

# Frequency of Polycystic Ovarian Syndrome in Sub Fertile Gynecology & Obstetrics, Civil Hospital and Dow University of Health & Sciences, Karachi

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## ABSTRACT

**Objective:** To determine the frequency of polycystic ovarian syndrome in sub fertile women.

**Material and method:** This is descriptive study conducted at infertility clinic of Gynecology & obstetrics, civil hospital and Dow University of health & sciences, Karachi for period of 6 months. Total 100 patients was evaluated who were present at infertility clinic were examined for PCOS.

**Results:** Most of the patients were between 21 to 30 years of age. The average age of the patients was  $25.5 \pm 4.39$  years. The most common clinical feature was hirsutism that is observed in 17 percent women.

**Conclusion:** PCOS is a frequent reproductive-age endocrine condition. Biochemical and clinical symptoms vary widely. PCOS should be properly evaluated in all suspected women.

**Keywords:** Polycystic ovarian syndrome, sub-fertility, reproductive-age, endocrine disease

## INTRODUCTION

Couples' struggles with infertility are leading an increasing number of them to seek out specialised fertility treatment. Most people who report being unable to have children really have diminished fertility rather than complete sterility, and many of them will conceive on their own. For women in the general population, 84% are anticipated to get pregnant after 12 months of unprotected intercourse, and 92% within 24 months.(1)

To be subfertile, a couple must be unable to conceive after trying for 12 months to two years with no contraception.(1) Around 20% of infertile women have ovulated or had irregular ovulation (Oligo- ovulation). Almost 21 percent of women with subfertility have anovulation, with polycystic ovary syndrome being a leading reason.(2) The frequency of polycystic ovarian syndrome in sub fertile patients in Britain and United States is 20-25%.(3) the frequency in Pakistan is not known yet, one study conducted at Lahore Pakistan shows the incidence of PCO is 18% of infertile couples.(2) Polycystic ovary syndrome (PCOS) is diagnosed when at least two of the following three symptoms are present. This condition is diverse and its cause is unknown.(4)

Symptoms of anovulation include irregular or absent menstrual periods, an increase in circulating androgen levels (hyperandrogenemia), or the presence of clinical signs of androgen excess (acne, hirsutism), as well as ultrasonographic morphology of the ovaries (more than 8 small follicles measuring less than 10 mm in the subcortical region and total ovarian volume greater than 10 ml).(3) It affects 4-10% of reproductive-age women in the United States, making it one of the most prevalent endocrinological illnesses in this population.(3) The prevalence in British female population is 22%.(3) Patients with Polycystic ovarian syndrome might visit a dermatologist for Hirsutism, physicians for complaints related to obesity or a gynaecologist for irregular or absent bleeding. Most patients seek the care of a gynaecologist because of cycle abnormalities and sub fertility.(5) It is a familial condition possibly autosomal dominant trait, but offending genes have yet to be identified, however much of the pathophysiology of the syndrome causing an over production of ovarian androgens is now being clearer.(6) A greater fasting insulin level has been seen in around 40% of women who have polycystic ovary syndrome.(3) And hyperinsulinemia play a key role in the pathogenesis.(2) Women with polycystic ovary syndrome have a higher-than-normal amount of luteinizing hormone secreted from their follicles than is typical (40%). Clomiphene citrate is the most often recommended medication for polycystic ovarian syndrome in cases of subfertility.(2)

Metformin is often used nowadays and has been shown to benefit both the menstrual cycle and ovulation. Ovulation induction

with gonadotrophin is possible, but it is a challenging and time-consuming therapy for both patients and doctors because of the potential for hyper-stimulation of the ovaries and multiple pregnancies. For patients who have not responded to clomiphene, laparoscopic ovarian drilling is currently the standard of care. An ovulation rate of 75% and a pregnancy rate of 40% to 60% are among its statistics.(3) Learning about the demographics and frequency of this condition in the south Asian area is important for understanding the magnitude of the disease and its consequences.(3)

So the rational of my study is to find out the frequency of polycystic ovarian syndrome in sub fertile women. This would help the policy maker to serve such women early and appropriate measures can be taken to reduce this burden.

**Objective:** To determine the frequency of polycystic ovarian syndrome in sub fertile women at Dow University of Health & Sciences, Karachi

## PATIENTS AND METHODS

This is descriptive study conducted at clinic of Gynecology & obstetrics, Civil hospital and Dow University of Health & Sciences, Karachi for the period of 6 months i.e 3<sup>rd</sup> january 2022 to 2<sup>nd</sup> june 2022. Around 100 cases were included in this study. Sample calculated on basis of Proportion of polycystic ovarian syndrome = 20%, Margins of error =8% and Confidence level 95%, using non probability purposive sampling technique. All sub-fertile women under 35 years of age with primary subfertility, BMI >25 were enrolled and women with endometriosis, Tubal blockage on hysterosalpingogram, women with other causes of subfertility (hypothyroidism, Asherman syndrome, submucosal fibroid) were also excluded from study. All patients who have PCO were diagnose by history (Detailed history will be taken by patient regarding oligomenorrhea (menses at interval >35 days), amenorrhea (absence of menstruation more than 6 months) hirsutism ((abnormal hair growth over face and body) acne (a skin disease caused by changes in the pilosebaceous units (skin structures consisting of a hair follicle and its associated sebaceous gland). Clinical features pelvic ultrasound for ovarian morphology. Minimum criteria set for diagnosis of PCO was presence of oligomenorrhea, amenorrhea, obesity, hirsutism, acne and subfertility. At initial visit a detailed history was taken exploring age of patient, duration of marriage, previous reproductive status of both partners, menstrual history including oligo/amenorrhea, weight gain, hirsutism. Previous medical and surgical history. Previous investigations for PCO and subfertility. Body mass index was calculated by subtracting the patient's weight in kilogrammes from her height in metres squared, and the result was used as the

reference standard for obesity. For south Asian women, a body mass index of 25 or more was considered to be clinically obese. Patient were examined for extent of hirsutism if present. Secondary sexual characteristics were also checked at same time. General examination were followed by systemic examination brief review of all systems including respiratory system, cardiovascular system, and abdominal examination. Pelvic examination included per speculum examination as a routine to asses condition of cervix and taking pap smear. The bimanual examination was performed to asses mobility presence of any adenexal pathology. Screening investigations included semen analysis, full blood count urine analysis. Biochemical evaluation of selected cases include hormonal assay of leutinizing hormone (LH) Follicle stimulating hormone (FSH) & LH: FSH ratio and Fasting insulin will be take less than 10 IU/L. serum prolactin as 25ng/dl, were performed if indicated. Transabdominal or transvaginal U/S was carried out for ovarian size, volume, follicular pattern and maturity. Sub fertility was defined as the inability to conceive after one years of unprotected intercourse. Primary Sub fertility comprises couples with no history of a previous pregnancy. Data is analyzed on SPSS version 25.

**RESULTS**

A total of 100 primary sub fertile women attending infertility clinic were included in this study. Polycystic ovarian syndrome was defined in the presence of one or more clinical features like oligomenorrhea (menses at interval of >35 days), amenorrhea (absence of menstruation for more than 6 months), acne and hirsutism (presence of abnormal hair growth over face and body). Most of the patients were between 21 to 30 years of age. The average age of the patients was 25.5 ± 4.39 years. The most common clinical feature was hirsutism that is observed in 17 percent women followed by oligomenorrhea i.e. 13 percent cases, acne was observed in 9 percent women and amenorrhea was found in 7 percent cases. Table 1

Frequency of polycystic ovarian syndrome in sub fertile women according to operation definition. Fig 1

Table 1: Baseline features of patients

Characteristic	F (%), mean ± SD
N	100
Age (years)	25.5 ± 4.39
≤20 years	15
21-30	73
>30	12
Hirsutism	17%
Olligomenorrha	9
Acne	9
Amenorrhea	7

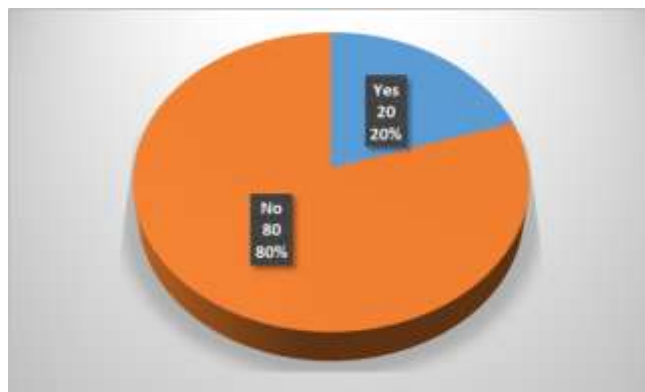


Fig 1: Distribution of PCOS

**DISCUSSION**

The clinical symptomatology of PCO in sub fertile patients was assessed. Primary sub fertile women were studied for their PCO

prevalence. Twenty percent of women who seek treatment at an infertility clinic have polycystic ovary syndrome. In recent years, it has been estimated that up to 22% of women have experienced this. This research has a higher incidence of polycystic disease (20%) based on a smaller sample size (100 individuals) than previous studies (17.6% from 508 participants). In another nearby trial, just 25% of individuals were affected. Apple-shaped obesity and some dermatological indications like alopecia, acne, or hirsutism as a consequence of hyperandrogenism are all part of the spectrum of symptoms associated with this disease.(3)

In light of new WHO worldwide statistics on obesity and BMI in people from various ethnic groups, the definition of obesity in south Asian women has been updated: a BMI >25 is now considered to be class1 obesity, which is comparable to a BMI >30 for White women. Insulin resistance and abnormal ovarian function have been linked to the development of PCOS.(5) Hyperinsulinemia and insulin resistance, both of which are common in women with polycystic ovary syndrome, are a major contributor to the worsening of ovulation dysfunction and metabolic disturbances.(7, 8)

Ultrasound evidence of polycystic ovaries has been proven to have no functional effect on fertility in women who are asymptomatic.(9) According to the Rotterdam definition of PCOS from 2003, clinical hirsutism is a symptom of the disorder. When comparing the LH and testosterone levels of the women in this research, there was not a significant correlation between hirsutism and PCOS or subfertility of any kind. This indicates that constitutional hirsutism is quite common among women. In this study 20 % of women out of 100 with have menstrual irregularities including oligomenorrhea 13% and amenorrhea 7% so menstrual irregularities is commonest feature in PCOS it indicate 70 % of patient with PCOS have oligomenorrhea compare to local study 74% out of 508. Another local study it was 80% out of 70 patients. PCOS appear during adolescence and is thought to be associated with increased weight gain during puberty.

PCOS is a prevalent gyne-endocrine condition that affects between 7 and 15 percent of reproductive-aged women. In an effort to boost PCOS women's fertility, a variety of behavioural, medicinal, and surgical interventions have been studied.(10-12)

When laparoscopy is called for, drilling the ovaries is the standard method, and it works in around half the instances. When all other options have been exhausted, the third line of defence is to try a high-complexity reproductive therapy such in vitro fertilisation or intracytoplasmic sperm injection. When spontaneous conception is unlikely due to factors such tubal blockage or sperm abnormalities, this is the treatment of choice.(13-15)

**CONCLUSION**

The endocrine condition polycystic ovary syndrome affects a large percentage of women of childbearing age. Clinical and biochemical manifestations of the illness might seem quite different from patient to patient. The possibility of polycystic ovary syndrome (PCOS) should be extensively explored in all women.

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**This article may be cited as:** Abro NN, Nargus R, Mangi M, Naz S, Samo R, Shaikh Q: Frequency of Polycystic Ovarian Syndrome in Sub Fertile Gynecology & Obstetrics, Civil Hospital and Dow University of Health & Sciences, Karachi. *Pak J Med Health Sci*, 2023; 17(8): 90-92.