

Original article

A descriptive study of Polycystic ovarian syndrome in adolescent girls among a tertiary care hospital of Bangalore

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Abstract:

Background: Polycystic ovarian syndrome (PCOS) is one of the most common reproductive endocrinological disorders with a broad spectrum of clinical manifestations affecting about 6-8% of women of reproductive years.

Objectives: To determine the prevalence of PCOS among adolescent girls attending Gynaecology OPD of a tertiary care hospital.

Materials and Methods: Present study is a descriptive study conducted in Gynaecology OPD of Dr.B. R Ambedkar Medical College, Bangalore. Study population comprised of Adolescent girls attending the gynaecology OPD were included in the study. Data thus obtained was entered in MS excel and data was analysed using SPSS version 17. Appropriate statistical tests were applied and p value of <0.05 was considered as significant.

Results: A total of 126 adolescent girls had visited the Gynaecology OPD from July – August 2014 . Majority that is 76.2% of adolescents were in their late adolescence. Ultrasound report of the adolescents revealed that 30(23.8%) of them were diagnosed as PCOS . This difference was statistically significant.

Conclusion: Early diagnosis and intervention will reduce the long term health complications associated with PCOS.

Key words: PCOS, adolescent girls, tertiary care hospital

Introduction:

Polycystic ovarian syndrome (PCOS) is one of the most common reproductive endocrinological disorders with a broad spectrum of clinical manifestations affecting about 6-8% of women of reproductive years.¹

The European Society of Human Reproduction and Embryology/American Society for Reproductive Medicine criteria, often called Rotterdam, includes various phenotypes based on a combination of any two of the three findings of hyperandrogenism, menstrual irregularity, and polycystic ovaries on ultrasound.²

PCOS remains a syndrome and as such, no single diagnostic feature is sufficient in itself to establish the clinical diagnosis. Similarly, PCOS is

diagnosed by exclusion, and disorders having a phenotype related to that of PCOS must be ruled out; such as congenital adrenal hyperplasia, Cushing syndrome and virilising tumors.³

The exact prevalence of PCOS is not known as the syndrome is not defined precisely and depends on the choice of diagnostic criteria. World Health Organization (WHO) estimates that it affected 116 million women worldwide in 2012 (3.4% of women). Globally, prevalence estimates of PCOS are highly variable, ranging from 2.2% to as high as 26%.⁴

In India, the prevalence is gradually increasing. In Indian Express in 2013, it was published that PCOS becoming 'epidemic' in Bangalore city, because of the lifestyle that people have adopted. Almost all

foods are packed with chemicals that lead to hormonal imbalance. The cause of PCOS remains unclear.

PCOS is a major health concern because patients with PCOS are at increased risk of infertility, pregnancy loss, obesity, cardiovascular disorders,^{5,6} diabetes mellitus,⁷ obstructive sleep apnea,^{8,9} depression, non-alcoholic fatty liver disease,¹⁰ endometrial hyperplasia¹¹ and endometrial carcinoma,¹² etc. Infertility occurs in 75% due to anovulation.¹³ Other risks have been reported in different percentage as cutaneous hyperandrogenism in the form of obesity is found in 40-60% cases¹⁴ acne in 15-25%, hirsutism in 65-75%, alopecia in 5-50% cases¹⁵

Objective: To determine the prevalence of PCOS among adolescent girls attending Gynaecology OPD of a tertiary care hospital.

Material and Methods:

Present study is a descriptive study conducted in Gynaecology OPD of Dr.B. R Ambedkar Medical College, Bangalore. Study duration was from July 2014 – September 2014. Study population comprised of Adolescent girls attending the gynaecology OPD were included in the study. The girls who were married and who did not give consent were excluded from the study.

Detailed history about their menarche, menstrual pattern, menstrual loss, dysmenorrhoea, past and present medical and surgical problems was taken. General physical examination especially their height in meters and weight in kilograms for body mass index, waist and hip measurements in inches, their ratio, hirsutism in FerrimanGallways scoring system,¹² thyroid enlargement and any other abnormality was noted. Body mass index of up to 23 was taken as normal, between 23 to 24.9 kg/m² was taken as overweight, and more than 25 was considered as obese according to the WHO criteria. FerrimanGallways score of 8 or less was taken as normal and more than 8 was considered as hirsute. Ultrasound was done in the Radiology department for the presence of Polycystic ovaries and other pelvic pathology. The girls who were confirmed as having Polycystic ovaries on ultrasound were then advised serum FSH, LH, Prolactin, Testosterone and TSH. Serum FSH:LH ratio of 1:3 was taken as raised and below this was considered normal. Data thus obtained was entered in MS excel and data was analysed using SPSS version 17. Appropriate statistical tests were applied and p value of <0.05 was considered as significant.

Results:

Table 1: Age wise distribution of study population

Age	Number	Percentage
Early Adolescence	30	23.8
Late Adolescence	96	76.2
Total	126	100

Age wise distribution of study population shows that among the adolescents majority that is 76.2% of adolescents were in their late adolescence.

Table 2: Findings of USG report among the study population

Age	PCOS	Non – PCOS	Total	p value
Early Adolescence	3(10%)	27(90%)	30	0.04*
Late Adolescence	27(28.13%)	69(71.87%)	96	
Total	30(23.8%)	96(76.2%)	126	

*p value <0.05

Ultrasound report of the adolescents revealed that of the 126 adolescents who attended the OPD 30(23.8%) of them were diagnosed as PCOS and of the 30 who were diagnosed as PCOS majority of

them were in their late adolescence. This difference was statistically significant.

Table 3: Symptoms associated with PCOS among study population

S.no	Symptoms	Number*	Percentage
1.	Irregular cycles	21	16.6%
2.	Obesity	18	14.3%
3.	Hirsutism	12	9.5%
4.	Alopecia	7	5.5%
5.	Acne	21	16.6%
6.	Depression	6	4.8%

*multiple responses

With respect to the symptoms of PCOS, the major symptoms observed were irregular cycles and acne which were observed in 16.6% of the study population followed by obesity which was seen in 14.3% of the subjects.

Discussion:

PCOS among adolescents is an emerging problem that needs careful assessment, timely intervention, and appropriate treatment.¹⁶The diverse manifestations of PCOS start at an early age when a girl is 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. Hence, the present study was conducted to know the prevalence of PCOS among adolescents

attending OPD of Dr. B. R Ambedkar Medical College.

In the present study prevalence of PCOS was found to be 23.8%. Williamson et al in their study reported the prevalence of PCOS between 2.2-26%.¹⁷ According to a prospective study conducted by Nidhi et al, on 460 girls aged 15-18 years in a residential college in Andhra Pradesh, South India, the prevalence of PCOS was found to be 9.13% in adolescents.¹⁸

In another study conducted on Saudi girls, the estimated prevalence of PCOS was observed to be 53.7% which is strikingly higher. One of the explanations may be high incidence of obesity in Saudi Arabia which has an established association with PCOS.¹⁹

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 to 6.3% in Srilanka.²⁰

The feasibility of conducting such community-based study justifies the need to upscale this effort to get an overall estimate of the disorder in a diverse sociocultural and economic background, providing an opportunity for early detection and

prevention of morbidities among adolescents and young women in India.

Conclusion:

Based on the observation it is concluded that the prevalence of PCOS is increasing gradually in India and it may be a major health concern in future. Hence, early diagnosis and intervention will reduce the long term health complications associated with PCOS.

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