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The prevalence of polycystic ovarian disease among undergraduate medical students

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Abstract--Background: Poly cystic ovarian syndrome is a common endocrinopathy identified by oligo-ovulation or ano-ovulation, sign of androgen excess and multiple small ovarian cysts. The present study

was conducted to find out the prevalence of poly cystic ovarian disease among undergraduate female medical students of RMCH & RC, Hapur. Materials & Methods: 185 undergraduate female medical students of RMCH & RC, Hapur were selected and all students were provided with a questionnaire comprising of average menstrual cycle during menstruating years, tendency to grow dark, coarse hair on body, obese or overweight between age 16-40 years, sleep cycle and duration of sleep, late night person, dietary habit, family history of irregular cycle, a milky discharge from nipples (not including during pregnancy or childbirth) between the age of 16-40 years was recorded. Results: Out of 185 students, PCOS was seen in 6 (3.24%). 159 had no tendency to grow dark, coarse hair, 6 had on belly, 6 on breast, 9 on upper lip, 1 on back and 4 on chest between breast. 38 were overweight and 147 were normal, 55 were obese or overweight between age 16-40 years and 130 were not. Sleep cycle and duration of sleep was <6 hours in 57, 6-8 hours in 117 and >8 hours in 11. 129 were late night person and 56 were not. 26 had their family member had irregular cycle and 159 had not. 5 reported with milky discharge from nipples (not including during pregnancy or childbirth) between the age of 16-40 and 180 had not. Dietary habit was calorie intake diet along with junks in 122, rich calorie intake diet with vegetables in 49 and totally dependent on junks for more than 4 days a week in 14. The difference was significant ($P < 0.05$). Conclusion: PCOS is becoming one of the most common endocrinological problems. Hence, early screening, lifestyle modification, and intervention are necessary to prevent lifelong complications.

Keywords---calorie, PCOS, female.

Introduction

Poly cystic ovarian syndrome is a common endocrinopathy identified by oligo-ovulation or ano-ovulation, sign of androgen excess and multiple small ovarian cysts. Affected individual must have two of three criteria, oligo/ano ovulation, hyperandrogenism (clinical/biochemical observation) or poly cystic ovaries (identified by sonography). In case of PCOS – underlying cause is unknown. Multifactorial and polygenic is suspected.¹ The lower estimate is based on the reported 3% prevalence rate of secondary amenorrhea for 3 or more months² and the fact that up to ~75% of women with secondary amenorrhea will fulfil diagnostic criteria for PCOS.³ Women with PCOS have multiple factors contributing to increased Diabetic risk such as insulin resistance, B-cell dysfunction, obesity (centripetal obesity), family history of type 2 diabetes mellitus, personal history of gestational diabetes mellitus.⁴ Identifying glucose intolerance & treating it are important aspects of the care of women with PCOS.⁴ Poly cystic ovarian syndrome has major metabolic sequel related to insulin resistance, compensatory hyperinsulinemia with consequent reproductive and metabolic abnormalities.⁵ Metformin has been shown to be effective therapy and could be used more widely in obese adolescents with hyperandrogenaemia, a forerunner of PCOS.^{6,7} The present study was conducted to find out the prevalence of poly cystic ovarian

disease among undergraduate female medical students of Rama Medical college Hospital and Research Centre, Hapur.

Materials and Methods

The present study comprised of 185 undergraduate female medical students of RMCH & RC, Hapur. All gave their written consent for the participation in the study. Data such as name, age, weight and height etc. was recorded. Height and weight were recorded by standard procedures using the digital weighing scale for weight and stadiometer for height. Body Mass Index (BMI) was calculated. All students were provided with a questionnaire comprising of average menstrual cycle (time from first day one period to first day of next period), during your menstruating years, tendency to grow dark, coarse hair on body, obese or overweight between age 16-40 years, sleep cycle and duration of sleep, late night person, dietary habit, family history of irregular cycle, a milky discharge from nipples (not including during pregnancy or childbirth) between the age of 16-40 years. Data thus obtained were subjected to statistical analysis. P value < 0.05 was considered significant.

Results

Table I
Prevalence of PCOS

Total	PCOS	Percentage
185	6	3.24%

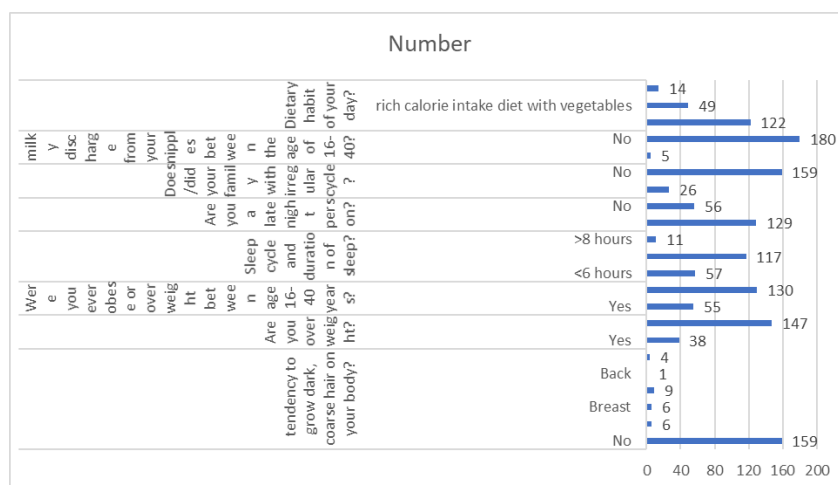
Table I shows that out of 185 students, PCOS was seen in 6 (3.24%).

Table II
Questionnaire used in the study

Questionnaire	Variables	Number	P value
During your menstruating years, did you have tendency to grow dark, coarse hair on your body?	No	159	0.03
	Belly	6	
	Breast	6	
	Upper lip	9	
	Back	1	
	Chest between breast	4	
Are you overweight?	Yes	38	0.01
	No	147	
Were you ever obese or overweight between age 16-40 years?	Yes	55	0.04
	No	130	
Sleep cycle and duration of sleep?	<6 hours	57	0.05
	6-8 hours	117	
	>8 hours	11	
Are you a late night person?	Yes	129	0.01

Does/did your family i.e your mother, sister have any problem with irregular cycle?	No	56	0.02
	Yes	26	
	No	159	
Have you ever noticed a milky discharge from your nipples (not including during pregnancy or childbirth) between the age of 16-40?	Yes	5	0.01
	No	180	
Dietary habit of your day?	calorie intake diet along with junks	122	0.05
	rich calorie intake diet with vegetables	49	
	totally dependent on junks for more than 4 days a week	14	

Table II, graph I shows that 159 had no tendency to grow dark, coarse hair, 6 had on belly, 6 on breast, 9 on upper lip, 1 on back and 4 on chest between breast. 38 were overweight and 147 were normal, 55 were obese or overweight between age 16-40 years and 130 were not. Sleep cycle and duration of sleep was <6 hours in 57, 6-8 hours in 117 and >8 hours in 11. 129 were late night person and 56 were not. 26 had their family member had irregular cycle and 159 had not. 5 reported with milky discharge from nipples (not including during pregnancy or childbirth) between the age of 16-40 and 180 had not. Dietary habit was calorie intake diet along with junks in 122, rich calorie intake diet with vegetables in 49 and totally dependent on junks for more than 4 days a week in 14. The difference was significant ($P < 0.05$).



Graph I. Questionnaire used in the study

Discussion

PCOS is becoming a more prevalent disorder among women of reproductive age with lifelong complications. Incidence of PCOS is increasing rapidly due to changes in lifestyle and stress.⁸ Some of the women who develop cardiovascular disease (CVD), hypertension, endometrial cancer, and type II diabetes later in life appear to have suffered from PCOS in earlier years.⁹ Multiple genetic and environmental factors play an important role in occurrence of PCOS.¹⁰ The consequences of this multifaceted disorder extend beyond the reproductive system affecting metabolic, cardiovascular, immune, and psychological health of affected women.¹¹ The present study was conducted to find out the prevalence of polycystic ovarian disease among undergraduate female medical students of RMCH & RC, Hapur. We found that out of 185 students, PCOS was seen in 6 (3.24%). Shreeyanta KC et al¹² performed a descriptive cross-sectional study among female undergraduate medical students. Out of 381 participants, the prevalence of polycystic ovarian syndrome was found to be 35 (9.18%) at 95% Confidence Interval (6.28-12.08). Eighty (20.99%) participants were reported to have prolonged menses, 28 (7.34%) tended to grow dark, coarse hair, 79 (20.73%) reported being obese or overweight, and milky discharge from nipple was present in 4 (1.049%).

We observed that 159 had no tendency to grow dark, coarse hair, 6 had on belly, 6 on breast, 9 on upper lip, 1 on back and 4 on chest between breast. 38 were overweight and 147 were normal, 55 were obese or overweight between age 16-40 years and 130 were not. Sleep cycle and duration of sleep was <6 hours in 57, 6-8 hours in 117 and >8 hours in 11. 129 were late night person and 56 were not. 26 had their family member had irregular cycle and 159 had not. 5 reported with milky discharge from nipples (not including during pregnancy or childbirth) between the age of 16-40 and 180 had not. Dietary habit was calorie intake diet along with junks in 122, rich calorie intake diet with vegetables in 49 and totally dependent on junks for more than 4 days a week in 14. Deswal et al¹³ summarized the current knowledge on the prevalence of PCOS. All relevant articles published in English language were identified following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses guidelines. The analysis yielded 27 surveys with a pooled mean prevalence of 21.27% using different diagnostic criteria. The proportion of women with PCOS also increased in the last decade. Ding et al¹⁴ reviewed the prevalence of PCOS across different ethnic groups and concluded that Caucasian females are less likely to develop PCOS compared with middle east and non- white female populations. The limitation the study is small sample size.

Conclusion

The present study found that the prevalence of PCOS was 3.24% among undergraduate medical students. Authors found that PCOS is becoming one of the most common endocrinological problems. Hence, early screening, lifestyle modification, and intervention are necessary to prevent lifelong complications.

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