

Correlation of Clinical and Sonological Features in PCOS

Dr. Arati Mane¹, Dr. C. S. Patil²

¹Associate Professor, Department of OBGY, MIMSR Medical College, Latur, Maharashtra, India

²Professor & HOD, Department of OBGY, MIMSR Medical College, Latur, Maharashtra, India
Corresponding Author Email: [manearati123\[at\]gmail.com](mailto:manearati123[at]gmail.com)

Abstract: ***Objective:** To find out the correlation of clinical and sonological features in PCOS. **Material and method:** A cross sectional observational study was carried out from March 2019 to March 2020. Total number of women enrolled for the study was 50. Women with clinical features of oligomenorrhoea or amenorrhoea, acne, hirsutism, obesity were included. Women with endocrine disorders were excluded. **Results:** Mean age group was 24.55 years in married group and 20.44 years in unmarried. BMI was > 25kg/m² in 77.7% of married and 55.6% in unmarried group. Prevalence of infertility was 88.8%. 72.2% had oligomenorrhoea. 66.6% of women were hirsute. 88.8% had polycystic ovaries on ultrasound examination. **Conclusion:** In the present study it was found that there is high occurrence of obesity, hirsutism in PCOS patients. Similarly infertility was statistically significant in PCOS cases. Ultrasound serves as an important tool in the diagnosis of PCOS.*

Keywords: PCOS, Oligomenorrhoea, hirsutism, infertility

1. Introduction

Polycystic Ovary Syndrome (PCOS) is a multifactorial disease. It is the most common heterogenous endocrinological disorder that occurs in 5%-10% women in reproductive age group¹. It is the most prevalent endocrinopathy and common cause of infertility². The prevalence of PCOS varies depending on the diagnostic criteria used and the population studied. Its etiopathogenesis has not been elucidated in detail.

The disease entity is primarily characterized by disrupted ovulation and hyperandrogenism, but the clinical picture can be diversified and symptom intensity can vary³. It consists of chronic an ovulation, menstrual disturbances, hyperandrogenism, polycystic ovaries, metabolic syndrome⁴.⁶. The current definition of PCOS is based on Rotterdam consensus in 2003. It defines the syndrome as presence of any two of the following three criteria;

- 1) Menstrual disturbance; oligomenorrhoea/ anovulation
- 2) Clinical and/or biochemical signs of hyperandrogenism like acne, hirsutism etc, after other causes of hyperandrogenism has been ruled out.
- 3) Ultrasound appearance of polycystic ovaries as polycystic adnexa^{7,8}.

The coexistence of hirsutism, oligoovulation, infertility and bilateral enlargement of the ovaries was first reported by Stein and Leventhal in 1935⁹. This syndrome was even named by these two physicians for some time. The term Polycystic ovary Syndrome (PCOS) was first used in the 1960's and gradually replaced its former name. PCOS is modulated by multiple factors such as genetic factors, ethnic origin, nutrition, prenatal androgen exposure, insulin resistance in adolescence and/or more intense adrenarche and body mass changes¹⁰⁻¹². Environmental factors such as obesity seem to exacerbate genetic predispositions. As for

ethnic factors, hirsutism is rarely observed in Caucasian race (approximately 70%)¹².

The rate of PCOS in first degree relative is 33%¹³. PCOS is associated with various endocrine abnormalities such as increased serum LH levels, increased ratio of LH: FSH, increased serum testosterone. Estimation of these hormones aids in the diagnosis. In PCOS ovary is enlarged >9ml in volume, is smooth, sclerotic, has thickened capsular and subcapsular follicular cysts with atresia and hyperplastic theca and stroma¹⁴. Polycystic ovary contains 2-3 fold the normal number of follicles. A classical ultrasound features of PCOS described by Adam et al 1985 included enlarged ovary with presence of 10 or more cysts 2-8mm in diameter arranged either peripherally "string of pearls" around dense core of stroma or scattered throughout.

Hyperandrogenism is the second common defining characteristic feature. The increased androgen levels are principally ovarian in origin, clinically manifested by hirsutism and acne. Most of the late complications of PCOS are related to insulin resistance. In mild insulin resistance patients will have slightly elevated fasting serum insulin levels whereas in severe forms it may manifest with acanthosis nigricans¹⁵. 50% of patients of PCOS are obese^{14, 15}. Patients of PCOS have central obesity, increased deposition of fat around waist. The obesity is android in type with increased waist to hip ratio and fat in anterior abdominal wall and mesentery¹⁵.

Another risk of insulin resistance is development of Type 2 diabetes. More than 40% of women with PCOD demonstrate impaired glucose tolerance test, 10% have Type 2 Diabetes^{2, 15}. PCOS patients are at increased risk of cardiovascular disorders such as myocardial dysfunction, stroke and hypertension^{15, 16}. PCOS patients are at increased risk of developing endometrial carcinoma due to increased estrogen mainly estrone¹⁶. These women also have increased chance of developing ovarian, breast and colon cancer¹⁵⁻¹⁷.

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2. Material and Methods

A cross sectional observational study was carried out in the Department of Obstetrics and Gynaecology at MIMSR Medical College and YCR Rural Hospital Latur, Maharashtra from March 2019 to March 2020. Total numbers of women enrolled for the study were 50. Ethical committee clearance was taken.

Inclusion Criteria

All the woman attending gynaecological OPD and presenting with features of oligomenorrhoea or amenorrhoea, acne, hirsutism, obesity or USG suggestive of PCOS.

Exclusion Criteria

Women with clinical evidence of other endocrine disorder – Cushing's syndrome, Androgen secreting Tumours, Congenital adrenal hyperplasia and hyperprolactinoma. Informed consent was taken and all women were subjected to detailed questionnaire which included menstrual history, reproductive history, clinical examination was performed. Anthropometric measurements were taken. Ultrasonographic reports were analyzed.

3. Results

A total of 50 women were included in the study and were analysed.

- 1) **Age** - The age in our study was 18 -30 years. Mean age was 24.55 years in the married study group and 20.44 years in the unmarried study group.
- 2) **BMI** – BMI was measured by weight in kilograms / height in metre². BMI > 25 kg/m² was taken to be significant. BMI > 25 kg / m² was seen in 77.7% of married women and 55.56% in the unmarried group.
- 3) **Infertility** – History of both primary and secondary infertility was included in the study. Prevalence of infertility was in our study group was 88.8%.
- 4) **Menstrual Pattern** – Oligomenorrhoea was the most common complaint among the study group. 72.2% of patients had oligomenorrhoea.
- 5) **Hirsutism** -66.6% patients were hirsute.
- 6) **Ultrasound** -88.8% of the study group had polycystic ovaries on ultrasound examination.

4. Discussion

In the present study 50 cases were studied. The agegroup in our study was 18-30 years. Mean age was 24.55 years in the married and 20.44 years in unmarried group. Most of the precious studies focused on the similar age group. BMI was raised >25kg/m² in 77.7% married and 55.56% in unmarried group. Fouzia Nazir et al¹⁸ (1999) had 86.5% of patients with BMI > 25 kg/m². Abdul Razzak et al (2007)¹⁹ had 63.55% of patients with BMI > 25 kg/m² in his study.

Prevalance of infertility in our study was 88.8%. Fouzia Nazir et al (1999)¹⁸ found 75% of patients had infertility in their study. In our study 72.2% of cases had oligomenorrhoea. In study of R. Yousouf et al¹ 71% of

patients had oligomenorrhoea. Fouzia Nazir et al¹⁸ study found 75% of patients had oligomenorrhoea.

In our study 66.6% of patients were hirsute. Sidhmalswamy A G et al²⁰ found that 61.2% of women were hirsute. 88.8% of the study group had polycystic ovaries on ultrasound examination in our study group. In the study by Sidhmalswamy A G et al²¹ 75% of women presented with bilateral involvement of ovary on ultrasound. Abdul Razak et al¹⁹ concluded that 95% study group were detected to have polycystic ovaries on ultrasound.

5. Conclusion

In the present study it was found that there is high occurrence of obesity, hirsutism in PCOS patients. Similarly infertility was statistically significant in PCOS cases. Ultrasound serves as an important tool in the diagnosis of PCOS.

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