found that PCOS was the most common underlying etiology in adolescents hospitalised with abnormal uterine bleeding and menorrhagia accounting for 33% of admissions Maslyanskaya S, Talib HJ, Northridge JL, et al [8] This study observed that Acne girls was found in 37%, Hirsutism is 8.6%, Alopecia is 12.67%, Pigmentation is 9.6% Depression is 31.6%. Many girls had combination of symptoms present.

Conclusion:

From this study, it is concluded that 41.33% student girls were Polycystic Ovarian Syndrome. They were advised to Change lifestyle modification, Dietary habits, Regular exercise, Proper diagnosis and treatment with Gynecology, Psychology consultant. Early diagnosis can prevent further metabolic and reproductive complication.

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