

## Difficulties in Diagnosis of Polycystic Ovarian Syndrome (PCOS) in Teens

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### Abstract

Currently, the criterion used to diagnose the condition of PCOS is the same in women of all reproductive age group, which should not be the case. As teenage symptoms like irregular periods, acne and appearance of polycystic ovaries are commonly present in all adolescent girls after puberty, it is difficult to make an accurate diagnosis. Hence it will be better to wait for few years rather than making a hasty diagnosis of the teenage girls. The presence of metabolic syndrome should be targeted in the screening of these girls, who are suspected to have PCOS.

**Keywords:** Pcos; Teenage girls; Metabolic syndrome

### Introduction

Polycystic ovarian syndrome, commonly known as PCOS is an endocrine disorder widely found in women around the world irrespective of cast and creed. The problem starts manifesting after the onset of puberty, and so it is important to understand the difficulties in diagnosing this condition during this age. In the recent years, the incidence of PCOS is going up steadily, due to the changes in lifestyle. It is a complex disorder, and medical science is yet to understand this condition completely and still looking for many answers. PCOS has a 10% to 40 % of incidence, which is a wide range of incidence for any disease.

Some of the current practices are probably doing more harm than good, as suggested by the emerging new theories of micro biome. The alteration of micro biome due to combined contraceptive pills may be harmful in PCOS patients. Sadly, today this is the most common form of treatment offered.

Currently, the same criteria are being used for teenagers in the diagnosis of PCOS as in adults. The Rotterdam criteria don't differentiate between the adults and teenagers.

Unfortunately, the signs and symptoms of normal menarche are often mistaken with the PCOS. Ideally, PCOS should not be diagnosed in very young girls using the current criteria, as there are chances for a wrong diagnosis. There can be huge implications for a girl when she is told that she is suffering from this condition, as it is considered to be a chronic disorder with long term complications like sub fertility, obesity and cardio vascular disease. A wrong diagnosis can affect them negatively causing unwanted mental pressure.

In conservative societies like India, where a girl is expected to get pregnant within a short span after marriage, the news of PCOS spells disaster. Even the diagnosis in a girl with actual PCOS can have lots of negative repercussions, as teenagers tend to overestimate the risks involved. The sheer pressure which the women undergo due to the fear of infertility can be one of the main reasons for failure to conceive.

### Features of PCOS

There should be a presence of at least two out of the three features according to the Rotterdam criteria. The three symptoms are the menstrual irregularity, hyperandrogenemia and the presence of polycystic ovaries. Menstrual irregularity is a diagnostic feature of PCOS, occurring in more than 75% of the adult PCOS population, and it is often the earliest clinical manifestation in the adolescent PCOS girls. We know that it is very common for girls to have irregular periods immediately after achieving menarche. Hypothalamic pituitary ovarian axis takes time to mature [1]. This endocrine function matures progressively over a period of many months and sometimes it may take one or two years to regularize after menarche. This is a very common cause for the irregular periods after menarche, but quite often it gets confused with PCOS. Waiting for one or two years will not do any harm in such situations before labeling the young girls as PCOS affected, because lifelong they may carry this scar with them.

### Hyperandrogenemia

This is the second criteria for diagnosis, and this can either be biochemical, or clinical with the presence of acne and hirsutism.

High levels of androgens in the blood can be measured by means of various blood tests. Although practicing doctors doesn't have clear specifications as to which particular androgen or group of androgens should be measured, this is still taken as diagnostic criteria. In addition, there are always possibilities of lab to lab variations of test results, more so among different countries. A gynecologist in the UK might be doing free testosterone, 5 HT (5 hydroxytestosterone), DHEAS (dehydroepiandrosterone sulfate) and also SHBG (sex hormone-binding globulin) as it is paid by NHS, but a doctor practicing in India might have access/funds for just serum testosterone. So, there is no global equality or guidelines on any particular test.

Going by the symptoms of androgen excess, it is quite likely that many of the college going students fall into the category of PCOS. Over 90% of 18-year-old women have some form of acne and 23% have acne requiring pharmacotherapy, the prevalence of which declines in adulthood [2]. Hence if teenage girls are branded on the basis of hirsutism, that's an additional burden on the young mind who is

already suffering the taboo for the extra facial and body hair. If you are going to look for excessive hair growth, at times you may not find it even with girls with severe PCOS and high levels of androgens. The reason being that, hirsutism is often less prominent during the adolescent period compared to adulthood, as the hair growth becomes thick and coarse with increasing duration of androgen exposure [3]. This would probably start manifesting in the early twenties in most of the women with PCOS.

### Presence of Polycystic Ovaries on Scan

The appearance of the ovaries can be often deceiving at the age of menarche. The scan will give a clear picture, only if you are lucky and the patient is not having much fat in the stomach area (on a trans abdominal scan). Trans abdominal scan may not give the correct picture in an obese girl and quite often, asking for a transvaginal scan, might put the girl in an uncomfortable position or result in the parents frowning. Another problem is that multiple cysts or follicles are common in adolescents. It has been reported that ovaries can show polycystic morphology during the teenage years and as years pass, enlarged ovaries with polycystic appearance can subsequently become normal in size [4].

Another symptom which we can look for is the presence of hyperinsulinemia. Unfortunately, hyperinsulinemia is quite common in healthy adolescents and not in just PCOS girls. Insulin sensitivity decreases by about 50% in puberty and there is a compensatory rise in insulin secretion, which later returns to prepubertal levels in adulthood.

So, it can be concluded that it is difficult to diagnose PCOS in adolescent girls. We should start looking for other features, which might help in the accurate detection and include them with the existing guidelines.

### Metabolic Risk in Adolescent PCOS

Acanthosis nigricans (dark discoloration of the skin crease behind the neck and underarms) and central obesity are both strong features suggesting PCOS. Nearly 30% of all girls, actually suffer from metabolic syndrome [5,6]. Metabolic syndrome is a combination of obesity, high blood pressure, high levels of fasting cholesterol and

lipids and raised sugar levels. This is in contrast with less than 5% in the general population.

In addition to the above mentioned symptoms, genetical factors can also be taken into account as it is proven that there is a genetic background for PCOS. It has been observed that girls who have mother or sisters affected with PCOS are more prone to this condition.

### Conclusion

As the signs and symptoms overlap from that of a general population, it will be prudent to wait for one or two years before diagnosing PCOS in girls up to two to three years post menarche. Advises on healthy lifestyle and regular follow-up can be helpful to these girls. The most important aspect would be screening for metabolic syndrome (without the diagnosis of PCOS as such), just as a health checkup and keeping a record of these levels over a period of time. The author has given a PCOS diary to all the patients, where they can track all the factors for at least fifteen years. In our specialized PCOS clinic, the author make sure that each and every patient receives proper counseling along with proper diet and exercise.

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