Original Article

Clinical Profile of Polycystic Ovarian Syndrome Patients In Tertiary Care Hospital

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Abstract:

Background: Polycystic ovarian syndrome (PCOS) is common gynecological endocrinopathy characterized by chronic anovulation and hyperandrogenism affecting 5-10% of women worldwide. It is a heterogenous, multifactorial, complex genetic disorder with uncertain etiology and is one of the most common treatable cause of infertility. **Aim:** To study the various clinical presentations in polycystic ovarian syndrome. **Methodology:** Present study is cross sectional observational study carried out in tertiary care center. This study was performed in the Out Patient Department of Obstetrics and Gynecology. **Results:** The mean age of 41 patients in the study was 23.6 years. Most common presenting symptom in patients is menstrual irregularities (89%) followed by infertility and hirsutism. USG (abdomen & pelvis) showing polycystic ovarian syndrome ovaries. Around 39% patients with PCOS developed insulin resistance. **Conclusion:** PCOS is more prevalent disorder among women of reproductive age with lifelong complications. Most challenging aspects of this syndrome is its ambiguous diagnostic criteria and wide complexity of characteristics.

Keywords: Amenorrhea, Infertility, Oligomenorrhea, Polycystic Ovarian Syndrome.

Introduction:

Polycystic ovary syndrome (PCOS) is common endocrine disorder of reproductive age affecting 5% to 10% of women worldwide.[1]

PCOS is a heterogeneous, multifactorial, complex genetic disorder with uncertain etiology and is characterized by androgen excess with varying degree of reproductive and metabolic abnormalities.[1,2]

Most prominent features observed in PCOS are ovulatory dysfunction, hirsuitism and acne may develop in some patient. It is the leading cause of anovulatory infertility, hyperandrogenism and hirsutism.[3]

PCOS was first described by Valisnere in 1721 as "young married peasant women, moderately obese and infertile with 2 larger than normal ovaries, bumpy, shiny and whitish just like pigeon eggs".[3]

PCOS not only is the most frequent cause of an ovulation, but is also associated with characteristic metabolic disturbances that may have important implications for the long-term health.[4]

PCOS was first described by Stein and Levinthal in 1935.[5] The PCOS definition was revised in May 2003 at the ESHER conference in Rotterdam, Netherland.[6] For diagnosis two out of three criteria should be fulfilled, they are:

1. Oligo-ovulation or anovulation.
2. Clinical and / or biochemical signs of hyperandrogenism (with the exclusion of other causes of androgen excess like Cushing's syndrome, congenital adrenal hyperplasia, thyroid abnormalities, androgen-secreting tumour and hyper prolactinemia).
3. Polycystic ovaries (PCO) detected on ultrasound.

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The PCO definition was revised in 2003. Then Balen and coworkers suggested that 12 or more follicles in one ovary, each follicle measuring 2-9 mm in diameter and/or volume of the ovary >10ml.[7]

The aim of the present study was to investigate the clinical characteristics of the women with polycystic ovarian syndrome, taken in to study as per Rotterdam criteria and correlation in between these characteristics.

PCOS is frequently associated with obesity and insulin resistance. The mechanism by which obesity affects the pathophysiology and clinical manifestations of PCOS is not completely understood, but obesity has an important impact on the severity of hyperandrogenism, menstrual irregularities and insulin resistance.[8]

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Metabolic disorders such as hyperlipidemia, insulin resistance, hypertension and type 2 diabetes mellitus are common in PCOS in addition to increased risk of cardiovascular disease. It is important because it is associated with increased risks of non-insulin dependent diabetes mellitus, metabolic syndrome and cardiovascular complications. Endometrial cancer remains one of the serious complications for women with untreated PCOS.

Diagnosis of PCOS involves clinical, radiological and biochemical studies. Radiological studies include pelvic ultrasound and biochemical tests include estimation of serum concentrations of LH, FSH, and Testosterone etc.

Methodology:

The aim of the study was to study the clinical presentation of patients with PCOS in a tertiary care hospital.

Objectives:

1.To define a patient of PCOS as per Rotterdams criteria.

2.To study clinical profile of the PCOS patient.

3.To correlate and analyze the above and compare with other studies.

This study was carried out in the Out Patient Department of Obstetrics & Gynaecology at DVVPF's Medical College & Hospital, Ahmednagar, Maharashtra, India. 41 women in reproductive age group attending gynecology outpatient department with any 2 out of 3 Rotterdam criteria were taken for study.

Inclusion Criteria:

1. Women (married or unmarried) in age group 15-40 years of age were included.

2.Women attending gynecology outpatient department with any 2 out of 3 Rotterdam criteria.

3.Patient willing to participate in this study.

Exclusion criteria:

1.Congenital adrenal hyperplasia.

2.Cushing's syndrome.

3.Androgen secreting tumors.

4.Pregnant females.

Informed consent was obtained from each patient. Women presenting with irregular cycles, amenorrhea and /or features of hirsutism are taken. In patients presenting with amenorrhea, pregnancy and other causes of amenorrhea are excluded. All patients are subjected to ultrasonography for polycystic ovarian morphology and ovarian volume.

Amenorrhea was defined as absence of cycles in the past 6 months and Oligomenorrhea as menses >35 days. Infertility was assessed only in married patients and was defined as failure of spontaneous pregnancy after one year of active married life. Patients with male factor infertility and other factors of infertility were excluded.

For every patient detailed menstrual history regarding age of menarche, menstrual cycle is noted. Each patient asked questions about H/O diabetes / hypertension / epilepsy / drug intake / childhood obesity.

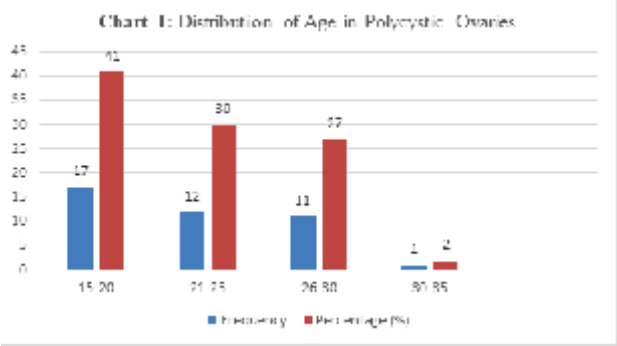
Personal history—dietary habits, life style is important.

Family history—similar complaint in mother/ siblings, and also the family H/O diabetes and hypertension are taken.

Results:

Age distribution:

When age distribution of PCOS patients was analyzed, maximum patients (41%) were in the age group 15-20 years, followed by 21-25 years, whereas minimum patients (2%) were in age group of 31-35 years. Mean age was 23.6 years.



Menstrual complaints:

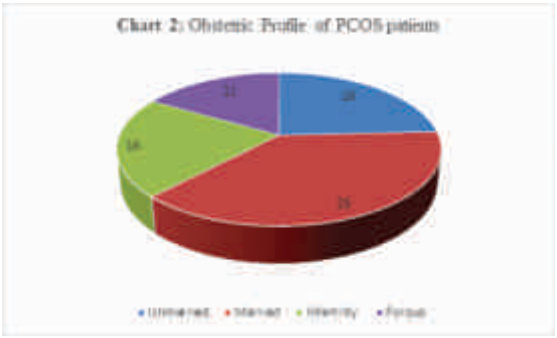
In our study most commonly encountered menstrual complain in PCOS is Oligomenorrhea occurring in 36 of 41 (89%) patients. 5 patients had no menstrual complaints.

Table 1: Menstrual complaints of PCOS patients

Menstrual complaints	Frequency	Percentage (%)
Irregular	36	89
Regular	5	11

Obstetrical profile:

Out of 41 cases of PCOS included in the present study 25 patients were married and 16 were unmarried. Of this 25, 14 presented with infertility (56%). 11 patients (26%) where porous who were not interested in further childbearing.



Obesity in PCOS:

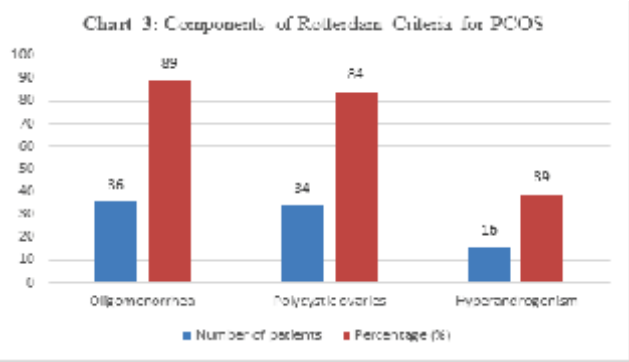
In the study maximum patients 42% belonged to obese group according to their BMI. 27% had normal BMI and 11% in overweight group. 20% of cases were lean with PCOS.

Table 2: Classification of PCOS patients as per their BMI

BMI	Number of patients	Percentage (%)
<18.5	8	20
18.6-22.9	11	27
23-24.9	5	11
>25	17	42

Components of PCOS:

Of the three components in Rotterdam criteria for PCOS diagnosis most commonly found in the present study was Oligomenorrhea seen in 89% patients. Next was ultrasound picture of polycystic ovaries found in 84% patients and least was clinical features of hyperandrogenism 39%.



Insulin intolerance in PCOS patient:

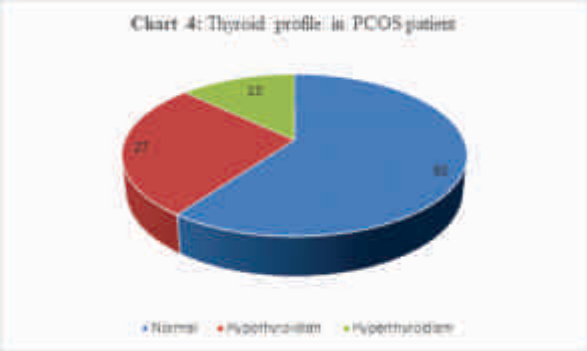
Out of 41 patients of PCOS 16 patients were insulin intolerant diagnosed by using a glucose tolerance test.

Table 3: Glucose tolerance test in PCOS patient

GTT	Number of patients	Percentage (%)
Insulin Intolerant	16	39
Insulin Tolerant	25	61

Thyroid profile:

In our study, most commonly associated endocrine finding is hypothyroidism, found in 11 patients which is 27 percent of total with 60 percent normal profile and 13% hyperthyroidism



Discussion:

Clinically diagnosing a woman as having PCOS implies an increased risk for infertility, dysfunctional bleeding, endometrial carcinoma, obesity, Type-II diabetes, hypertension, dyslipidemia, and possibly cardiovascular disease.[4] In our study, the mean age of the patients with PCOS was 23 years indicating that it is a disease mainly of the young age. Menstrual irregularity was observed in 89% of our patients while study conducted by Vrunda Dhagat reported 65% in the same.[9] Apparently, 44% of the married patients were fertile even though only 25% reported worldwide.[10] Yet the overall prevalence of infertility could still be higher because most of the patients in this study were unmarried (39%).

In this study, obesity and overweight BMI groups were observed to be 11% and 42%. This is quite different in comparison to 57% and 24% noted in a study in Libya[11] and may indicate a lower BMI cut off values of 24 kg/m2 for the risk of diabetes and other metabolic diseases in the South Asian population was observed only in 2% of the patients which is less than that reported in Asian women (17%). This may be from the use of simple diagnostic tools rather than the use of glucose tolerance tests or HbA1C tests for diagnosis of the disease.

There is 39% insulin resistance is also seen in chronic cases of PCOS which is most commonly treated with the help of life style modification, diet and metformin. Hypertension was also reported in few patients, which is identical from the data observed worldwide. Hypothyroidism was observed in 27% of the patients with 60% normal thyroid profile and 13% patients with hyperthyroidism. As this is a retrospective study, certain limitations have to be considered. The study failed to mention metabolic abnormality such as dyslipidemia, level of testosterones, prolactin which is an important indicator for possible cardiovascular diseases and hyperandrogenism. However, this study shows the various clinical presentation and biochemical profile of patients with PCOS coming in tertiary care centre

Conclusion:

PCOS is a most common endocrinopathy in women in reproductive age with varying clinical manifestation and may present to a gynecologist, endocrinologist or a dermatologist. PCOS can be diagnosed by detailed history, clinical examination and ultrasonography. These findings suggest that, in women with endocrine findings of PCOS, the size and morphology of the ovaries on sonography are helpful in identifying specific metabolic or reproductive abnormalities. Routine ovarian ultrasonography may not be necessary in women having hyper androgenic chronic anovulation. PCOS has long-term effects on health and life quality of these patients. Thus, the awareness regarding PCOS is important. Our study, despite being of retrospective nature, concluded that menstrual irregularity and infertility are the major clinical presentations of PCOS.

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