

Ovarian Disease in Adolescent Girls

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Abstract

Diagnosing PCOS in adolescence is difficult because the characteristics of the normal development of puberty interfere with diagnostic criteria for adults. The PCOS Handbook aims to the promote of accurate and timely diagnosis, improve ongoing treatment and also,improve the health outcomes for both adolescents and women with PCOS. This article focuses on specific guidelines for adolescent PCOS. Specific criteria for improving diagnostic accuracy and preventing overdiagnosis are: (1) Menstrual irregularity, which is known as the postmenstrual period; > 90 days (more than 1 year after menstruation), less than 21 days or less than 45 days (after menstruation) > 1 to <3 years) less than 21 days or less than 35 days (more than 3 years after menstruation) then Thrombosis: The primary menopausal cycle lasts more than 15 or 3 years. Irregular menstrual cycles (less than a year after menstruation) indicate a normal transition from puberty. Hyperandrogenism has been defined as hirsutism, severe acne, and / or hyperandrogenism and has been chemically confirmed by validated high-quality tests. With the exception of other disorders similar to PCOS, for adolescents with PCOS but who do not meet diagnostic criteria, it can be considered a risk label with adequate symptom management and regular reassessment. The menstrual cycle can be re-evaluated after more than 3 years of menstruation. If menstrual abnormalities or hyperandrogenism are present only at the beginning, ultrasound can be performed 8 years after menstruation. Screening tests are needed for the anxiety and for depression and also,evaluations for eating some disorders should be considered. Available data support and should be recommended for the benefits and health of healthy lifestyle interventions to prevent excessive weight gain. A combination of oral contraceptives and / or metformin can help control symptoms.Intensive participation requires a rigorous process to improve diagnostic criteria and treatment recommendations for adolescent PCOS.

Key words:-

PCOS,Hyperandrogenism,oligomenorrhea, spontaneously

Introduction

Polycystic ovary syndrome (PCOS), which often begins in the teens, is the most common type of endocrinopathy found in adult women. However, it is still often not diagnosed or diagnosed late, for example during counseling for an infertility problem in adulthood. (Hayek, 2016) The main symptoms such as menstrual disorders, obesity, acne, seborrhea, and hirsutism are often underestimated or are then the subject of a focused approach without the association and suspected multiple polycystic syndromes. However, this syndrome is long-term linked to cardiovascular and metabolic diseases. The epidemiological and individual significance of PCOS requires the practitioner. (Buggs, 2012)

PCOS definition and clinical picture

Polycystic ovary syndrome (PCOS) is defined classically by the association between various symptoms such as hyperandrogenism, cycle disorders and Android-like obesity. The first signs usually appear during the perinatal period. Menstruation usually occurs at a normal age, although PCOS can sometimes be the cause of a late period. (Grassi, 2011) The expression of the syndrome, particularly the frequency of clinical symptoms, and the extent of endocrine and metabolic changes, varies greatly from woman to woman, making the diagnosis difficult. One of the major components of PCOS is chronic ovulation. Period disturbances may appear due to anovulation in the form of frequent, irregular cycles, such as oligomenorrhea (cycle length greater than 35 days or fewer than eight periods per year), or amenorrhea. Hyperandrogenism also manifests itself in different ways (somewhat noticeable hirsutism, accompanied or not accompanied by varying degrees of acne). (Pfieffer, 2020)

Which occurs because, typical changes in endocrine and metabolism are increased androstenedione, increased LH / FSH, abnormal SHBG level with increased free testosterone, but normal total testosterone level, insulin resistance with glucose intolerance and hyperinsulinemia. (Chen, 2020)

Hyperandrogenism plays a major role in the pathophysiology of the disease. It is defined as an increase in the serum level of one or more androgens. Androgens are secreted by the adrenal glands and ovaries, and come from the peripheral conversion of primary steroids: 96% of testosterone is bound to blood proteins such as SHBG (sex hormone-binding globulin) and to a lesser extent albumin. Only the free portion of testosterone, determined by the level of SHBG is bioavailable and therefore active. (Işık Kaban, Filiz Cebeci, 2017) Notably, androgens are essential for the development of secondary sexual characteristics. These include the appearance of sexual hair and the development of sebaceous glands that are especially active in puberty, and thus the frequent and physiological presence of skin diseases such as acne and seborrhea. The action of the hormone testosterone is done on the target tissues primarily by converting it into dihydrotestosterone (DHT) by an enzyme called 5-alpha-reductase. (Chorro-Mari, 2020)

And during puberty, in girls, there is a slight increase in androgens (especially androstenedione AD) in the physiological levels of age, due to an increase in LH that stimulates its production in the ovarian stroma. Androstenedione is an aromatite to estrogen / estrogen. (Solorzano, 2011) During adolescence, one may also find hyperinsulinemia, relatively, but normal. This increase in insulin leads to a decrease in the concentration of SHBG, which further contributes to the increased androgenic effect. (Biro, 2014)

Clinically, hyperandrogenism is manifested by:

- Hirsutism: the increase and distribution of male-type hair growth in women. It can be measured with a Ferriman and Galloway score (score > 86). At the level of differential diagnosis, hirsutism should not be confused with hypertrichosis, which is an increase in hair growth prevalent in non-sexual areas. (Steven Dowshen, 2020)
- Acne: early, severe and persistent (both during treatment and in adulthood).
This article focuses specifically on recommendations for adolescents in leadership and the examines the evidence and the rationale behind of these recommendations. The researcher discusses the most importance of avoiding a lack of over diagnostic-based management for managing symptoms of PCOS in adolescents. The researcher is working to expand the way he identifies girls who have not yet been diagnosed with PCOS, which including the importance and the need for further follow-up. (Candace Currie, 2012)

Research Method

The Evidence-based methodology was used to develop policies with best practices. So that the researcher used the qualitative methodology in extracting information from the secondary studies, in addition to collecting data and statistics that they obtained regarding the subject of the study. (Sileyew, 2019) The qualitative methodology used included, the researcher's use of the content analysis method, and case studies of multidisciplinary experts who were directly involved in all stages, including health professionals, consumer organizations, adolescent doctors and women with PCOS. In the study case used, its content was analyzed, a total of 60 randomized samples of adolescent girls participated, and 40 evidence-based reviews and 20 narrative reviews were collected, most of which aimed to clarify and identify the evidence of the relevant to adolescents. (Sutton, 2015) The detailed explanation of the development of each of the sixty samples follow-up questions and reviews. Therefore, for each specific topic, provide guidance for this section of the report in highlighting the information. (Pharm., 2014) The researcher has thoroughly summarized the evidence following the I AGREE II Assessment Guidelines for Research and Evaluation (I AGREE) II compliance process. The GRADE framework was applied on the basis of the quality of evidence, desired or unintended consequences, validity, acceptability, cost, enforcement strength, and ultimately recommendations. (Mohajan, 2018) Evidence-based recommendations are based on a

complete and detailed review of all available evidence, as well as a rigorous and the structured of the GRADE process and a comprehensive review of the information and data provided regarding 60 participating samples of adolescent girls. Importantly, the broad participation of the stakeholders, which including women with PCOS and the multidisciplinary committees, raises questions about indicator research and highlights the impact of PCOS over the life course. (Busetto, 2020)The researcher also stressed the most importance of the accurate and early diagnosis to improve the education, prevention and the treatment of the complications in the long term.

The Categories of the recommendations are described and cleared in the Table 1 and include some evidence-based recommendations, and consensus recommendations action points. Which Include keywords in the recommendation "should", "can" and "should". These terms provide information on the type of recommendations (guide or even consensus), the GRADE quality and framework of evidence, as well as users (regular rules). These terms are refer to the general interpretation and practical application of recommendations and the balance between benefit and harm. The word 'should' be used when the benefits of the recommendation outweigh the harm and when the recommendation is relied upon as practical evidence. "Can" is used when the quality of evidence is limited, the available studies show that one approach has few distinct advantages over the other, or when the balance between the benefits affected is unclear. The word "should not" is used when evidence is insufficient or when the harm outweighs the benefit. The quality of GRADE recommendations is determined by the GDG through a structured review of the GRADE framework, which including a desirableeffect, side effects, facts, balance of resource requirements, and cost efficiency, fairness, feasibility and acceptability.(ND, 2020)

The GRADE approach contained as a conditionalrecommendationfor options, and a conditional recommendation for selection or comparison; Conditional recommendations for cucumbers. The quality of evidence was assessed based on the number of studies that covered findings and information about the project. Ranking of significance of key statistical data results for composite evidence. The quality of evidence reflects the degree to which the researcher's confidence in evaluating effectiveness is sufficient to support a particular recommendation and has been evaluated primarily by a team of evidence gathering experts. (Ignacio Ferreira-González, 2012)The GRADE recommendation emphasizes that the quality of evidence is continuous, a separate classification implying a certain degree of randomness. However, the benefits and the good of the simplicity, transparency, and clarity outweigh these limitations. Consensus recommendations do not contain a 'GRADE' rating as there is no quality rating of the evidence (because no evidence was found) and the point of implementation comes from the discussion of evidence-based recommendations or the clinical consensus (Table 1).(Convertino, 2013)

The Categories of the Recommendations in the PCOS Handbook

The Evidence-based on recommendations	When evidence is available, evidence-based recommendations will be provided when there is sufficient evidence to inform the recommendations of the guideline of the development group.
The Consensus recommendations	Clinical consensus recommendations are made when there is insufficient evidence for PCOS. The researcher will be notified of evidence from other groups and will be developed by the Policy Development Group in a rigorous and transparent process.
The Practice points	No evidence is found in clinical practice issues and significant clinical problems appear when evidence-based recommendations or clinical consensus are discussed.

The Result

For complete instructions, Teede et al. Viewed, provides the recommendations on five pints covered by GDGs: the diagnosis and the risk assessment of comorbidities, treatment and the assessment of emotional well-being, and the lifestyle, pharmacotherapy for infertility indications, and infertility the assessment and treatment. This article provides recommendations for adolescents, including the diagnosis, evaluation and treatment of emotional and lifestyle well-being and pharmacotherapy for indications of infertility. (Koumarianou, 2016) Recommendations presented in this paper include evidence-based on the recommendations, the consensus of recommendations, and points of practice. Most of the evidence-based on the recommendations for teens relate to treatment of PCOS. (Nekuei, 2013)

Major changes to the diagnostic guideline recommendation include the importance of removing some unnecessary tests and identifying adolescents "at risk of developing PCOS". The changes also aim to prevent the misdiagnosis, delay, underdiagnosis or overdiagnosis. The consensus recommendations for adolescents to diagnose PCOS are based on the best quality the evidence available and its limitations. (Cano, 2015)

Make a diagnosis

Evaluation is indicated when a teen girl is consulted about persistent menstrual disorders (mainly one or two years after menstruation) associated with clinical signs, particularly hirsutism, suggestive of hyperandrogenism, whether present or not. Obesity. The first part of the investigation is based above all on the history and clinical examination. When this first evaluation strongly indicates the presence of PCOS, the initiation of additional clinical investigations is warranted and recommended.(Robert Rebar, 2018)

Date

An important part of history in adolescence concerns the history of menstruation, including menstruation age and regular menstruation. In the present case, it aims to report relevant data on physiological development, but at the same time it reveals valuable information about the puberty experience and the level of information of the girl. In this sense, it actually performs a preventive and educational role. Since irregular periods are so frequent in the postmenstrual period, attention will be focused on the persistence or secondary manifestation of oligomenorrhea or amenorrhea.(Backes, 2019)

A history of hyperandrogenism (hirsutism and acne) should be carried out: due to its effect on self-esteem, these symptoms are often not mentioned spontaneously. In particular, there is no clear relationship between the frequency of complaints and the severity of symptoms. In addition to having previous treatment experiences, it is also important to determine when symptoms began and how often they develop. Family history makes it possible to search for the presence of such anomalies in the patient's family, since the incidence of PCOS is in the family. However, the method of inheritance has not yet been clarified.(UNESCO, 2014)

Physical examination

A thorough physical examination is an important part of the process. Watch out for signs of masculinity. The type of hair distribution will be described, the amount of hirsutism is quantified, and the BMI calculated. Examination of the breasts allows verification of whether or not galactorrhea is present. Abdominal palpation and if the young patient is sexually active, bilateral palpation, makes it possible to search for a mass.(Abdel-Rahman, 2020)

Lab tests

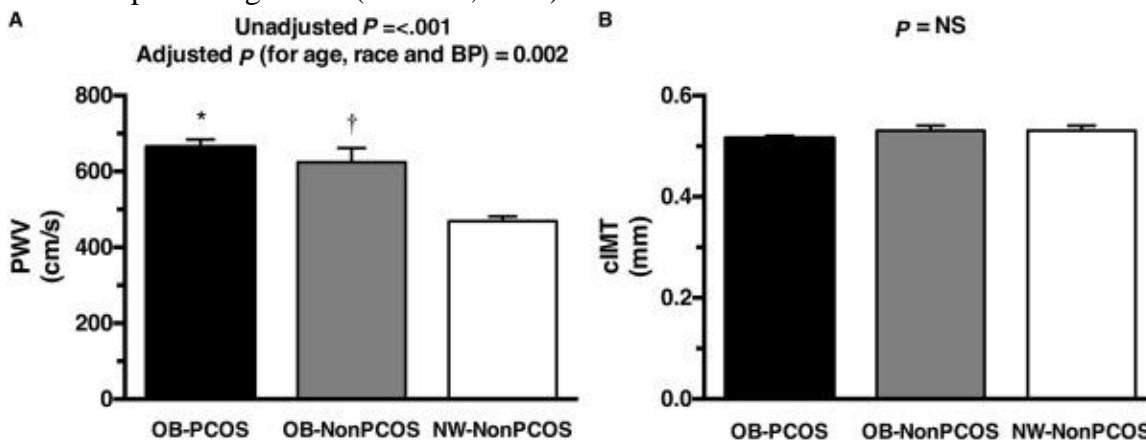
The aim of laboratory investigations is to assess the degree of androgen excess and characterize the origin of this excess, excluding the viral neoplasm, and finally to adapt and monitor treatment. The blood test should be taken in the morning, between the first and the fifth day of the cycle.

The indicated hormonal doses are: LH, FSH, progesterone (in menopause), free and total testosterone, DHEA, DHEAS, AD, 17 OHP (elevated if delayed adrenal hyperplasia is

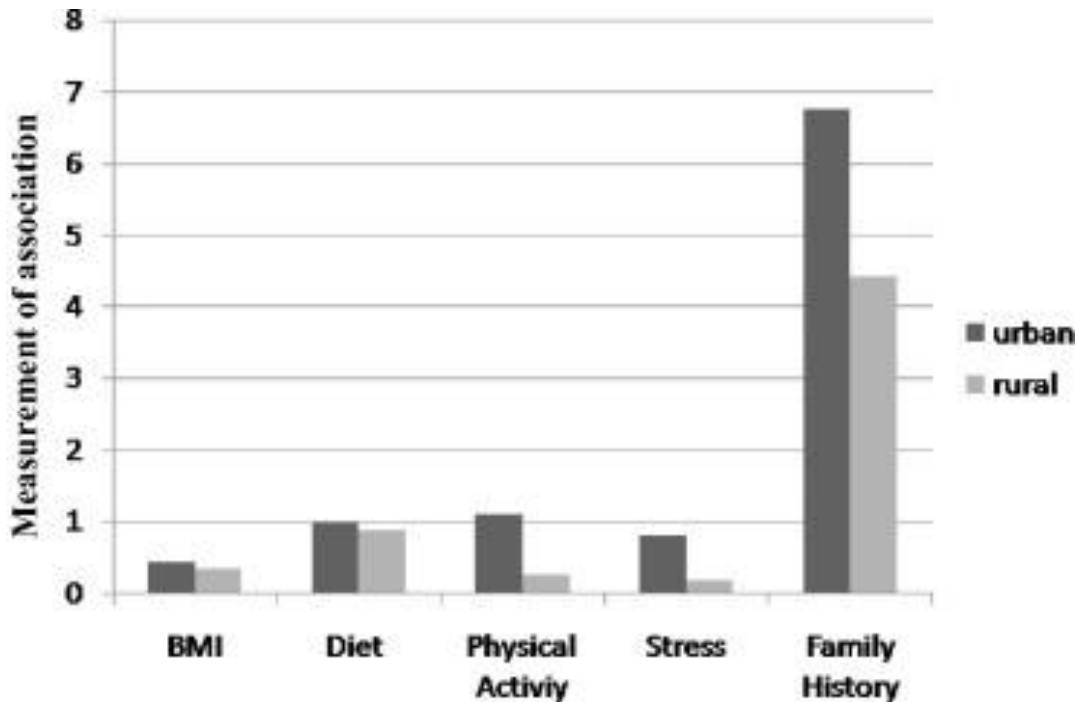
present). Additional hormonal doses are necessary in cases of oligomenorrhea and menopause: prolactin, TSH, and possibly T3, T4 (also in case of obesity). The following additional metabolic tests are indicated in cases of obesity or when the hormonal balance is positive for PCOS: glucose, insulin, total cholesterol, and good cholesterol.(George Mastorakos, 2017)

Photography

Ultrasound is not necessary to diagnose PCOS because a teenage girl with clinical signs and clinical treatment for PCOS may have a normal ovarian picture. However, it is still often required because a typical PCOS image confirms the diagnosis. It also helps rule out a suspicious lump in the abdomen or pelvis. When the level of testosterone in the plasma is very high, CT scan and MRI may be exceptionally necessary to rule out a hormone-producing tumor.(H.Balen, 2003)



As a result of the experiment carried out by the researcher, the VOP was higher for OB-SOP (664 ± 24 cm / s) and OB-no-SOP (624 ± 37 cm / s) than for NW-no-SOP (468 ± 13 cm / h).), $P < .001$), without CIMT differences. Systolic blood pressure, low-density lipoprotein, and non-high-density lipoprotein cholesterol were higher in OB-SOP and OB-no SOP than in NW-no SOP, and the cholesterol level of lipoprotein and HDLI was lowered. The vascular cell adhesion molecule 1 and the highly sensitive C-reactive protein were higher in OB-SOP than in NW-no-SOP. PWV was determined for obesity ($r_s = 0.46$), insulin sensitivity index (balance model evaluation - insulin resistance $r_s = 0.31$), systolic blood pressure ($r_s = 0.24$; $P 0.003$ for all) and free testosterone ($r_s = 0.24$; $P = 0.03$). In multiple regression analysis using OPV as the dependent variable, age, ethnicity, BMI, PCOS variant, and hypoglycemia as independent variables, only BMI contributed independently to the model ($p 2 = 0.068$, $p = 0.003$). (acog, 2020)



Association of factors affecting PCOS between rural and urban residents.

In addition, there are many studies that show that PCOS that occurs in adolescent girls is a lifestyle disorder associated with the modernization of life, but it fails to include and compare the population that follows the modern and traditional lifestyle, so that the ways of life in which adolescents live play in a big way in the occurrence of the cyst.

Conclusion

PCOS is a variable clinical and endocrine expression entity. It is the most common cause of hair loss in teens. Negative self-image and discouragement in social relationships are detrimental to the quality of life of these teenage girls. It is therefore necessary to distinguish between symptoms of PCOS and minor abnormalities of the cycle or physiological cutaneous manifestations during the premenstrual and postmenstrual period, associated with incomplete maturation of ovarian function.

It is highlighted that the preferred treatment for PCOS (the most difficult to perform) is weight loss in obese patients. In fact, weight loss leads to a decrease in ovarian secretion of androgens, a decrease in the production of estrogen, decreased insulin resistance and cardiovascular risks of PCOS. Psychological and behavioral factors as well as physical factors speak in favor of early management of PCOS, with the hope that in adolescence, dietary advice and those aimed at changing lifestyle (increased physical activity) have more lasting effect from an older age.

Half of adolescent girls with PCOS are obese and face a risk of progressive development of metabolic syndrome with glucose intolerance, high cholesterol, high blood pressure and endothelial dysfunction in adulthood. However, such a metabolic profile can also be seen in girls who have PCOS but who do not have obesity. Therefore, medical care

cannot be limited to diagnosis and treatment. It should be combined with detailed information, nutritional and behavioral advice.

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