e-ISSN: 0975-5160, p-ISSN: 2820-2651

Available online on www.ijtpr.com

International Journal of Toxicological and Pharmacological Research 2024; 14(3); 227-231

Original Research Article

An Observation Study Assessing the Knowledge on PCOS among Adolescents

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Received: 20-01-2024 / Revised: 22-02-2024 / Accepted: 18-03-2024
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Conflict of interest: Nil

Abstract

Aim: The aim of the present study was to assess the knowledge on PCOS among adolescents.

Methods: The present study was conducted in the Department of Obstetrics and Gynaecology, Netaji Subhas Medical College, Bihta, Patna, India and 200 adolescents was included in the study.

Results: In present study, 60% girls were young girls in the age group of 20-24 years while 40% girls were adolescent girls in the group of 18-19 years. In present study, 50% girls had normal BMI, 20% were overweight, 16% were obese while 14% were underweight. In present study, 52% girls were consuming pure vegetarian diet while 48% girls were consuming mixed (vegetarian and non-vegetarian) food. In present study, 35% girls had acne, 17% had irregularity of menses, 5% had hirsutism. Hormonal profile for hyperandrogenism was suggested. In present study, 34% adolescent and young girls had information about PCOS from teacher, 19% got information from friend, 12% got information from a doctor, 3% got information from newspaper while 6% got information from internet. 27% adolescent and young girls were unaware of PCOS. In this study, 10% girls consulted dermatologist for either hirsutism or acne, 5% consulted gynaecologist for irregularity of menses, 1% girls sought ayurvedic treatment while 1% opted for homeopathy. Amongst 17% girls who consulted a doctor, 10% girls did ultrasonography and blood investigations. Amongst them, 5% girls were diagnosed as having PCOS. So, prevalence of PCOS in present study was 5%.

Conclusion: Prevalence of PCOS in present study was 5%. Most common source of information about PCOS was teacher as the girls were medical students. Girls who were having BMI more than 23 should be educated about its hazards and should be advised weight loss. Girls who had irregularity of menses and signs of hyperandrogenism should be investigated and must be managed accordingly. Early diagnosis of PCOS and its prompt treatment will help the girls to improve quality of life and prevent further health hazards.

Keywords: Adolescent girls, BMI, PCOS

Introduction

Polycystic ovarian syndrome (PCOS) is one of the most common reproductive endocrine logical disorders with a broad spectrum of clinical manifestations affecting about 6-8% of women of reproductive years. [1] The diverse manifestations of PCOS start at an early age when a girls maturing into a young woman. During this pubertal transition, several features may be in evolution and thus many findings may be transitory which stabilize later during adolescence. However, it is important to make an early diagnosis in order to prevent early and late sequel of the syndrome.

PCOS a diagnosis of exclusion has been a topic of debate and many consensus definitions have evolved over time. The National Institute for Health (NIH) Criteria 1990 was revised in 2003 and Rotterdam criteria [2] has been adopted world over. However, recently in 2006, Androgen Excess Society (AES) has come up with a consensus statement, defining PCOS as a hyper androgenic state and emphasises the presence of either clinical and/ or biochemical features of hyper androgenism along with other features of PCOS for diagnosis. [3] Globally, prevalence estimates of PCOS are highly variable, ranging from 2.2% to as high as 26%. [4-8] Community-based studies using Rotterdam criteria among reproductive age group women have demonstrated varied prevalence

figures in few Asian countries ranging from 2% to 7.5% in China [9-10] to 6.3% in Sri lanka. [11]

Studies among several Caucasian populations using NIH criteria reported PCOS in the range of 5-8%. [4-12] An Australian retrospective birth cohort study of 728 women reported a prevalence of 11.9 ± 2.4% as per Rotterdam criteria, which increased to 17.8 ± 2.8% when imputed data were included. Under the AES recommendations, PCOS prevalence was 10.2 ± 2.2%, and 12.0 ± 2.4% with the imputed data. [13] Although there are limited studies of PCOS in India, the observational studies by endocrinologists, gynecologists, and dermatologists relate to diverse aspects of PCOS. Prevalence of obesity and diabetes mellitus in most industrialized countries including India is also on the rise owing to urbanization and change in lifestyle. Most of the young population does not visit health facilities until they have late sequel of the problem. Most prevalence studies in India are in hospital set-ups and recently a few studies among adolescents in schools report prevalence of PCOS as 9.13% to 36%. [14-15]

The aim of the present study was to assess the knowledge on PCOS among adolescents.

Materials and Methods

The present study was conducted in the Department of Obstetrics and Gynaecology, Netaji Subhas Medical College, Bihta, Patna, India for 1 year and 200 adolescents was included in the study.

The data was collected by using structured knowledge questionnaire on PCOS. The investigator obtained permission from the students, prior to the data collection and assured confidentiality to the subject to get their cooperation and explained the purpose of the study. The results were analyzed.

Data Collection was as follows:

• Age

• Weight in kg and height in cm to calculate BMI

• Type of diet- Vegetarian or mixed diet

• Irregularity of menses

• Signs of hyperandrogenism-Hirsutism or acne

• Source of information-Teacher, doctor, friend, paper or internet

• Type of consultation-Dermatologist or gynaecologist or any other

• No. of diagnosed case

Operational definitions

• Adolescent girls- 10-19 years (for present study 18- 19 years).

• Young girls- 20-24 years.

• Body mass index-

Normal: BMI =18-22.9 kg/m2, Underweight: BMI <17.9 kg/m2, Overweight: BMI >23 kg/m2,

Obese: BMI >25 kg/m2 for girls above 18 years

Results

Table 1: Baseline characteristics

Age group	No. of patients	Percent
18-19 years	80	40
20-24 years	120	60
BMI		
<17.9 kg/m2 underweight	28	14
18-22.9 kg/m2 normal	100	50
>23 kg/m2 overweigh	40	20
>25 kg/m2 obese	32	16
Type of diet		
Mixed (veg and non-veg)	96	48
Vegetarian	104	52
Problems		
Irregularity of menses	34	17
Hirsutism	12	6
Acne	70	35

In present study, 60% girls were young girls in the age group of 20-24 years while 40% girls were adolescent girls in the group of 18-19 years. In present study, 50% girls had normal BMI, 20% were overweight, 16% were obese while 14% were underweight. In present study, 52% girls were consuming pure vegetarian diet while 48% girls were consuming mixed (vegetarian and non-vegetarian) food. In present study, 35% girls had acne, 17% had irregularity of menses, 5% had hirsutism. Hormonal profile for hyperandrogenism was suggested.

Table 2: Source of information about PCOS

Source of informationabout PCOS	No. of patients	Percent
Teacher	68	34
Friend	36	18
Doctor	24	12
Paper	6	3
Internet	12	6
No information	54	27

In present study, 34% adolescent and young girls had information about PCOS from teacher, 19% got information from friend, 12% got information from a doctor, 3% got information from newspaper while 6% got information from internet. 27% adolescent and young girls were unaware of PCOS.

Table 3: Type of doctor attended and Prevalence of PCOS

Type of doctor attended	No. of girls	Percent
Dermatologist	20	10
Gynaecologist	10	5
Ayurvedic	2	1
Homeopathic	2	1
Prevalence		
Consultation with doctor	34	17
Investigations done	20	10
Proved PCOS	10	5

In this study, 10% girls consulted dermatologist for either hirsutism or acne, 5% consulted gynaecologist for irregularity of menses, 1% girls sought ayurvedic treatment while 1% opted for homeopathy. Amongst 17% girls who consulted a doctor, 10% girls did ultrasonography and blood investigations. Amongst them, 5% girls were diagnosed as having PCOS. So, prevalence of PCOS in present study was 5%.

Discussion

Polycystic ovarian syndrome (PCOS) is a condition in which woman has an imbalance of female sex hormones. This may lead to changes in the menstrual cycle, cyst in the ovary, failure to conceive and other health problems. It is a common health problem among teenagers and young women. It affects 5% to 10% of women in their reproductive years. These problems cause infertility. Research has suggested that PCOS may be related to increased insulin production. PCOS seems to run in families, too, so if someone in the family has it, they might be more likely to develop it. [16]

The prevalence has been increasing in the adolescent population. [17] In more than 40% of cases, PCOS is associated with obesity, as well as impaired glucose tolerance, type 2 diabetes, and the metabolic syndrome. [18] While the pathophysiology of PCOS remains unclear, insulin resistance has been implicated as a major causative factor.[19] Accurate diagnosis of PCOS is of critical importance to public health, given the chronic nature of the disorder and its association with multiple health consequences. [18] In present study, 60% girls were young girls in the age group of 20-24 years while 40% girls were adolescent girls in the group of 18-19 years. The diverse manifestations of PCOS start at an early age when a girl is maturing into a young woman. it is important to make an early diagnosis in order to prevent early and late sequel of the syndrome. [20] Sunanda B et al [16] revealed that 85% of the samples were in the age group of 21-25 years, 75% of the samples were Christians, 82% of the samples were consuming mixed diet, and 92% samples had regular menstrual cycle. In present study, 50% girls had normal BMI, 20% were overweight, 16% were obese while 14% were underweight. Sanchez N et al [19] found that 32% were obese. Overweight and obese girls are more prone for PCOS. Counselling was given and weight reduction was advised. Also, hormonal profile for thyroid, hyperandrogenism was suggested. In present study, 52% girls were consuming pure vegetarian diet while 48% girls were consuming mixed (vegetarian and non-vegetarian) food. Advice regarding healthy food was given. In present study, 60% girls were young girls in the age group of 20-24 years while 40% girls were adolescent girls in the group of 18-19 years. In present study, 50% girls had normal BMI, 20% were overweight, 16% were obese while 14% were underweight. In present study, 52% girls were consuming pure vegetarian diet while 48% girls were consuming mixed (vegetarian and non-vegetarian) food. In present study, 35% girls had acne, 17% had irregularity of menses, 5% had hirsutism. Hormonal profile for hyperandrogenism was suggested. Joshi et al[20] found that history of oligomenorrhea had a positive predictive value of

93.3% and negative predictive value of 86.7% to detect a possible case of PCOS.

In present study, 34% adolescent and young girls had information about PCOS from teacher, 19% got information from friend, 12% got information from a doctor, 3% got information from newspaper while 6% got information from internet. 27% adolescent and young girls were unaware of PCOS. Sills ES et al found that more than 97% (n =638) of the respondents were familiar with PCOS, while 1.9% had not been told about PCOS, and <1% were uncertain.[17] In this study, 10% girls consulted dermatologist for either hirsutism or acne, 5% consulted gynaecologist for irregularity of menses, 1% girls sought ayurvedic treatment while 1% opted for homeopathy. Amongst 17% girls who consulted a doctor, 10% girls did ultrasonography and blood investigations. Amongst them, 5% girls were diagnosed as having PCOS. So, prevalence of PCOS in present study was 5%. Shetty D found that around 10% of Indian women are affected with Polycystic Ovary Syndrome, commonly known as PCOS. [21] Choudhary N et al found that prevalence of PCOS in Indian adolescents is 9.13%. [22] Vaidya R et al found that according to World Health Organization, there are PCOS affected 116 million women worldwide in 2012 (3.4% of women). [23] Lakshmi KS et al found that the prevalence of PCOS at a tertiary care hospital was 32%. [24]

Conclusion

Prevalence of PCOS in present study was 5%. Most common source of information about PCOS was teacher as the girls were medical students. Girls who were having BMI more than 23 should be educated about its hazards and should be advised weight loss. Girls who had irregularity of menses and signs of hyperandrogenism should be investigated and must be managed accordingly. Early diagnosis of PCOS and its prompt treatment will help the girls to improve quality of life and prevent further health hazards. Thorough knowledge of the disorder and counseling for adolescents should be included in the curriculum which will provide awareness towards the disorder and lifestyle modification. Accurate diagnosis at a younger age may be a key.

References

1. Azziz R, Marin C, Hoq L, Badamgarav E, Song P. Health care-related economic burden of the polycystic ovary syndrome during the reproductive life span. The Journal of Clinical Endocrinology & Metabolism. 2005 Aug 1;90 (8):4650-8.
2. Rotterdam ES. Revised 2003 consensus on diagnostic criteria and long-term health risks related to polycystic ovary syndrome. Fertil Steril. 2004;81(1):19-25.
3. Azziz R. How polycystic ovary syndrome came into its own. F&S Science. 2021 Feb 1;2 (1):2-10.
4. Knochenhauer ES, Key TJ, Kahsar-Miller M, Waggoner W, Boots LR, Azziz R. Prevalence of the polycystic ovary syndrome in unselected black and white women of the southeastern United States: a prospective study. The Journal of Clinical Endocrinology & Metabolism. 1998 Sep 1;83(9):3078-82.
5. Diamanti-Kandarakis E, Kouli CR, Bergiele AT, Filandra FA, Tsianateli TC, Spina GG, Zapanti ED, Bartzis MI. A survey of the polycystic ovary syndrome in the Greek island of Lesbos: hormonal and metabolic profile. The journal of clinical endocrinology & metabolism. 1999 Nov 1;84(11):4006-11.
6. Michelmore KF, Balen AH, Dunger DB, Vessey MP. Polycystic ovaries and associated clinical and biochemical features in young women. Clinical endocrinology. 1999 Dec;51(6):779-86.
7. Asunción M, Calvo RM, San Millán JL, Sancho J, Avila S, Escobar-Morreale HF. A prospective study of the prevalence of the polycystic ovary syndrome in unselected Caucasian women from Spain. The Journal of Clinical Endocrinology & Metabolism. 2000 Jul 1;85 (7):2434-8.
8. Azziz R, Woods KS, Reyna R, Key TJ, Knochenhauer ES, Yildiz BO. The prevalence and features of the polycystic ovary syndrome in an unselected population. The Journal of Clinical Endocrinology & Metabolism. 2004 Jun 1;89(6):2745-9.
9. Chen X, Yang D, Mo Y, Li L, Chen Y, Huang Y. Prevalence of polycystic ovary syndrome in unselected women from southern China. European Journal of Obstetrics & Gynecology and Reproductive Biology. 2008 Jul 1;139(1):59-64.
10. Li R, Zhang Q, Yang D, Li S, Lu S, Wu X, Wei Z, Song X, Wang X, Fu S, Lin J. Prevalence of polycystic ovary syndrome in women in China: a large community-based study. Human reproduction. 2013 Sep 1;28(9):2562-9.
11. Kumarapeli V, Seneviratne RD, Wijeyaratne CN, Yapa RM, Dodampahala SH. A simple screening approach for assessing community prevalence and phenotype of polycystic ovary syndrome in a semiurban population in Sri Lanka. American journal of epidemiology. 20 08 Aug 1;168(3):321-8.
12. Escobar-Morreale HF, San Millán JL. Abdominal adiposity and the polycystic ovary syndrome. Trends in Endocrinology & Metabolism. 2007 Sep 1;18(7):266-72.
13. March WA, Moore VM, Willson KJ, Phillips DI, Norman RJ, Davies MJ. The prevalence of polycystic ovary syndrome in a community

sample assessed under contrasting diagnostic criteria. Human reproduction. 2010 Feb 1;25 (2):544-51.
14. Nidhi R, Padmalatha V, Nagarathna R, Amritanshu R. Prevalence of polycystic ovarian syndrome in Indian adolescents. Journal of pediatric and adolescent gynecology. 2011 Aug 1;24(4):223-7.
15. Nair MK, Pappachan P, Balakrishnan S, Leena ML, George B, Russell PS. Menstrual irregularity and poly cystic ovarian syndrome among adolescent girls—a 2 year follow-up study. The Indian Journal of Pediatrics. 2012 Jan;79 :69-73.
16. Sunanda B, Nayak S. A Study to Assess the Knowledge Regarding PCOS (Polycystic Ovarian Syndrome) among Nursing Students at NUINS. Journal of Health and Allied Sciences NU. 2016 Sep;6(03):24-6.
17. Sills ES, Perloe M, Tucker MJ, Kaplan CR, Genton MG, Schattman GL. Diagnostic and treatment characteristics of polycystic ovary syndrome: descriptive measurements of patient perception and awareness from 657 confidential self-reports. BMC Women's Health. 2001; 1(1):3.
18. Broder-Fingert S, Shah B, Kessler M, Pawelczak M, David R. Evaluation of adolescents for polycystic ovary syndrome in an urban population. J Clin Res Pediatr Endocrinol. 2009;1(4):188-93.
19. Sanchez N. A life course perspective on polycystic ovary syndrome. Int J Womens Health. 2014; 6:115-22.
20. Joshi B, Mukherjee S, Patil A, Purandare A, Chauhan S, Vaidya R. A cross-sectional study of polycystic ovarian syndrome among adolescent and young girls in Mumbai, India. Indian journal of endocrinology and metabolism. 2014 May 1;18(3):317-24.
21. Shah D. One out of every 1o women have got polycystic ovarian syndrome. Gynaec World.
22. Nidhi R, Padmalatha V, Nagarathna R, Amritanshu R. Prevalence of polycystic ovarian syndrome in Indian adolescents J Pediatr Adolesc Gynecol. 2011;24(4):223-7.
23. Vaidya R, Joshi B. PCOS-epidemic in India: An emerging public health challenge. International Conf PCOS Society India with AE-PCOS Society USA, 19-6-2016.
24. Lakshmi KS, Jayasutha J, Chandrasekar A. A study on prevalence of polycystic ovarian sundrome in a tertiary care hospital. Int J Pharmaceu Sci Res. 2015;6(1):383.