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An Overview on the Assessment and Management of Polycystic Ovarian Syndrome

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ABSTRACT

One of the extremely critical challenges in reproductive health is polycystic ovarian syndrome (PCOS). It affects 9-18% of reproductive-aged women and it is prevalent in approximately 80% of infertile anovulatory women. Menstrual disruption, infertility, and pregnancy troubles are the most common reproductive issues linked with PCOS. Regarding management, studies discussing pharmaceutical treatments for reproductive outcomes are still inadequate. To review the published literature in order to evaluate the diagnosis and the management of PCOS. For choosing of articles the PubMed database was employed with the following specifications ((“polycystic ovary syndrome"[Mesh]) AND (“management” [Mesh]) OR (“diagnosis"[Mesh])). Physician awareness, understanding, and alertness to the likelihood of PCOS diagnosis are the most important factors in the diagnosis. Regarding PCOS management, there is no general treatment for PCOS, therefore treatment must always be customized to the specific needs of each patient.

A multidisciplinary team delivering patient-centered treatment is the best way to treat a PCOS case. The initial treatment for PCOS patients ought to be a change in way of life. Metformin is the most widely prescribed medicine for these individuals' metabolic management. It is also thought that inositol treatment might be an option for improvement of metabolism in PCOS women who cannot take metformin. Moreover, oral contraceptives ought to be contemplated for the control of irregular menses and/or medical hyperandrogenism in teenagers with a PCOS diagnostic.

Keywords: *Polycystic ovarian syndrome, Diagnosis, Evaluation, Complications*

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INTRODUCTION

One of the extremely critical challenges in reproductive health is polycystic ovarian syndrome (PCOS) (Gadalla *et al.*, 2020). PCOS is classified as a category II ovulation disorder by the World Health Organization, with a frequency of 9-18% among reproductive-aged women and approximately 80% among infertile anovulatory women (The Thessaloniki ESHRE/ASRM-Sponsored PCOS Consensus Workshop Group, 2008; Balen *et al.*, 2016).

Infertility, pregnancy problems, and psychological and metabolic aspects are only a few of the clinical manifestations of this complex illness. Menstrual disruption, infertility, and pregnancy troubles are the most common reproductive issues linked with PCOS. Despite the fact that most guidelines agree on the necessity and priority of lifestyle adjustment in PCOS and weight reduction in women who are overweight or obese, studies comparing lifestyle modification and pharmaceutical treatments for reproductive outcomes are still inadequate (Motlagh *et al.*, 2020). Nevertheless, a review the published literature that discussed the assessment and the different control options of PCOS were the main objective of the article.

MATERIALS AND METHODS

For choosing of articles the PubMed database was employed with the following specifications((“polycystic ovary syndrome"[Mesh]) AND (“management” [Mesh]) OR (“diagnosis"[Mesh])).

Article selection was based on the inclusion of certain topics that lined up with the objective as the ones that did not have the indicated key topics as their chief directive were not considered. The topics were; polycystic ovarian syndrome, diagnosis and management

Around 135 publications were chosen as the most clinically relevant out of 918 articles indexed in the last decade, and their full texts were evaluated. A total of 30 of the 135 were included after a thorough examination. Additional research and publications were found using reference lists from the recognized and linked studies. Expert consensus recommendations and commentary were added where relevant to help practicing physicians assess cirrhosis in the simplest and most practical way possible.

RESULTS AND DISCUSSION

In 1935, Stein and Leventhal initially mentioned PCOS when patients came with a variety of endocrine disorders, including polycystic ovaries, amenorrhea, and hirsutism. It is currently recognized as a condition that may impact the lives of women and manifest itself in a variety of ways (Sirmans & Pate, 2014). In the past, this disease was treated by gynecologists and endocrinologists, but since the disorder has become more common, it is now being treated by general care physicians as well. According to the US National Institutes of Health guidelines, PCOS prevalence is currently between 6% and 10%, and as high as 15% when using the wider Rotterdam criteria (Fauser *et al.*, 2012).

Pathophysiology

The female hypothalamic–pituitary–ovarian (HPO) axis is a finely coordinated and strictly controlled mesh that is eventually required for the species' procreative capability and prevention of extinction. The HPO axis reacts to both internal and external cues (hormonal and neuronal) (i.e., environment influences). Starting during pregnancy, these variables have an influence on future generations through epigenetic factors that affect the developing brain and germ cells. The HPO axis is disrupted in PCOS, a condition portrayed by symptoms of androgen excess and ovulatory impairment (Hochberg *et al.*, 2011; Witchel *et al.*, 2019).

PCOS is a hyperandrogenic condition characterized by oligo-anovulation that has no other etiology. It is an exclusionary diagnosis but it is responsible for the vast majority of hyperandrogenic symptoms.

Functional ovarian hyperandrogenism (FOH) is the source of nearly all PCOS cases. Two-thirds of PCOS cases exhibit functional ovarian hyperandrogenism, which is defined by androgen secretory dysregulation and an over-response to gonadotropin stimulation in 17-hydroxyprogesterone. Although the remaining PCOS patients with atypical FOH do not have a 17-hydroxyprogesterone over-response, testosterone increase can be seen if adrenal androgen production is suppressed. A similar isolated functional adrenal hyperandrogenism affects about 3% of PCOS patients. The majority of PCOS instances are mild. There is no indication of steroid secretory irregularities in these individuals, and the most of them are obese, which physicians believe is the cause of their atypical PCOS. Currently, specific testing for the FOH subgroup has limited clinical significance (Carvalho *et al.*, 2018).

Ovarian hyperandrogenism with functional Hyperandrogenism, oligo anovulation, and polycystic ovarian morphology are the main symptoms of PCOS. The causes of functional ovarian hyperandrogenism are complex, involving both hereditary and environmental influences. Insulin excess, that is attributed to the predisposal of luteinizing hormone (LH) to the ovary by disrupting the procedure of homologous desensitization to LH in the normal ovulation cycle, whilst initiating an intrinsic uncertainty among regulatory systems of the ovary, are both factors that contribute to this dysregulation. Most steroidogenic enzymes and proteins involved in androgen production are overexpressed in PCOS Theca cells. The primary cause of early luteinization in Granulosa cells is an excess of androgen and insulin.

Excessive androgen promotes the enrollment of primordial follicles into the growth phase at the start. Concurrently, it causes early luteinization, preventing the dominant follicle from being selected. This causes PCOM, which is characterized by characteristic PCOS histopathologic and gross anatomic alterations. Increased LH perpetuates PCOS, although it does not cause it. LH excess is prevalent and required for the sex hormone release and development of gonadal steroidogenic enzymes, but because to LH-induced desensitization of theca cells, it is seldom the major source of ovarian androgen excess.

Insulin-resistant hyperinsulinism affects theca cells, boosting steroidogenesis and prematurely luteinized granulosa cells, and stimulating fat formation in almost half of individuals with functional ovarian hyperandrogenism. Hyperandrogenism causes an increase in LH, which affects the theca and luteinized granulosa supporting cycles.

Ovarian hormonal dysregulation changes pulsatile gonadotropin-releasing hormone emancipation, perhaps leading to a greater proportion of LH production and secretion compared to follicle-stimulating hormone (FSH). The relative reduction in FSH limits appropriate activation of aromatase activity inside the granulosa cells, resulting in decreased conversion of androgen to the strong estrogen estradiol. Creating a noncyclic hormonal cycle that repeats itself.

Increased serum androgens are transformed to estrogens in the peripheral, predominantly estrone. Because estrogen synthesis is increased in obese PCOS individuals, estrogen conversion happens largely in the stromal cells of adipose tissue. In disparity to the typical oscillations in responses found in the vicinity of a developing follicle and quickly fluctuating estradiol intensities, this conversion leads to persistent feedback at the hypothalamus and pituitary gland. Endometrial hyperplasia can result from unopposed estrogen stimulation of the endometrium (Elpidio *et al.*, 2018; Shorakae *et al.*, 2018).

Diagnosis

Physician awareness, understanding, and alertness to the likelihood of PCOS diagnosis are the most important factors in the diagnosis. A third or more of the women said it took more than two years and three or more health providers to get a diagnosis (Gibson-Helm *et al.*, 2017).

If a reproductive-age female exhibits some hyperandrogenism symptoms: hirsutism, acne, and/or male pattern baldness, the physician ought to consider PCOS. If the patient additionally has irregular menstrual periods and/or infertility, PCOS ought to be considered much more seriously. Obesity and insulin resistance symptoms may also be present in patients. Metabolic syndrome includes obesity and insulin resistance symptoms, and evidence shows that women with PCOS are more liable to metabolic signs (Sirmans & Pate, 2014). Women with PCOS may exhibit one or more of the signs and symptoms mentioned earlier. The treating physicians ought to describe which phenotype (A–D) the patient possesses, as each is linked with a different risk of metabolic and other morbidities (Azziz *et al.*, 2016).

The severity of acne lesions is evaluated on a scale of mild, moderate, and severe. Unless face planes are separated and lesions are counted individually, this is generally a subjective measure. Acne in Patients with PCOS frequently consists of significant cystic lesions. Excessive androgen production, as well as the sebaceous glands and follicles in the skin, are linked to acne with this diagnosis. Acne that is resistant to treatment has an even greater link to PCOS (Goodman *et al.*, 2015). Menstrual cycle patterns in acne patients ought to be evaluated since they may imply a PCOS diagnosis (Pace, 2014; Sirmans & Pate, 2014).

Hirsutism is observed in PCOS individuals who have excessive androgen release. It appears gradually in many people and becomes more severe as they acquire weight. In roughly 70% of PCOS patients, hirsutism is present. Hirsutism affects the face, chest, upper lip, chin, thighs, arms, back, and abdomen, in those with PCOS (Fauser *et al.*, 2012; Sirmans & Pate, 2014; Goodman *et al.*, 2015).

Male pattern baldness linked to the excretion of hyperandrogen in a tenth of patients with PCOS. Hair loss at the crown, vertex, or in a diffuse pattern in ladies with hyperandrogenemia, but those with extreme hyperandrogenemia might lose the frontal hairline or bitemporal hair (Goodman *et al.*, 2015).

It may make the patient emotionally stressed, since it could be the main symptom of the problem. Obesity and insulin resistance symptoms, in addition to hyperandrogen signs and symptoms, can be problematic for people with undiagnosed PCOS. Obesity in PCOS has been studied in a variety of ways, but it is thought to be as high as 76% in some cases (Ching *et al.*, 2007). Insulin resistance and hyperandrogen symptoms are also linked to a higher body mass index (BMI) (Fauser *et al.*, 2012). Insulin resistance affects between 65 and 70% of PCOS patients. Insulin resistance can cause metabolic manifestation, which can be harmful to a patient's general health (Marshall & Dunaif, 2012).

Patients in primary care frequently complain about irregular menses. Women with PCOS may have irregular menses, oligomenorrhea (infrequent menstrual bleeding), amenorrhea (amenorrhea), or unexpected hemorrhage. Only about a third of PCOS individuals have regular menstrual periods (Legro *et al.*, 2013; Sirmans & Pate, 2014). Amenorrheic women experience the most severe hyperandrogen symptoms as a result of their PCOS. Patients' menstrual cycles must be discussed at every primary care appointment, since this detail is crucial in identifying PCOS. PCOS-related infertility is typically overlooked until a woman tries to conceive. Anovulation, which can occur in PCOS patients, is linked to infertility. Anovulation is indicated by menstrual periods that last more than 35 days. Cycle durations of greater than 32 days ought to be further investigated . Clinicians measure cycle duration by keeping count from the first day of the cycle to the first day of the following cycle. Infertility affects 40% of PCOS patients (Fauser *et al.*, 2012; Sirmans & Pate, 2014; Goodman *et al.*, 2015).

Teenager girls may have signs and symptoms of PCOS that are comparable to those seen in adults. Anovulatory periods are a common occurrence when menstrual cycles regulate, and biological changes associated with adolescence can cause irregular cycles and acne. Before a PCOS diagnosis can be made, labs must be performed and the patient must fulfill the PCOS criteria. It might take a period of time during adolescence to formulate a regular sequence of presenting symptoms and keep record of menstrual cycle history. Clinicians ought to urge teenager patients to document menstrual cycles to determine cycle duration if PCOS is an issue. Perimenopause and menopause are two stages of the menopause process. PCOS is a condition that is mostly symptomatic throughout reproductive years, thus patients going through perimenopause and menopause might be even more difficult to identify. They might have irregular periods historically and hyperandrogen symptoms, but these signs disappear once menstruation stops (Fauser *et al.*, 2012; Welt & Carmina, 2013). When a physician examines a woman's menstrual cycle and hyperandrogenism history throughout her reproductive years, she may be suspicious of a previous PCOS diagnosis. Women in their menopausal and perimenopausal stages may mainly show secondary symptoms of PCOS, such as obesity and metabolic syndrome, if they are not detected before menstruation stops (Legro *et al.*, 2013; Welt & Carmina, 2013).

Investigations

To determine each ovarys' capacity and antral follicle, an ultrasonography of the pelvis ought to be done, ideally a transvaginal ultrasonography.

Hormonal testing

Circulatory hormones are measured in individuals with suspected PCOS for three reasons: to corroborate or disprove hyperandrogenism, to corroborate or disprove ovarian dysfunction, and to rule out comparable or similar illnesses (Attia *et al.*, 2021). Notably, identification of hyperandrogenism is most useful in individuals who do not have obvious clinical signs of hyperandrogenism; if androgen measurements are utilized in the examination of a patient thought of having PCOS, the tests employed have to be of the highest emminence and sensitivity. If properly evaluated, up to 40% of eumenorrheic hirsute patients exhibit oligo-anovulation, as previously stated (Lizneva *et al.*, 2016).

On days 22–24 of the cycle (a little later than typical for ovulation tracking to detect late ovulations) a progesterone reading should be obtained , especially in multiple cycles, is the simplest technique to test for oligo-anovulation in these individuals. Furthermore, some researchers have proposed that anti-müllerian hormone be used instead of transvaginal ultrasonography to determine ovarian health, with higher anti-müllerian hormone indicating the existence of more preantral follicles (Azziz *et al.*, 2016). However, current evidence suggests that using anti-müllerian hormone to diagnose PCOS ought to still include an ovarian transvaginal ultrasound (Fraissinet *et al.*, 2017). Anti-müllerian hormone test features, cutoff values, and

projective efficacy of anti-müllerian hormone in PCOS diagnosis will require more research. Although most identical or resembling conditions may be ruled out by a clinical examination, some of them require more detailed hormonal testing to be ruled out or identified. Thyroid problems, hyperprolactinemia, and non-classic adrenal hyperplasia is the most common, all of which may be ruled out by measuring thyroid-stimulating hormone, prolactin, and 17-hydroxyprogesterone, respectively.

1% to 10% of hirsute women are affected by Non-classic adrenal hyperplasia caused by CYP21A2 mutations, that are ethnicity dependent, and is the most prevalent autosomal-recessive condition in the world. Even though the American College of Obstetricians and Gynecologists' 2018 Practice Bulletin on PCOS recommends screening for non-classic adrenal hyperplasia with 17-hydroxyprogesterone mainly in ladies that belong to high risk groups for non-classic adrenal hyperplasia, other evidence suggests that prompt diagnosis and corticosteroid remedy can better the chances of reproductive outcomes (American College of Obstetricians and Gynecologists' Committee on Practice Bulletins—Gynecology, 2018).

As a result, all women showing indications of hyperandrogenic, signs, or complaints ought to be evaluated for non-classic adrenal hyperplasia, regardless of severity. It is important to remember that non-classic adrenal hyperplasia cannot be diagnosed or even suspected clinically, hence testing for 17-hydroxyprogesterone is required. A basal follicular phase (ideally in the morning) 17-hydroxyprogesterone test can be used to screen for non-classic adrenal hyperplasia (Lizneva *et al.*, 2016). Patients ought to have an acute adrenocorticotropic hormone-1-24 stimulation test with 17-hydroxyprogesterone calculated initially (to guarantee there is a reaction) and 30–90 minutes after if the screening value is greater than 2 ng/mL (200 ng/dL). Post-stimulation levels of 17-hydroxyprogesterone higher than 10 ng/mL (1,000 ng/dL) usually prove non-classic adrenal hyperplasia (although a heterozygote for a CYP21A2 mutation may occasionally show this level of abnormality), whereas levels greater than 15 ng/mL (1,500 ng/dL) almost always indicate non-classic adrenal hyperplasia. Although CYP21A2 genetic testing may be considered for a diagnosis and determination the kind of abnormality, it ought not to be utilized to screen for non-classic adrenal hyperplasia. Finally, while abnormalities in CYP11B1 and HSD3B2, which determine 11b-hydroxylase and 3b-hydroxysteroid dehydrogenase activities, respectively, might result in non-classic adrenal hyperplasia, there have been few non-teen individuals that have these problems, and even fewer in the absence of genital ambiguity. As a result, regular screening for 3b-hydroxysteroid dehydrogenase and 11-hydroxylase-deficient non-classic adrenal hyperplasia is not advised, in contrast to 21-hydroxylase-deficient non-classic adrenal hyperplasia (Lutfallah *et al.*, 2002; Azziz *et al.*, 2016).

Additional tests

The clinical presentation will determine the necessity for further hormonal testing (e.g., day long urine overnight dexamethasone suppression test for free cortisol) and imaging (e.g., of the adrenal). Evaluation of comorbidities assessment of metabolic status and comorbidities ought to be done once PCOS has been diagnosed (or concurrently if the diagnosis looks to be almost certain). Due to the fact that basal glucose and glycosylated hemoglobin levels typically cannot detect this in women with PCOS, a 2-hour, 75-g oral glucose tolerance test (OGTT) ought to be used to exclude type 2 diabetes mellitus or impaired glucose tolerance. A fasting glucose will not distinct most of women with PCOS who have impaired glucose tolerance, and around a third of those with type 2 diabetes mellitus, and glycosylated hemoglobin is not a reliable measure of glucose intolerance in PCOS as contrasted to an OGTT.

Incorporating insulin measurements into the OGTT can offer further confirmation of the existence and severity of hyperinsulinemia, whose detection by basal insulin levels is impossible. In individuals with obesity or significant hyperinsulinism, a lipid profile, as well as liver function tests, can be obtained regardless of age. Unless there is a major change in the clinical course, repeat evaluations of putting up with glucose and lipidemia ought to be conducted every 2–3 years.

Transvaginal ultrasonography, which is used to assess ovarian morphology, can also be utilized to detect other pelvic illnesses, such as endometrial abnormalities. Furthermore, obese PCOS individuals may develop sleep apnea, however it is unclear if this is more common than would be predicted based on weight alone (Helvaci *et al.*, 2017). As a result, sleep apnea ought to be screened using specific questionnaires or a referral to a sleep expert. Furthermore, all PCOS patients ought to be evaluated for mental problems, either using particular questionnaires or referring to a specialist.

Treatment of PCOS

Importantly, there is no general treatment for PCOS, therefore treatment must always be customized and tailored to the specific needs of each patient. Treatment is symptom-oriented, and in mild situations when proper follow-up of the patient's symptoms is all that is required, it may not be required at all (namely, in a patient presenting with PCOM and mild oligomenorrhea). Actually, no medications have been licensed for the treatment of PCOS (Escobar-Morreale, 2018).

Androgen excess, oligoovulation, and insulin resistance may be targets for pharmaceutical therapy, but in order to prevent or treat obesity, lifestyle counseling ought to be offered in all situations. Because PCOS is a lifelong disorder, treatment ought to be dynamic, long-term, and adjusted to the different circumstances, individual requirements, and anticipations of the individual patient, without the inclusion of a few rare secondary cases in which even after the triggering aetiological factor is resolved the syndrome may revolve (Radosh, 2009; Conway *et al.*, 2014).

PCOS treatment ought to be recommended not only to reduce symptoms, but also to avoid long-term consequences. To lower androgen levels and alleviate symptoms while providing endometrial protection, combined oral contraceptives (COCPs) and antiandrogens are the standard of therapy. The therapy strategy, however, ought to be adapted to the patient's desire (or lack thereof) to get pregnant, the requirement for an aesthetic approach, and the presence of simultaneous metabolic changes. Reducing hyperandrogenic symptoms, managing abnormal metabolism characteristics and reducing risk factors for cardiovascular disease and type 2 diabetes, endometrial hyperplasia prevention, preparing for and getting a safe pregnancy if desired, and increasing quality of life and general well-being are all PCOS therapy objectives. A multidisciplinary team delivering patient-centered treatment is the best way to

achieve these objectives (Luque-Ramírez *et al.*, 2018; Rocha *et al.*, 2019).

Metabolism-directed treatments

The foremost treatment for patients of PCOS ought to be a change in way of life. Weight reduction caused by switch ups in eating habits and physical exercise lowers blood insulin and testosterone levels, lowering the possibility of developing type 2 diabetes or glucose intolerance in overweight and obese people. However, when insulin resistance/glucose intolerance or dyslipidemia persists after lifestyle changes, pharmacological therapies are recommended (Balen *et al.*, 2016).

Metformin is the most widely prescribed medicine for these individuals' metabolic management. It is the most tested insulin sensitizer in PCOS. It is mainly used in teenagers aged 15 to 19 years in spite of being "off label" for this indication. Moreover, according to the current international proof-based directives for analysis and control of PCOS, the use of metformin in accumulation to lifestyle could be negotiated in teenagers with signs of PCOS before the diagnosis is made or its distinct diagnosis.

The used metformin doses varied from 1000 to 2000 mg per day, with moderate gastrointestinal discomfort being the most common adverse effect. The incidence of adverse effects and adherence to treatments have not been completely described, which is one of the study's limitations. Metformin side effects can be decreased by initially having a low dosage then gradually increasing it, as well as using extended-release formulations.

Despite popular belief and uncontrolled observational research, no clear proof exists to show that that metformin decreases BMI in women with PCOS in comparison to placebo. The supplementation of metformin to antiandrogen and COCP may have just a minor effect on BMI. Metformin has little to no effect in womens' serum triglyceride levels nor the reduction of the circumference of the waist with PCOS, indicating that treatment does not appear to reduce body adiposity (Morley *et al.*, 2017; Luque-Ramírez *et al.*, 2018).

Liraglutide is a glucagon-like peptide receptor 1 agonist that has been licensed for the treatment of obesity and type 2 diabetes. Liraglutide was found to be helpful in causing considerable weight loss and reducing waist circumference in obese women with PCOS (Jensterle *et al.*, 2015).

Orlistat is a lipase inhibitor that has been approved to treat obesity. Orlistat is beneficial in causing weight loss and improving clinical and biochemical indicators of hyperandrogenism and insulin resistance in overweight or obese women with PCOS.

Insulin-sensitizing substances such as myo- and D-chiro-inositol operate as secondary informers in signaling of insulin . These chemicals have been studied as potential metformin substitutes in PCOS women that have insulin resistance. According to a recent analysis, insulin isoforms influence insulin action in a variety of target organs, including the ovary (Graff *et al.*, 2016). Primary medical tests without a placebo or metformin group found a lowered serum testosterone and a heightened SHBG levels after half a year of treatment with myo-inositol alone or in combination with D-chiro-inositol, and no change in the mature oocytes number got from in vitro fertilization (IVF) between D-chiro-inositol alone or in combination with myo-inositol. Myo-inositol complementation for IVF did not increase oocyte or the quality of embryo, according to a recent meta-analysis (Mendoza *et al.*, 2017).

It is thought that inositol treatment might become an possible option for increasing metabolism in PCOS women who cannot take metformin, based on the present wealth of data, although comprehensive evidence with a direct comparison of inositols and metformin is currently lacking. Three short, single-center randomized controlled trials published in 2017 looked at this subject and showed that either myo-inositol or metformin had superior outcomes or provided equivalent benefits. Inositol (in any form) ought to be regarded as a test treatment in PCOS (Teede *et al.*, 2018).

Combined oral contraceptives (COCPs)

According to recent international evidence-based guidelines, COCPs (estrogen and progestin preparations) ought to be thought of for the control of menstrual irregularity and/or clinical hyperandrogenism in teenagers with a definitive diagnosis of PCOS and in teenagers at risk of PCOS before the diagnosis is confirmed. Although there is insufficient evidence-based data on particular kinds or dosages of progestins, estrogens, or COCPs for the treatment of PCOS in teenagers and women, the lowest effective estrogen dose (20 to 30 mg of ethinylestradiol) ought to be tried (Teede *et al.*, 2018).

When prescribing COCPs, complete medical histories of the patient and her family ought to be obtained to determine contraindications such as the risk of thromboembolism. In most cases, ethinylestradiol plus cyproterone acetate combinations containing 35 mg of ethinylestradiol ought to not be regarded as initial treatment for PCOS. In teenagers with PCOS, therapy duration has not been tested beyond 24 months. COCPs, on the other hand, have been used for contraception for a long time. COCPs help teenagers with PCOS with their menstrual irregularities. COCPs ought to also be available when contraception is required, as well as medical therapy for hirsutism or acne. Menstrual irregularity can also be treated with cyclical medroxyprogesterone acetate when contraception is not necessary (10 mg per day for 10 days). if lesser menstrual cycles are desired and/or a cultural predilection for not taking drugs on a daily basis or being on COCPs, this can be given (Witchel *et al.*, 2019).

CONCLUSION

Physician awareness, understanding, and alertness to the likelihood of PCOS diagnosis are the most important factors in the diagnosis. Regarding PCOS management, there is no general treatment for PCOS, therefore treatment must always be customized to the specific needs of each patient.

A multidisciplinary team delivering patient-centered treatment is the best way to treat a PCOS case. The initial treatment for PCOS patients ought to be a lifestyle change. Metformin is the most widely prescribed medicine for these individuals' metabolic management. It is also thought that inositol treatment might be an option for improvement in metabolism in PCOS women who cannot take metformin. Moreover, oral contraceptives ought to be taken into consideration for the control of menstrual irregularity and/or clinical hyperandrogenism in teenagers with a PCOS diagnostic.

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