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Original Research Article

PCOS: a raising problem; due to recent trends

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ABSTRACT

Background: Polycystic ovaries with its symptom complexes (PCOS) constitute about 30% of the cases seen every day in patients coming for scan in our hospital. Since PCOS is associated with various long-term complications it is important to analyze is its incidence and its cause for the increase.
Methods: The study included 600 women who came for USG for various complaints who had USG features of PCO. Their symptoms, marital and obstetric history was recorded their general appearance and BMI were also recorded and analysed. Their food pattern and physical activity was also elicited.
Results: PCO was a finding in around 24% of unwed teenage girls. PCO affected both obese (21.4%) and non-obese (56.2%) women. The complaints for which they come were mainly menstrual disturbances and primary (28.8%) infertility and secondary (22.6%) infertility.
Conclusions: Early identification of PCO is essential and its treatment will prevent various long-term complications of it in the future generation.

Keywords: BMI Body Mass Index, PCOS Polycystic ovarian disease, PCO-polcystic ovaries, USG ultrasonogram

INTRODUCTION

PCOS is a hyper androgenic disorder associated with chronic anovulation and polycystic ovarian morphology.[1,2] It is often associated with health implementation in later life. It can affect females throughout their lifetime from puberty to menopause. It is not only a very prevalent cause of anovulatory infertility, menstrual disturbances and hirsuitism, but it is also a major risk factor for the development of type 2 diabetes mellitus in later life. Polycystic ovaries are the morphological ovarian phenotype in women with the PCOS. Major complaints and features of PCOS is different ages of affected women may help to plan individual. therapeutic strategies and prevent long-term chronic metabolic diseases. In 2003, a joint ESHRE/ASRM consensus meeting produced a refined definition of PCOS, and the morphology of the polycystic ovary was defined as an ovary with 12 or more follicles measuring 2-9 mm in diameter and/or increased ovarian volume (>10 cm3).[1] In this study patients with ovarian morphology suggestive of PCO were selected and analysed.

METHODS

Inclusion criteria

All patients who came for USG for any complaints with a finding of polycystic ovaries were selected.

Exclusion criteria

Patients with signs and symptoms suggestive of PCOS but without USG evidence were excluded. 500 patients selected over a study period of 6 months were analysed.

Methodology

Patients with PCO as scan finding (Table 1) were studied with a questionnaire containing details of their chief complaint, parity, menstrual pattern, food habits and physical activity. Their height and weight recorded and BMI calculated. The details were tabulated and analysed.

Table 1: Patients performa.

Patient details		
Name		
Age		
Weight		
Height		
BMI		
Occupation		
Sports	Walking	
Exercise		
Diet	Morning	
	Afternoon	
	Night	
Veg/non-veg		
Cofee/tea (No. of times)		Sugar (Spoons)
Snacks	Oily	
	Bakery	
H/O DM		
H/O hypothyroidism		
Menstrual complaints	Regular/not	
	Duration of periods:	
	Amount:	
Hair over body and face		
USG	Ovary:	
	Fatty Liver	
Marital history		
Obstetrics history		
LN/LSCS		
Family history		

RESULTS

Age of onset

Even though PCOS is disease of reproductive age. The adolescent girls (23.8%) were also affected with BMI on the obese side with history of hypo and oligomenorrhea as their chief complaint (Table 2).

Table 2: Age of incidence.

Age (years)	No. of patients	Percentage
<20	119	23.8
20-25	125	25
25-30	125	25
30-35	81	16.2
>35	50	10
Total	**500**	**100**

Parity

Even though 50% of the women had either primary or secondary infertility women who had completed family (25%)also had PCO and history of infrequent periods (Table 3).

Table 3: Parity and marital status.

	No. of patients	Percentage
Unmarried	118	23.6
Primary infertility	144	28.8
Secondary infertility	113	22.6
Multipara	125	25
Total	**500**	**100**

BMI

Even though more than 50% were on the obese side about 25% were underweight lean PCOS (Table 4).

Table 4: BMI.

BMI kg/m^2	No. of patients	Percentage
<18.5 (underweight)	75	25
18.5-24.9 (normal weight)	156	31.2
25.0-29.9 (over weight)	162	32.4
30.0-34.9 (class I obesity)	57	11.4
35.0-39.9 (class II obesity)	50	10
≥40.0 (class III obesity)	-	-
Total	**500**	**100**

Fatty liver

Around 24% of women above the age of 25 years on the obese side had fatty liver as an incidental finding, which need further studies as an indicator of ongoing metabolic complication.

DISCUSSION

Polycystic ovary syndrome (Stein-Leventhal syndrome), widely known as PCOS, is an endocrine system disorder affecting women in their reproductive years.[1,2] It can affect females throughout their lifetime from puberty to menopause. As healthcare providers, we are aware of the long-term effects of PCOS on women during their reproductive years and the co-morbidities later in life. PCOS symptoms can be quite distressing for any woman suffering with irregular periods, weight gain, acne, hair thinning and hirsutism.

Several studies have been performed to attempt to determine the prevalence of PCO as detected by ultrasound (Figure 1 and 2) alone in the general population and have found prevalence rates in the order

of 17-33%.[3] In 2003, a joint ESHRE/ASRM consensus meeting produced a refined definition of PCOS and the morphology of the polycystic ovary was defined as an ovary with or more follicles measuring 2-9 mm in diameter and/or increased ovarian volume (>10 cm^3).[4,5] It is interesting also to note that the presence of PCO is a marker for increased ovarian reserve and a reduced rate of ovarian ageing.[6]

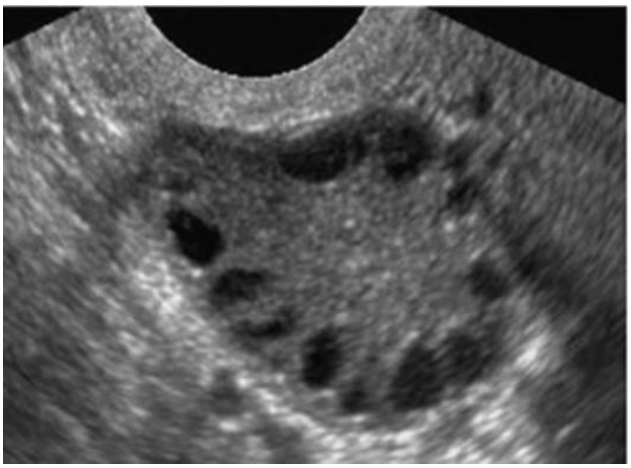

Figure 1: Ultrasound picture of polycystic ovary.

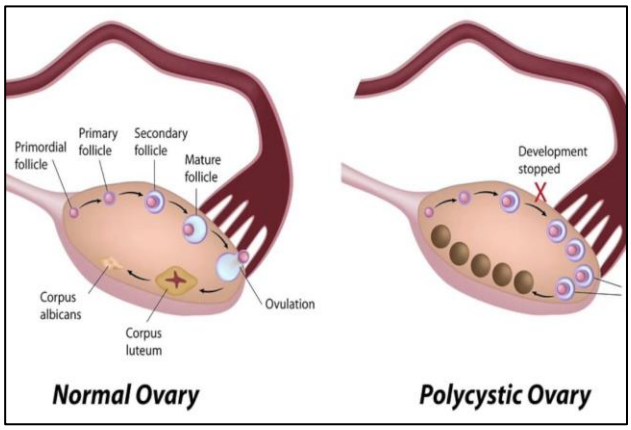

Figure 2: Normal and polycystic ovary.

PCOS symptoms can be quite distressing for any woman suffering with irregular periods, weight gain, acne, hair thinning and hirsutism. The impact of this symptom on young vulnerable girls growing up in this digital age, where image is everything is several folds. Many girls suffer with these symptoms in silence and do not receive a diagnosis until later in life.

Puberty is a tumultuous time and with the additional burden of PCOS it can have a lasting psychological impact as well as long term health and fertility sequelae. We can empower these young girls by educating them once a diagnosis is made. This can assist in minimizing the burden of PCOS on women by providing them with the knowledge they need at an early age. It is our duty as healthcare providers both in primary care and as specialist to inform these young girls and their guardians about PCOS and its effects both in their early years and later on in life. This in turn will minimize the psychological and emotional exposure at this tender age. It will provide the future generations with the knowledge they need to deal with the burden of the disease as well the long-term impact on health and fertility.

Studies demonstrate that peripubertal obesity is associated with hyperandrogenism Peripubertal weight reduction has been shown to be associated with a reduction in testosterone levels in the general population of obese prepubertal girls.[7,8] Potential areas of further research activity include the analysis of predisposing conditions that increase the risk of PCOS, particularly genetic background and environmental factors, such as endocrine disruptors and diet.[9] Intraovarian regulation of follicle development and mechanisms of follicle arrest and the impact of metabolic abnormalities on these processes, as well as molecular mechanisms by which insulin excess regulates androgen secretion and metabolism and disrupts follicle developmentare other potential issues for investigation.[8,10]

Insulin resistance is a common feature of the syndrome, and both obese and non-obese women with the syndrome are more insulin-resistant and hyperinsulinaemic than age- and weight-matched normal women. However, obese PCOS women had significantly decreased insulin sensitivity compared with non-obese PCOS women (Dunaif). For example, Morales et al demonstrated reduced insulin sensitivity in lean PCOS compared with lean controls, a further decrease in obese controls and a twofold further reduction in obese PCOS, suggesting that obesity is additive to insulin resistance related to PCOS.

In addition to decreased insulin sensitivity, pancreatic β-cell secretory dysfunction has been reported in PCOS. The β-cell defect-increased secretion of insulin under basal conditions and decreased secretion after meals-results in insufficient insulin secretion to compensate for the degree of insulin resistance. The decreased postprandial secretory responses in these patients resembles the β-cell dysfunction of type 2 DM and are much more pronounced in PCOS women who have a first-degree relative with type 2 DM, suggesting an increased risk for developing glucose intolerance.

Weight loss results in significantly improved insulin resistance, but the β-cell defect remains suggesting that it may be the primary abnormality in PCOS. A potential mechanism for insulin resistance in at least 50% of PCOS women appears to be related to excessive serine phosphorylation of insulin receptor

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