EVIDENCE BASED MEDICINE CORNER

An evidence based approach for diagnosis of adolescent polycystic ovarian syndrome

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KEYWORDS
PCOS; Adolescent; Evidence based

Abstract
The overlap between normal pubertal development and characteristic features of PCOS may confound an accurate diagnosis of PCOS among adolescent girls. Other disorders associated with irregular menses or hyperandrogenism need to be excluded from diagnostic consideration. Even in the absence of a definitive diagnosis and the lack of an approved therapy for PCOS in adolescence, treatment options that both alleviate the current symptoms and decrease the risk for subsequent associated comorbidities are recommended. Although obesity, insulin resistance, and hyperinsulinemia are common findings in adolescents with hyperandrogenism, these features should not be used to diagnose PCOS among adolescent girls.

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Adolescent polycystic ovarian syndrome (PCOS) affects a substantial number of girls with increasing prevalence of 30% [1]. It may have a progressive course with the potential to develop full-blown picture of adult PCOS. Adolescents with PCOS are at an increased risk developing other disorders, such as adulthood infertility, obstructive sleep apnea, diabetes mellitus, metabolic syndrome, and psychiatric morbidities. Thus, an early diagnosis of PCOS in adolescents may allow for screening of metabolic complications and timely intervention to reduce circulating androgen levels and may improve health consequences and quality of life of women with this disorder. The diagnostic criteria for PCOS in adolescence are controversial, primarily because the diagnostic pathological features used in adult women, e.g. acne, irregular menses, and PCO morphology, may be normal pubertal physiological events [2]. Insulin resistance and hyperinsulinemia are intrinsic to PCOS and are believed to exacerbate the hyperandrogenism and the reproductive and metabolic manifestations of PCOS in adolescents. None of the definitions of PCOS include obesity, insulin resistance, or hyperinsulinemia as diagnostic criteria [3,4]. Therefore, insulin resistance and/or hyperinsulinemia should not be used to diagnose PCOS among adolescent girls.

Recently [5], the guidelines of Endocrine Society for the Diagnosis and Treatment of PCOS indicated that criteria for diagnosis of adolescent PCOS are unclear. Hence, questions still exist regarding the features of adolescent PCOS.
1. Is adolescent hyperandrogenemia a consequence of the lack of full synchrony of the hypothalamic-pituitary-ovarian axis during the prolonged anovulatory cycles typical of pubertal development or an early manifestation of PCOS?

2. If adolescent androgen levels can predict adult levels?

3. If adolescent hyperandrogenic anovulation can predict adult PCOS?

4. When persistence of adolescent oligomenorrhea becomes a significant clinical finding?

5. Although obesity, insulin resistance, and hyperinsulinaemia are common findings in adolescents with hyperandrogenism, these features should not be used to diagnose PCOS among adolescent girls (Level A).

6. Prospective longitudinal research studies will be helpful to understand the natural history for girls considered to be at risk of PCOS. Research evaluating long-term interventions using high-quality RCTs and follow-up of girls with PCOS diagnosed during adolescence would be ideal. Through such research studies, it is hoped that validated diagnostic criteria supported by robust clinical and hormonal findings can be established to facilitate timely diagnosis while preventing overdiagnosis and unnecessary treatment in otherwise healthy normal pubertal girls (Level C).

1. Recommendations [7]

(1) The overlap between normal pubertal development and characteristic features of PCOS may confound an accurate diagnosis of PCOS among adolescent girls (Level A).

(2) Other disorders associated with irregular menses or hyperandrogenism need to be excluded from diagnostic consideration (Level A).

(3) Great caution should be taken before diagnosing PCOS in adolescent girls with clinical features of androgen excess such as hirsutism and biochemical hyperandrogenism if oligomenorrhea has not persisted for more than 2 years. These girls can be considered to be at risk of PCOS. To avoid misdiagnosing physiological pubertal changes as PCOS, deferred diagnostic labeling accompanied by frequent longitudinal re-evaluations of these girls considered to be at risk of PCOS is beneficial and prudent during adolescence (Level C).

(4) Even in the absence of a definitive diagnosis and the lack of an approved therapy for PCOS in adolescence, treatment options that both alleviate the current symptoms and decrease the risk of subsequent associated comorbidities are recommended (Level B).

References


