

ORIGINAL ARTICLE

The Prevalence of Polycystic Ovarian Syndrome in Students of Sir Syed Medical College for Girls, Karachi

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ABSTRACT

Objective: To assess the prevalence of Polycystic Ovarian Syndrome in students of Sir Syed Medical College for Girls.

Study Design: Descriptive, Cross-Sectional Study.

Place and Duration: Outpatient Department of Sir Syed Hospital from August 2012 - December 2012.

Methodology: One hundred and thirty eight students were enrolled in the study after informed consent. The information about study variables was collected by administering a predesigned questionnaire. The data was based on demographic, body mass index(BMI), relevant biochemical tests and abdominal ultrasound evaluation.

Results: Eighty four students revealed familial tendencies. All these students presented with symptoms, i.e., menstrual Irregularities and pelvic pain in 30.2% and 32.4% respectively, hirsutism was another challenging symptom met by the 15.8% of respondents . An advancing symptom debated was weight gain which was reported by 7.9% participants.

Thyroid dysfunction was found to be 14.4%; whereas serum insulin tested positive for 30.2%. BMI showed that underweight 27.3%. 46% were overweight and 23% obese.

Conclusion: The Prevalence of Polycystic Ovarian Syndrome(PCOS) is high in students of Sir Syed Medical College. It can be predicted reliably with the help of history, clinical features, laboratory investigations and sonography.

Key words: Polycystic Ovarian Syndrome, Menstrual Irregularity, Obesity, Hirsutism, Ultrasound and L.H: FSH ratio.

INTRODUCTION

Polycystic Ovary Syndrome (PCOS) is a common endocrine disorder in women of reproductive age and occurs amongst all races and nationalities¹.

In 1985 Adam et al described diagnostic criteria of polycystic ovary as presence of ten or more follicles measuring 2-8mm in diameter arranged peripherally or scattered throughout and increased amount of stroma²⁻³.

Later in 1990 other studies described the use of ovarian volume $>10\text{cm}^3$ as a marker for diagnosis of PCOS.

Rotterdam consensus conference recommended presence of any two of the following three criteria.

- 1) Chronic Oligo anovulation
- 2) Hyper androgenism .
- 3) Polycystic ovaries on imaging

Women presenting with polycystic ovaries are at a risk of developing Hypertension, dyslipidemia, insulin resistance impaired glucose tolerance and type 2 Diabetes Mellitus.

PCO is therefore an important health concern and represents a major health issue affecting young women today.

After puberty periods are normal for sometimes then they become irregular⁴.

1980 Brughen et al proved that an association exists between PCOs and hyperinsulinemia⁵. Insulin resistance occurs in 30% of lean and 75% of obese PCOS patients⁶. The presence of obesity adds to insulin resistance hyperinsulinemia unique anovulatory PCOS state⁷.

The objective of this study was to document the prevalence of PCOS in students of Sir Syed Medical College.

PATIENT & METHODS

The study was carried out on students of Sir Syed Medical College for Girls from August 2012 to December 2012.

A total of 138 students were included in the study. A detail Performa was given to them after a

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verbal consent acquired from the authorities of ethical committee.

Moreover, all individuals were queried in centered confidential to reduce influence from other people. Information was collected in both Urdu and English but the Performa was filled in English. The Diagnostic Criteria's adopted for PCOS were according to Rotterdam 2003 consensus workshop. A data collection form with respect to age, history of menstrual cycle, hair growth, weight gain, family history, biochemical profile including a fasting insulin and thyroid function test were collected.

Statistical Analysis

Data Analysis was performed using SPSS version 21.

RESULTS

The study population consisted of students of reproductive age group. Out of 138, 84 students confirmed a striking association with familial tendencies. History of PCOS in the family was 6.5%.

Amongst the various symptoms in the family history menstrual irregularities were 20.1% followed by infertility 10.1%.

All students presented with symptoms, the highest percentage was menstrual irregularities followed by Pelvic Pain 30.2% and 32.4% respectively.

Hirsutism was another challenging symptoms met by the students which accounted 15.8%.

An alarming advancing symptom reported was weight gain in young girls which was found in 7.9% of the participants.

Hormonal profile and ultrasound scan were carried out by all the participants.

Ultrasound depicted positive results in 23.7% of the students.

LH:FSH ratio thyroid test had similar figures 14.4%.

Serum Insulin was high in 30.2% of the participants.

BMI of the participants of present sample showed that 27.3% were underweight, overweight 46% and obese 23%.

Dietary habits were also taken into consideration. Widely consumed class of food was Carbohydrates 38.8% followed by Proteins 27.3%. A balanced regimen was found in 10% of participants.

Table 1: Family History

Disorder & Symptoms	(n)	%	
PCO	9	6.5%	
Menstrual Irregularities	28	20.1%	
Thyroid	13	9.4%	
Diabetes	13	9.4%	
Infertility	14	10.1%	
Obesity	7	5%	
Insignificant	54	38.8%	(n=138)

Table 2: Symptoms in Students

Symptoms	(n)	%
Hirsutism/Acne	22	15.8%
M. Irregularities	42	30.2%
Weight Gain	11	7.9%
Mood Swings	18	12.9%
Pelvic Pain	45	32.4%

Table 3: Biochemical Evaluation

Test	(n)	%	
Bio/Lipid Profile	15	10.8%	
Thyroid Function Test	20	14.4%	
Serum Insulin	42	30.2%	
LH:FSH Ratio	20	14.4%	
Free Testosterone	8	5.8%	
Ultrasound for PCO	33	23.7%	(n=138)

Table 4: BMI

BMI	(n)	%
<18.50	38	27.3%
18-25	64	46%
25-30	32	23%
>30	4	2.9%

DISCUSSION

Polycystic Ovarian Syndrome is also called Stein-Leventhal syndrome after two doctors who first described it in 1935⁸.

It is the most common ovarian disorder with typical features of obesity, an ovulation, hyper androgenism, Hirsutism and infertility⁹. Its occurrence varies from 1-8% in general population depending upon the diagnostic criteria. It is not purely an ovarian disease but an extremely heterogeneous clinical syndrome that should be

recognized as a systemic endocrine metabolic disorder¹⁰⁻¹¹.

Biochemical derangements came in mid 1950 with detection of elevated urinary luteinizing hormone levels, later increased androgen production. In mid 1980 it was found that insulin resistance in hyperinsulinemia is also important components of PCOS¹²⁻¹³.

Polycystic Ovarian Syndrome remains a mystery which is a disease of young women of reproductive age group and is of public health importance as it has a number of long term health sequelae.

The exact prevalence of PCOS in Pakistan is not known but in the neighboring countries like Sri Lanka and India the disease is as high as 6.3% and 9%¹⁴⁻¹⁵.

In present study the students showed a familial linkage. Out of 138 students 6.5% had PCOS in the family which correlates with the fact that PCOS has strong genetic components. Others studies also support the view that PCOS is a familial condition, possibly autosomal dominant and various aspects may be differentially inherited.

Women with PCOS often have a family history of PCO, hirsutism, acne and menstrual irregularities in relatives who are more likely to suffer from hypertension and diabetes¹⁶⁻¹⁷.

All 138 included in the study presented with definite symptoms, of which menstrual irregularities and pelvic pain were found the highest figures 30.2% and 32.4% respectively.

Conway in 1989 found that 75% to 80% women with PCOs had menstrual irregularities¹⁸. Our results are comparable to this study. The majority of our students had the same complaint.

Hirsutism was another challenging symptoms met by the students which accounted 15.8%.

Kocak M et al, in his study 2002 also noted hyperandrogenemia and used metformin for its reduction.

Circulating testosterone levels among women with PCOS are higher than normal cycling non hirsute women¹⁹⁻²⁰.

An advancing symptom debated was weight which was signified by 7.9% of the participants.

The BMI calculation was challenging for many of the participants. They were classified into three categories underweight, overweight and obese.

The underweight were 27.3% the overweight were 46% and obese 23%.

Wajyeyarantne et al have redefined obesity in Asian Indians considered by BMI more than 27²¹.

Gambinri et al have reported 50% of PCOS were overweight and obese. Our study correlates with these studies that PCOS is directly related to obesity and weight gain²².

The laboratory investigations showed LH: FSH was 14.4%.

Thyroid test had the same value 14.4%, which means that many students had thyroid problem.

Serum insulin was tested positively high for 30.2% participants.

Legros et al found a modest association between raised LH: FSH in PCOS²³.

In this study free testosterone levels was not significantly higher.

Fauser et al indicated that serum testosterone might not be sensitive marker of androgen excess²⁴.

Ultrasonography was carried out on all the students because of its non invasive nature so students were not hesitant to undergo an ultrasound examination, i.e., 23.7% showed positive results.

Although we tried to perform USG by single handed radiologist but were not successful so results showed marked variation. Ultrasound is operational dependant.

138 students in study showed anxiety towards the diagnosis of PCOS.

Maria et al in Feb. 2002 showed adolescent PCOS showed lower physical functioning, general behaviour limitations, family activities because of general outlook and illness²⁵. Our study correlates with this study that young girls have psychological problems in PCOS, and need to be dealt with promptly.

CONCLUSION

PCOS is on the rise in young girls of reproductive age group it can be predicted reliably with the help of clinical features laboratory investigation and USG.

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