...The Newsletter of The PCOS Society of India

- 3rd Annual International Conference of the PCOS Society (India) – "PCOS Through the Cycle of Life"
  Page 03 to 05

- Consensus Statement on the Use of Oral Contraceptive Pills in Polycystic Ovarian Syndrome Women in India
  – Dr. Duru Shah, Dr. Madhuri Patil
  On behalf of the National PCOS Working Group
  Page 06 to 12

- Editorial, New patrons, Life members
  Page 12
A proud moment for the PCOS Society of India!

Our Society has been the only Indian Society to be a part of the recently published “International Evidence-based Guidelines for Assessment and Management of PCOS 2018.” Enclosed is the link to the entire Guidelines which have been uploaded on the PCOS Society Website, especially for our PCOS members. The Guidelines consist of a 200+ page document which has been summarized into “Recommendations from the international evidence-based guideline for the assessment and management of Polycystic Ovary Syndrome” published recently in the Fertil Steril and Human Reproduction Journals. The Guidelines have been developed by the Centre for Research Excellence in Polycystic Ovary Syndrome (CRE-PCOS) in association with 37 societies and organizations covering 7 countries engaged in the process involving 40 systematic and 20 narrative reviews, led by ASRM & ESHRE.


The PCOS Society of India has also published its own “Consensus Statements on the “Use of Oral Contraceptive Pills in PCOS Women in India” which have been published in the Journal of Human Reproductive Sciences. Here is the link for this 28 page Document, a part of it being published in this issue itself. http://www.pcosindia.org/conference-presentation.php.

I must thank the Members of the Working Group who worked on the Consensus for 2 full days, Dr. Madhuri Patil for helping me put together the document and the team at Cipla for supporting its logistics for the 2 day Meeting. I sincerely thank the various Organizations which have collaborated with us in the preparation of these Guidelines.

The PCOS Society of India

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Our Annual Conference in Gurugram, entitled “PCOS through the cycle of Life” was held once again in collaboration with the AEPCOS Society, and it was academically fantastic and I must thank the Gurgram Organizing team led by Ragini Aggarwal and Rita Bakshi who did a brilliant job. The details and pictures of the conference are enclosed in this issue. I must thank our international faculty consisting of Enrico Carmina, Kathleen Hoeger, Togas Tulandi and Kannan Alpadi for their expertise and invaluable contribution to our conference. All the conference lectures and photos have been uploaded on the PCOS Society Website http://www.pcosindia.org/events.php. Please look for your photographs there!

The “PCOS Online Certificate Exam”, the “PCOS Practitioner Exam” and the “PCOS Quiz” will continue.

Watch out for more exciting news soon!

Wish you all Happy Holidays!!
The Third International Conference of the PCOS Society (India) entitled “PCOS – Through the Cycle of Life”, jointly organized by The PCOS Society (India) and The Androgen Excess and PCOS Society (AE-PCOS Society) was held at The Leela Ambience Hotel, Gurugram, NCR between 22nd & 24th June, 2018.

A galaxy of international faculties, which included Professor Enrico Carmina - Executive Director and CEO of AE-PCOS Society, Professor Kathleen Hoeger, Dr Kanan Alpadi & Dr. Togas Tulandi attended the Conference.

The conference focused on different stages of life affected by PCOS, including the prenatal, childhood, adolescence, reproductive and postmenopausal periods. The conference included three Pre-Congress Workshops, PCOS Practitioner Examination and PCOS Quiz. The Workshops included “Lifestyle Changes- The First Step to Combating PCOS”, “PCOS - A Diagnosis of Exclusion”, and “Cosmetic Therapies - Live Demonstration”. The 1st workshop on Lifestyle Changes in PCOS covered the impact of lifestyle on PCOS, different lifestyle interventions, diets for PCOS and failure of lifestyle changes. The 2nd workshop on “PCOS - A Diagnosis of Exclusion” focused on the differential diagnosis and exclusion criteria before diagnosing PCOS. The workshop on Cosmetic Therapies was a live demonstration of Laser hair reduction and Energy-based acne treatment for PCOS. All the workshops were interesting and well-attended.

The sessions over 3 days covered all topics related to PCOS diagnosis, Dermatological manifestations, Metabolic sequelae, Quality of Life, Pregnancy in PCOS and management of PCOS. The topics were covered by a multidisciplinary faculty of Endocrinologists, Gynecologists, Fertility Specialists, Dermatologists, Sonologists, and Nutritionists. The inaugural panel discussion on the Epidemic of PCOS in India was thought provoking and attended by gynecologists, endocrinologists, dermatologists, scientists, public-health experts, scientists, media professionals, government and private health care representatives. Mrs. Rekha Sharma, Chairperson, National Commission for Women, was the Chief Guest for the inauguration. Padmashree Dr. Alka Kriplani was the Guest of Honour. The Guest of Honour for Valedictory function and Certificate Awarding was Smita Mahale, Director NIRRH, Mumbai.

Ten Round Tables held during the Conference discussed Luteal Support in Infertile PCOS women, Letrozole versus Clomiphene Citrate, Gonadotropins for Ovulation Induction, Medical Treatment of Obesity, Oral Contraceptives for Adolescent PCOS, Metformin in Lean and Obese PCOS, Inositols in PCOS, Vitamin D in PCOS, Acne and Hirsutism in PCOS. All these tables were lead by international and national faculty with 10-15 delegates on each table.

There was a lot of audience participation with questions being answered by the audience using voting pads and live interaction between the delegates and the faculty after every session.

All lectures slides, which have consent of the authors are available free of cost to all Members of the PCOS Society as Continuing Medical Education on the PCOS Society website. The 3 day conference including the Workshops was well attended by 439 delegates and 83 national and international faculties. Oral and poster presentations were excellent. The winners for oral presentation were: Dr. Gulrez Tyebkhan, Dr. Hiya Aggarwal, Dr. Shaveta Jain. The winners for the poster presentation were Dr Shiveta Kaul (1st), Dr. Kanchan Rani (2nd), Dr. S. Divya (3rd) and Dr. Aakanksha Kumar (3rd).

A National – level PCOS Quiz was held during the Conference. Drs. Mily Pandey and Jevan Reddy J. were the proud quiz winners.

The PCOS Practitioner Certificate Exam was also held during the Conference based on PCOS Tutorials on PCOS published by the PCOS Society of India.
Invited Speakers

Dr. Enrico Carminia
Dr. Togas Tulandi
Dr. Kathleen Hoeger

Dr. Kannan Alpadi
Dr. Uday Thanawala
Dr. Rekha Sheth

Practitioners Exam

Members of the Organising Committee of the Conference with Dr. Togas Tulandi
Round Tables

Quiz Certificate

PCOS Tutorial Certificate
Consensus Statement on the Use of Oral Contraceptive Pills in Polycystic Ovarian Syndrome Women in India

Abstract

Objective: To provide consensus recommendations for health care providers on the use of oral contraceptive pills (OCPs) in polycystic ovarian syndrome (PCOS) women in India.

Participants: Extensive deliberations, discussions, and brainstorming were done with different fraternities (specialists) being involved. These included endocrinologists, gynecologists, reproductive endocrinologists, dermatologists, public health experts, researchers, and a team from the National PCOS Working Group for Women’s Health and Fertility.

Evidence: Published literature was retrieved through searches of Medline and The Cochrane Database from January 2003 to December 2017 using appropriate controlled vocabulary (e.g., oral contraceptive pills, polycystic ovarian syndrome, long term outcomes, infertility). Clinical practice guideline collections, clinical trial registries, and national and international medical specialty societies’ publications and data were also reviewed to suggest the recommendations.

Quality of evidence

- High: Further research is very unlikely to change our confidence in the estimate of effect. Several high-quality studies with consistent results in special cases: one large, high-quality multicentric trial.
- Moderate: Further research is likely to have an important impact on our confidence in the estimate of effect and may change the estimate. One high-quality study several studies with some limitations.
- Low: Further research is very likely to have an important impact on our confidence in the estimate of effect and is likely to change the estimate.
- One or more studies with severe limitations.
- Very Low: Any estimate of effect is very uncertain. Expert opinion. No direct research evidence. One or more studies with very severe limitations.

Process

The working group for guideline committee included members from the PCOS Society (India), Indian Society for Assisted Reproduction, The Mumbai Obstetric and Gynaecological Society, The Endocrine Society of India, Indian Association of Dermatologists, Venereologists and Leprologists, Cosmetic Dermatology Society (India), Academicians from Medical Colleges, National Institute for Research in Reproductive Health, and a Research Associate.

Background

Oral contraceptive pills (OCPs) have been the first line therapy for concurrent treatment of menstrual irregularity, acne, and hirsutism in women with polycystic ovarian syndrome (PCOS), thus playing an important role in the symptom management of the PCOS women. The Combined OCP (COCP) also improve dysmenorrhea and menorrhagia, treatment of menstrual irregularity, acne, and hirsutism. Several new formulations of OCPs have been developed to decrease the side effects. This includes use of less androgenic progestins and lower doses of ethinyl estradiol. These consensus recommendations help the health provider to choose the right type of OCPs, which will alleviate the symptoms with minimal side effects. It also gives insight into the indications, contraindications, and concerns regarding the use of OCPs in women with PCOS.

Conclusions

This consensus statement provides the guidance/recommendations for Indian practitioners regarding the use of OCP in women with PCOS. PCOS is one of the common endocrinopathies encountered in gynecological/endocrine practice. The spectrum of this disorder may range from prepubertal girls with premature pubarche, young girls with hirsutism, acne and anovulatory cycles, married women with infertility, and elderly women. Although obesity is a common feature for most PCOS patients, ‘lean PCOS’ also exists. For several years, OCPs have played an important role in the symptom management of PCOS women. This is due to the fact that OCPs decrease the luteinizing hormone, reduce androgen production, and increase sex hormone-binding globulin, which binds androgens. Several new formulations of OCPs have been developed to decrease the side effects. This includes use of less androgenic progestins and lower doses of ethinyl estradiol. These consensus recommendations help the health provider to choose the right type of OCPs, which will alleviate the symptoms with minimal side effects. It also gives insight into the indications, contraindications, and concerns regarding its short, intermediate and long-term use.

Keywords: Acne, anovulatory cycles, endometrial carcinoma, hirsutism, oral contraceptive pill, polycystic ovarian syndrome.

Recommendations

- Women aged 40 years and older can generally use COCP but should follow up on a regular basis for CV risk, dyslipidemia, and thromboembolism. Grade B, Quality Low.
- COCP use may decrease BMD in adolescents, especially in those choosing very low dose formulations (<30 μg EE containing COCP). Grade B, Quality Low.
- Women with SVT can generally use COCP but may be associated with an increased risk of VTE without restriction. Grade C, Quality Very Low.
- Women with known dyslipidemias without other BMD can generally use COCP. Grade C, Quality Very Low.

Note: The grade of recommendation relates to the strength of evidence on which the recommendation is based. It does not reflect the clinical importance of the recommendation. A good practice point (GPP) is one recommended best practice based on the clinical experience of the guideline development group.
Drug interactions
Pharmacological interactions between OCPs and other compounds may be of two types: drugs may impair the effectiveness of OCPs or OCPs may interfere with the metabolism of other compounds. Interactions of the first kind are due to interference with the absorption, metabolism, or excretion of estrogen, and interactions of the second kind are due to competition for metabolic pathway.

Summary of evidence
a. Drugs may impair the efficacy of OCPs; Drugs such as anticonvulsants (phenobarbital, phenytoin, and carbamazepine) and rifampicin induce a cytochrome P450, thereby increasing the clearance of the OCPs. Other antibiotics such as ampicillin, metronidazole, quinolones, and tetracycline, which reduce the bacterial flora of the gastrointestinal tract and increase enterohelical recirculation, affect OC efficacy as a result of low bioavailability of EE. Ascorbic acid and paracetamol give rise to increased blood concentrations of EE due to competition for sulfation, which can increase the risk of its side effects.

b. OCPs may interfere with the metabolism of other drugs. OCPs reduce the clearance of benzodiazepines (chlordiazepoxide, alprazolam, diazepam) and nitrergem. The concentration of theophylline, prednisolone, caffeine, and cyclosporine is also reduced in OCP users. Thus, lower doses of these drugs may be effective in OCP users.

The clearance of temazepam, salicylic acid, paracetamol, morphine, and clobafic acid apparently is increased. OCP users may require larger doses of these drugs. Serum concentration of some of the antiepileptic drug (AEDs) such as lamotrigine may vary during the cycle when OCPs are being used. Lamotrigine level decreases almost by 50% when on the pill resulting in poor seizure control. During ‘pill-free’ interval, the level may increase causing lamotrigine toxicities such as dizziness, double vision, and lack of coordination; therefore, the dose should be decreased during the pill-free period.

c. For women taking antiretroviral drugs that have significant pharmacokinetic interactions with hormonal contraceptives, an alternative or additional effective contraceptive method to prevent unintended pregnancy is recommended.
Several ritonavir-boostered protease inhibitors (PIs) such as etravirine (EFV) and elvitegravir/ cobicistat (EVG/c) have drug interactions with COCP. These drugs decrease or increase the blood levels of EE, norethindrone, or norgestimate, which potentially decreases contraceptive efficacy or increases estrogen or progestin-related adverse effects (e.g., thrombembolism). EFV can decrease etonogestrel bioavailability and plasma progestin concentrations of COCP containing EE and norgestimate. Several PIs and EVG/c decrease OC estradiol levels. Several pharmacokinetic studies have shown that etravirine, rilpivirine, and nevirapine use did not significantly affect estradiol or progestin levels in women with HIV using COCP.

Recommendations

<table>
<thead>
<tr>
<th>Number</th>
<th>Recommendation</th>
<th>Grade</th>
<th>Quality</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.2.1</td>
<td>For a woman on AEDs that may compromise the efficacy of OCPs, high-dose pills containing at least 50 mcg of EE should be prescribed</td>
<td>B</td>
<td>Low</td>
</tr>
<tr>
<td>1.2.2</td>
<td>Dose of lamotrigine may be doubled to maintain steady therapeutic levels, but its side effects may occur during pill-free interval, and the patient should be advised to reduce the lamotrigine dosage during these days</td>
<td>D</td>
<td>Very Low</td>
</tr>
<tr>
<td>1.2.3</td>
<td>When on antibiotics, the OCPs user should use an additional method of contraception</td>
<td>D</td>
<td>Low</td>
</tr>
<tr>
<td>1.2.4</td>
<td>Lower doses of benzodiazepines (chlordiazepoxide, alprazolam, and diazepam) and nitrogemep theophylline, prednisolone, caffeine, and cyclosporine may be effective in OC users</td>
<td>D</td>
<td>Low</td>
</tr>
<tr>
<td>1.2.5</td>
<td>OCPs users may require larger doses of acetaminophen, aspirin, temazepam, paracetamol, morphone, and clofibric acid</td>
<td>D</td>
<td>Low</td>
</tr>
<tr>
<td>1.2.6</td>
<td>Those women on PIs should be advised to use the alternative methods of contraception</td>
<td>A</td>
<td>Low</td>
</tr>
</tbody>
</table>

Side effects
Summary of evidence
Side effects of oral contraceptives vary depending on the dose and type of hormone used in the OCP. Side effects, in general, include breast tenderness, bloating, nausea, weight gain, migraine, insulin resistance, increased blood sugars, dyslipidemia, VTE, cardiovascular disease (CVD), vaginal spotting, and abnormal bleeding. Mild increase in blood pressure might occur with some newer OCP formulations.

Specific types or dose of progestins, estrogens, or combinations of COCP cannot be recommended with inadequate evidence in adults and adolescents with PCOS, and the practice should follow general population guidelines. In smokers, the third generation OCPs may have deleterious effects on and may increase the risk of VTE as compared to other drugs.

In women who are at risk of CVD, older age, presence of diabetes, hypertension, and dyslipidemias, who are obese, and who smoke should be counseled about the increased risk of CVD. We also know that PCOS itself is associated with increased incidence and risk of obesity, hypertension, and dyslipidemia. As PCOS women are already at a higher risk of CVD, which can be exaggerated with the use of OCPs, close monitoring of OCP users though recommended but, what constitutes close monitoring is not clear. Pharmacovigilance is the key in OCP users.

Figure 2 describes the side effects related to the dose and drug in the OCP.

Figure 2: Side effects of oral contraceptive pills depending on dose and drug

<table>
<thead>
<tr>
<th>Excessive Progestroneactivity</th>
<th>Fatigue Muscle cramps Decreased Libido Atenor- rhoea Headache Vaginal dryness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excessive Estrogen Activity</td>
<td>GI disorders, Nausea and vomiting Edema Weight gain Breast tenderness OCPs Headache Premenstrual tension</td>
</tr>
<tr>
<td>Estrogen Deficiency</td>
<td>Hot flushes and sweating Irritability Neuropathological disorders Vaginal dystrophic changes Metrorrhagias Hypomenorrhea Decreased Libido</td>
</tr>
</tbody>
</table>

Counseling
General counseling
Summary of evidence
To achieve maximum benefits and safety for each individual patient, noncontraceptive use of COCP, detailed counseling regarding risks, benefits, and contraindications should be done. Counseling regarding the side effects such as weight gain, breakthrough bleeding, nausea, and breast tenderness is important. These women also need to be informed about the side effects such as decreased libido, melasma, and mood changes.

It is also important to discuss the interactions of OCPs with anticonvulsants, antibiotics, benzodiazepines, salicylic acid, paracetamol, morphine, and clofibric acid. Women who want to start OCPs should also be counseled regarding the contraindications mentioned earlier.

Counseling is important when acne is treated with COCP as acne reduction may take a few months for the results to be evident, and therefore, combining COCP with other medications for early treatment of acne may be appropriate.

Recommendations

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<th>Number</th>
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<th>Quality</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1.1</td>
<td>Counseling regarding risks, benefits, and contraindications should be done in detail before starting OCPs</td>
<td>A</td>
<td>High</td>
</tr>
<tr>
<td>2.1.2</td>
<td>Important to discuss the interactions of OCPs with other drugs</td>
<td>A</td>
<td>High</td>
</tr>
<tr>
<td>2.1.3</td>
<td>Counseling regarding the period required for anadrenocortic action of OCPs to be evident is important</td>
<td>A</td>
<td>Low</td>
</tr>
</tbody>
</table>

Investigations before initiation
Summary of evidence
Clinical examination and laboratory tests after proper history taking are essential before the initiation of OCPs.

1. Medical history
   - Age
   - Past and present medical conditions
   - Any drug use
   - Migraine
   - CVD risk factors (smoking, obesity, hypertension, diabetes, dyslipidemia, and coronary artery disease)
   - Thrombophilia (any known disorder of thrombophilia, personal or family history of previous VTE)
   - History about usage of tobacco (oral, snuff, etc.)
   - History of smoking
2. Physical examination
- Blood pressure measurement
- Body mass index (BMI)
- Waist circumference
- Pelvic examination
- Breast examination

3. Laboratory tests in the presence of cardiometabolic risk
- A fasting glucose level or in the presence of overweight or other diabetes risk factors

Contrary to previous practice, pelvic examinations and Pap smears are not required before prescribing COCP medications according to recommendations by the WHO, the American Congress of Obstetricians and Gynecologists, and Planned Parenthood. This makes it more feasible for dermatologists also to prescribe COCP medications without gynecology consultation. Thrombophilia screen is not recommended routinely before prescribing an OCP unless there is a family history of VTE in a first-degree relative.

**Recommendations**

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>2.2.1</td>
<td>Obtaining a thorough past medical/family history, calculating the BMI and measuring blood pressure, are important before prescribing a COCP</td>
<td>A</td>
<td>Moderate</td>
</tr>
<tr>
<td>2.2.2</td>
<td>Measuring blood sugar levels and OGTTs may not be recommended unless the women are overweight or have other diabetes risk factors</td>
<td>A</td>
<td>Low</td>
</tr>
<tr>
<td>2.2.3</td>
<td>Evaluation of lipids should be done only in overweight women with PCOS, but it may not apply to Asian Indians</td>
<td>A</td>
<td>Low</td>
</tr>
<tr>
<td>2.2.4</td>
<td>Pelvic examinations and Pap smears are not required before prescribing COCP medications</td>
<td>B</td>
<td>Moderate</td>
</tr>
<tr>
<td>2.2.5</td>
<td>Thrombophilia screen is recommended only in the presence of family history of VTE in a first-degree relative</td>
<td>B</td>
<td>Low</td>
</tr>
</tbody>
</table>

**Starting and stopping of therapy with oral contraceptive pills**

Summary of evidence
OCPPs are ideally started on any day between day 1 and 5 of the cycle, given for 21 days and stopped. This will be followed by withdrawal bleed. A new packet of pills is started counting the 1st day of withdrawal bleed as day 1. The patient should be called for follow-up after 3 months for the assessment of blood pressure and enquired for the presence of any other problems. Thereafter, annual visit is required for assessing side effects, checking blood pressure, and evaluating glucose intolerance and lipids.

Since peak bone mass development occurs during adolescence and young adulthood, use of low-dose estrogen COCP early in the teen years may affect the bone mass, although some studies refute this observation. As definitive conclusions are not yet available, the use of COCP for acne should be avoided within 2 years of menarche or in patients who are <14 years of age unless it is clinically warranted. If the use of COCP is clinically warranted in the age group <14 years, it is preferable to use drospirenone and drospirenone/levomefolate, norgestimate, and norethindrone. During treatment, circulating androgen in the age group <14 years, it is preferable to use drospirenone and drospirenone/levomefolate, norgestimate, and norethindrone.

Blood pressure measurement
Waist circumference
Pelvic examination

**Recommendations**

<table>
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</tr>
</thead>
<tbody>
<tr>
<td>2.3.1</td>
<td>Proper patient selection is necessary to minimize risks associated with COCP use</td>
<td>A</td>
<td>High</td>
</tr>
<tr>
<td>2.3.2</td>
<td>In adolescent girls, it is best to wait for 2 years after menarche to prevent reduction in peak bone mass</td>
<td>C</td>
<td>Very Low</td>
</tr>
<tr>
<td>2.3.3</td>
<td>It is necessary to make women aware of increased risk of cardiometabolic disorders when on OCPs</td>
<td>B</td>
<td>Low</td>
</tr>
<tr>
<td>2.3.4</td>
<td>Regular follow-up for the assessment of side effects, abnormal GTT or lipids is necessary only in high-risk PCOS females. The data on Asian Indians may differ</td>
<td>C</td>
<td>Very Low</td>
</tr>
<tr>
<td>2.3.5</td>
<td>OCPs need to be stopped in the presence of any side effects or if abnormal glucose tolerance or dyslipidemia is detected</td>
<td>A</td>
<td>High</td>
</tr>
</tbody>
</table>

**Long-term concerns**

**Summary of evidence**
Three issues that need to be addressed include cardiovascular risks, thrombosis with risk of embolism, and cancer risks.

**Cardiovascular thrombosis risk**
Smoking, hypertension, and diabetes are the risk factors for CVS risks. Controlling these factors reduces the long-term risk of MI and stroke. Thus, counseling regarding these modifiable factors is very important. There is also an increased risk of deep vein thrombosis (DVT) in women using COCP. This risk is 3.4/10,000 to 9/10,000 woman.years at 1 year of COCP use as compared to 1/10,000 woman.years in those who do not use COCP. This risk increases in the presence of obesity, smoking, alcohol consumption, and positive family or personal history. Perugia et al. conducted a meta-analysis of 14 different studies, in which OCP users had three times increased odds for DVT compared with nonusers.

Initially, it was published that drospirenone-containing OCPs had an increased risk of DVT, but a recent large prospective trial has shown that the risk of thrombosis is not higher with drospirenone-containing OCPs as compared to other OCP formulations. Obese women who use COCP are more likely to experience VTE than obese women who do not use COCP. Among women with very high BMI using COCP, evidence for weight gain when on COCP is inconsistent.

There is limited evidence and the results are inconsistent on the use of COCP among women with dyslipidemia. Certain studies have reported an increased risk for MI among COCP users with hypercholesterolemia compared to nonusers without hypercholesterolemia, one study suggested an increased risk for VTE and for stroke among COCP users with dyslipidemia compared to COCP users without dyslipidemia, but a recent trial of 100,000 women years in those who do not use COCP. This risk increases in the presence of obesity, smoking, alcohol consumption, and positive family or personal history. Perugia et al. conducted a meta-analysis of 14 different studies, in which COCP users had three times increased odds for VTE compared with nonusers.

Effect on bone mineral density
The evidence on fracture risk in COCP users is still inconsistent, although three recent studies show no effect. COCP use may decrease BMD in adolescents, especially in those choosing very low-dose formulations (COCP containing <30 mg EE containing COCP). It was also observed that COCP use has little to no effect on BMD in premenopausal women and may prevent bone loss in those who are perimenopausal. No impact of OCPs currently exists to caution their use with respect to bone health.

**Visual disturbances**
There is a cardiovascular background related to the expression of progesterone receptors in ocular tissues for visual disturbances in women receiving COCP. The incidence of ocular complications is estimated to be 1 in 230,000, including dry eye symptoms, corneal edema, lens opacities, and retinal neuroophthalmologic or vascular complications.

Certain studies have reported an increased incidence of glaucoma in women over 40 years when OCPs were used for 3 years or more especially in those women who have additional risk factors for glaucoma. Both the physicians prescribing OCPs and the patients receiving them need to be made aware that there may be an occult risk of open-angle glaucoma. At present, there is no high-quality evidence for the occurrence of glaucoma in peri and postmenopausal women. These women should therefore be counseled and reassured that the studies do not show any causative effects, but women who have used oral contraceptives for >5 years need to be monitored for glaucoma. A 2008 meta-analysis of 45 different studies reported a significant correlation between duration of COCP use and reduction in risk of ovarian cancer (P < 0.0001). There is also an increased risk of cervical cancer among users of COCP. It reported non-significant increased risk for glaucoma in women who use COCP, especially with an increased duration of COCP use. This increased risk, once again, was not related just to PCOS women but in general to OCP use. This risk reduced after discontinuation of COCP and disappeared after 10 years of non use. Although a later published systematic review of nine pooled studies found no significant increase in the risk of cervical cancer among ever-users of COCP, it reported non-significant increased risk of cervical cancer in women with >5 years of COCP use compared to never users.

The use of COCP is associated with reduced risk of occurrence of endometrial and ovarian cancer. A 2008 meta-analysis of 45 different studies reported a significant correlation between duration of COCP use and reduction in risk of ovarian cancer (P < 0.0001). Thus, healthcare professionals should be aware of the impacts of the OCP on CVD, BMD (in adolescents), venous thrombosis risk, hypertension, lipid profile, and breast (during or within 10 years of use) and liver cancer. Pharmacovigilance is the key and awareness should not impede therapy in genuinely indicated cases, especially for short duration. Often detailed history taking is needed.

**Recommendations**

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<tbody>
<tr>
<td>2.4.1</td>
<td>Smoking, hypertension, and diabetes are risk factors for CV risk. Controlling these factors reduces the long-term risk of MI and stroke</td>
<td>B</td>
<td>Low</td>
</tr>
<tr>
<td>2.4.2</td>
<td>Increased risk DVT in women using COCP warrants</td>
<td>B</td>
<td>Low</td>
</tr>
</tbody>
</table>
Follow-up on oral contraceptive pill therapy

**Summary of evidence**

No evidence exists whether a routine follow-up visit after initiating COCP improves correct or continued use and prevents side effects and/or long-term complications. After initiation of OCPS, it is best to review after 3 months. Monitoring blood pressure and BMI is important for women using COCP.

A systematic review identified five studies that examined the incidence of hypertension among women who began using a COCP versus those who started a non-hormonal method of contraception or a placebo. Few women developed hypertension after initiating COCP; and studies examining increase in blood pressure after COCP initiation found mixed results. At follow-up visit, it is important to ask for history of any side effects, breakthrough bleeding, and initiation of new medication.

Specific populations who might benefit from more frequent follow-up visits include adolescents and those with certain medical conditions.

### Recommendations

<table>
<thead>
<tr>
<th>Number</th>
<th>Recommendation</th>
<th>Grade</th>
<th>Quality</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.4.3</td>
<td>Obese women who use COCP are more likely to experience VTE than obese nonusers. COCP should be used with caution in obese PCOS</td>
<td>B</td>
<td>Low</td>
</tr>
<tr>
<td>2.4.4</td>
<td>Increased risk for MI among COCP users with hypercholesterolemia compared to nonusers. Use COCP with caution</td>
<td>C</td>
<td>Very Low</td>
</tr>
<tr>
<td>2.4.5</td>
<td>Mild dyslipidemia is not a contraindication to use OCP, but the women should be made aware of the fact that OCPs can change lipid profile and therefore should be monitored based on metabolic risk profiles</td>
<td>B</td>
<td>Low</td>
</tr>
<tr>
<td>2.4.6</td>
<td>Increased risk for VTE and stroke among COCP users with dyslipidemia compared to COCP users without dyslipidemia. Use COCP with caution</td>
<td>B</td>
<td>Low</td>
</tr>
<tr>
<td>2.4.7</td>
<td>Slightly increased risk of breast cancer was reported in women who take COCP. This requires stringent follow-up</td>
<td>B</td>
<td>Low</td>
</tr>
<tr>
<td>2.4.8</td>
<td>Higher risk of cervical cancer reported in women who use COCP, especially with an increased duration of COCP use. Therefore, it may be better to restrict the use of COCP to shorter duration</td>
<td>B</td>
<td>Low</td>
</tr>
<tr>
<td>2.4.9</td>
<td>Health-care professionals should be aware of impacts of the OCP on CVD, BMD (in adolescents), venous thrombosis risk, hypertension, lipid profile, and endometrial, breast (during or within 10 years of use), and liver cancer</td>
<td>A</td>
<td>Moderate</td>
</tr>
</tbody>
</table>

GPP: Good practice points

### Choice of Oral Contraceptive Pill for Noncontraceptive Indications

PCOS is associated with elevated androgen levels of ovarian origin. Use of COCP is a safe and effective option for women who suffer from acne. The antiandrogen effect of COCP is through the actions of estrogen, by stimulating the hepatic synthesis of SHBG, which binds androgens and decreases levels of free testosterone, with dehydroepiandrosterone sulfate. Estrogen also inhibits 5-alpha reductase, which prevents the conversion of testosterone to the more potent dihydrotestosterone. Estrogen through its negative feedback action on pituitary reduces luteinizing hormone (LH), consequently reducing the synthesis of ovarian and adrenal androgens. Progestins may also contribute to the antiandrogenic properties of COCP by the reduction of gonadotropin, releasing hormone (GnRH) pulsatility and consequently LH production.

COCP with third generation progesterins (e.g., norgestimate or desogestrel) or later generations (e.g., fourth or fifth generation progesterin containing OCP formulations) are preferred because they have lower androgenic activity as compared to first and second-generation COCP. Currently, four COCP are approved by the Food and Drug Administration (FDA) for the treatment of acne. They are EE/norgestimate, EE/norethindrone acetate/ferrous fumarate, EE/drospirenone, and EE/drospirenone/levomefolate.

Several RCTs have assessed the efficacy of COCP in the management of acne. A 2012 Cochrane meta-analysis assessed the effect of OCPs on acne in women and included 31 trials with a total of 12,579 women. Nine trials compared a COCP to placebo and the former reduced acne in almost all women. The progestins included in these nine trials were levonorgestrel, norethindrone acetate, norgestimate, drospirenone, dienogest, cyproterone acetate or chlormadinone acetate. Seventeen trials compared two different combinations of COCP but found no statistical difference between the two. Only one small study compared a COCP to an oral antibiotic, which found no significant difference. A nonsystematic narrative review based on a literature search of the PubMed database showed high efficacy of CPA 2 mg/EE 35 mg in the treatment of severe acne and hirsutism.

An Indian study by Bhattacharya et al. in the Indian population concluded that combination of EE and drospirenone (DSRP) is a good alternative to combination of EE and cyproterone acetate and has similar efficacy without affecting the insulin resistance.

### Recommendations

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<tbody>
<tr>
<td>3.2.1</td>
<td>OCPs may be prescribed in adolescents with hirsutism accompanied by menstrual irregularities</td>
<td>B</td>
<td>Low</td>
</tr>
</tbody>
</table>

For hirsutism

**Summary of evidence**

Hirsutism is a clinical sign and is not a disease by itself. Its presence does not necessarily require treatment. However, as hirsutism can have great effect on the psychological well being of women, treatment becomes necessary. Apart from plucking, shaving, waxing, electrolysis, and laser, OCPs are the first line treatment for hirsutism, particularly in those women desiring contraception. Antiandrogens can be used for the treatment of hirsutism, but this can be associated with irregular uterine bleeding. When antiandrogens are combined with EE it not only regularizes the menstrual cycle but also provides endometrial protection and improves hirsutism and/or acne by reducing the production of ovarian androgens.

### Recommendations

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<tbody>
<tr>
<td>3.1.1</td>
<td>Estrogen containing COCP are effective and recommended in the treatment of inflammatory acne in females</td>
<td>A</td>
<td>High</td>
</tr>
<tr>
<td>3.1.2</td>
<td>Both EE/DROSPP and EE/cyproterone acetate combinations improve hyperandrogenic parameters significantly without affecting the insulin resistance adversely in Indian women with PCOS.</td>
<td>A</td>
<td>High</td>
</tr>
</tbody>
</table>

Medical treatment for hirsutism is never curative and therefore should be administered for long term. The PCOS adolescent and women must be counseled that the effect of medical treatment is evident only after several months and therefore requires monitoring by an expert while on treatment. When OCPs and placebos were compared in two RCTs, OCPs showed a definite benefit with reduction in the hirsutism scores, although the evidence supporting this recommendation is of very low quality. When COCP containing low-dose antiandrogen (CPA 2 mg) were compared with finasteride an antiandrogen, both had similar effects on the hirsutism score at the end of 9 months.

Spiroirnotalone 100 mg was more effective than COCP containing cyproterone acetate (2 mg/day) in combination with EE (35 mg/day). Moreover, cyproterone acetate may be associated with adrenal insufficiency and loss of libido.

The use of OCPs containing recent generation low androgenicity progestins such as desogestrel and gestodene and androgen receptor antagonists such as CPA and drospirenone (DSP) may confer a 50-100% increased risk of VTE compared with OCs containing the second generation progestin levonorgestrel. It is also the best to use the lowest effective dose of EE (20 mg/day) to reduce the complications. However, one must remember that PCOS itself may represent an additional independent risk factor for VTE.

Most general population guidelines do not recommend the use of OCPs with EE and cyproterone acetate (CPA) as the first-line treatment in adults and adolescents with PCOS. However, in the Indian context, OCPS containing an antiandrogen, such as cyproterone acetate, or the spironolactone derivative drospirenone rather than COCP containing other progestins may be used for the treatment of hirsutism.

The use of OCPs results in a subjective improvement of symptoms in about 60-100% of PCOS women. An Indian study by Bobde et al. compared COCP containing EE 20 mg/day and levonorgestrel 1 mg/day with EE/drosperone 3 mg in a combination with COCP with metformin and metformin alone. They found maximum improvement in hirsutism in the combination group followed by OCP and least in the metformin group. Since the sample size was very small, the quality of evidence is of very low quality. This was also demonstrated in two other publications.

### Recommendations

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<td>3.2.1</td>
<td>OCPs may be prescribed in adolescents with hirsutism accompanied by menstrual irregularities</td>
<td>B</td>
<td>Low</td>
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</table>
**For menstrual irregularity and menorrhagia**

**Summary of evidence**

PCOS is associated with menstrual irregularity and menorrhagia due to anovulation both in the adolescent girls and in women in their reproductive age. In the adolescent, a firm diagnosis of PCOS as a cause of menstrual irregularity and menorrhagia can be done only after 2 years of menarche. OCPS with antiandrogenic properties can control menstrual irregularities and menorrhagia. OCPS with first and second generation progestins are preferred in acute menorrhagia for a few cycles. Once bleeding is relatively controlled, one can use the third and fourth generation OCPS.

Rathod et al. reported menstrual problems in 84.88% of adolescent population who had either menstrual irregularity, menorrhagia, or dysmenorrhea. As menorrhagia may be an important clinical manifestation in inherited bleeding disorders, it needs to be evaluated before embarking on the use of COCP.

ESHRE/ASRM-sponsored PCOS consensus group recommendations and The Endocrine Society's clinical practice guidelines[138] suggest OCPS as the first-line management for amelioration of clinical and biochemical androgen excess and menstrual irregularity. There is no difference in the efficacy with the use of various combination pills.

**Recommendations**

**Number** | **Recommendation** | **Grade** | **Quality**
--- | --- | --- | ---
3.2.2 | For most women, one OCP over another as initial therapy is not suggested. All OCPS appear to be equally effective for hirsutism, and the risk of side effects is low | B | Low
3.2.3 | The progestins to be preferred in these patients are the antiandrogen progestins such as cyproterone acetate and drospirenone | B | Low
3.2.4 | Preferable, to use an OC containing a progestin with low-androgenic activity (e.g., norethindrone acetate, ethinylodiol diacetate, desogestrel, gestodene, norgestimate) | B | Low
3.2.5 | If hirsutism does not respond to COCPs despite 6 months of monotherapy with an OCP, antiandrogens can then be added | B | Low
3.2.6 | COCPs containing EE and antiandrogen when combined with metformin give better results than COCP alone | A | Low
3.2.7 | Epilatory measures need to be used in conjunction with OC/Ps | B | Moderate

**Oral contraceptive pills for long-term therapy in polycystic ovarian syndrome**

**Summary of evidence**

The two main concerns when COCPs were used in PCOS women are decrease in bone density and fear of VTE. A positive linear relationship was also found between duration of OC use and risk of hypertension. The risk of hypertension increased by 13% for every 5 year increment in OC use. The estrogen content also has a dose dependent effect on lipid profiles. Moreover, OCs use is also linked to cervical, breast, and liver cancers. Long-term use of OCs has also been associated with increased risk of glaucosa, especially when used for more than 3 years.

**Recommendations**

**Number** | **Recommendation** | **Grade** | **Quality**
--- | --- | --- | ---
3.5.1 | Ovarian reserve markers are lower in women using oral contraceptives for long-term contraception. The AMH and AFC should ideally be tested only 3.6 months after stopping the pill. There is also a reduction of the endometrial thickness, and the pinopod expression is delayed in women using OC as compared to normally cycling women or those using clomiphene citrate (CC). When given for a minimum number of days, and if controlled ovarian stimulation (COS) is started after a washout period, OCP pretreatment might not have a negative effect on endometrial receptivity. The effect of OCP pretreatment on assisted reproductive technique (ART) outcome depends on the type and protocol of OCP used and washout period before initiation of ovarian stimulation. No differences were found in ongoing pregnancy rate in GnRH agonist long protocol when pretreated with OCP. Although initial publications did not show any negative impact on the ART outcome in GnRH antagonist cycles, recent publications and meta analyses suggest the contrary. There were two studies which showed a beneficial effect of OCPS on the ART outcome in the GnRH antagonist cycle, but later studies did not show any beneficial effect of pretreatment with OCPS in the ART cycles using GnRH antagonist.

| **Table 4: Actions of combined oral contraceptives in PCOS** |
| --- | --- |
| **Estrogen Components (ethinyl-estradiol)** | **Progestin Component** |
| **Suppression of FSH** | **Decreases the frequency of GnRH pulses** |
| **Stabilization of endometrium** | **Suppression of LH** |
| **Potentiation of progestin action** | **Inhibition of LH surge** |
| **Suppression of dominant follicle formation** | **Unreceptive endometrium** |
| **Increase in sex hormones binding globulin** | **Hostile Cervical mucus** |
| **Decrease in free androgen** | **Decrease in ovarian and estrogen secretion** |
| **Possibly androgen-blocking effects** | **Increases SHBG concentration** |

**During infertility management**

**Summary of evidence**

Actions of COCP on reproductive function in PCOS women are shown in Table 4.
Use of oral contraceptive pills in lean and obese women

Summary of evidence

The prevalence of obesity is higher in PCOS women with increased visceral adiposity. There is insufficient evidence to support a causal relationship between use of OCPs and weight gain. In lean adolescents and adults, OCPs treatment is associated with an increase in total and abdominal fat mass, despite significant decreases in serum androgens, suggesting other underlying mechanisms for potential increase in fat mass. On the contrary, no change in body fat distribution was observed in obese PCOS women after 12 months OCP use. In the OWL-PCOS study, treatment of overweight/obese PCOS women with OCPs for 4 months resulted in a significant decrease in visceral fat distribution.

It is also reported that PCOS women showed 96% higher circulating C-reactive protein (CRP) levels as compared to controls. In lean PCOS, slight increase or no change in CRP levels was seen after 6 months of OCP treatment. No change was noted in obese PCOS.

The effects of OCPs on adiponectin levels (which has insulin-sensitizing, antiatherogenic, and anti-inflammatory properties) in women with PCOS is still unclear. Some studies report no change in adiponectin levels using a third-generation OCP for 6.12 months, while others report an increase in serum adiponectin levels after 6 months of treatment in obese women. Increase in inflammatory gene expression in subcutaneous adipose tissue biopsies was seen in adolescents, after treatment with OCPs. It is also important to consider the impact of OCPs on adipose tissue distribution and function in lean and obese PCOS women. The evidence is very low as all studies included small numbers of PCOS women. OCPs, when used in obese PCOS women, have increased negative metabolic effects on triglyceride and total cholesterol levels and also aggravate insulin resistance. The use of OCPs in obese women especially with BMI of >30 kg/m2 will considerably increase the risk of CVD. Therefore, all obese women on OCPs should be carefully monitored. OCPs should not be used in obese women with BMI >30 kg/m2 associated with other risk factors for VTE.

Recommendations

<table>
<thead>
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<th>Quality</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.5.3</td>
<td>OCPs cyclical pretreatment before ART could improve pregnancy outcome due to reduction of LH, hyperandrogenism, and antral follicle excess</td>
<td>B</td>
<td>Low</td>
</tr>
<tr>
<td>3.5.4</td>
<td>Pretreatment with OCPs before starting the GnRH agonist cycle Permits normalization of the LH:FSH ratio Reduces ovarian androgen concentrations Attenuates the initial flare response to the GnRH agonist No increase in live birth rate in long agonist protocol and in short agonist protocol</td>
<td>B</td>
<td>Low</td>
</tr>
<tr>
<td>3.5.5</td>
<td>COCP pretreatment in antagonist protocols was associated with a lower rate of LBR or ongoing pregnancy than no pretreatment and this is related to the pill-free interval</td>
<td>A</td>
<td>Low</td>
</tr>
<tr>
<td>3.5.6</td>
<td>COCP pretreatment in antagonist protocols is also associated with higher gonadotropin usage and duration of stimulation</td>
<td>A</td>
<td>Low</td>
</tr>
<tr>
<td>3.5.7</td>
<td>Benefits of synchronization of follicular cohort and cycle scheduling must be weighed against the drawbacks with pretreatment OCP in GnRH antagonist</td>
<td>B</td>
<td>Low</td>
</tr>
<tr>
<td>3.5.8</td>
<td>COCP in FET cycles may reduce the risk of pregnancy loss</td>
<td>B</td>
<td>Low</td>
</tr>
<tr>
<td>3.5.9</td>
<td>COCP reduce endometriosis-associated pain, dyspareunia, and dysmenorrhea</td>
<td>B</td>
<td>Low</td>
</tr>
</tbody>
</table>

Depot medroxyprogesterone and etonogestrel containing implant should not be used in women with PCOS as they are associated with weight gain, insulin resistance, and worsening metabolic profile. The former is also associated with decreased BMD.

Recommendations

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<th>Grade</th>
<th>Quality</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.7.1</td>
<td>COCP offer contraception to those PCOS women who do not want to conceive</td>
<td>A</td>
<td>High</td>
</tr>
<tr>
<td>3.7.2</td>
<td>Progestin-only contraceptive pill or levonorgestrel-containing intrauterine system can be used in PCOS women where the use of estrogen is contraindicated or when androgen excess does not exist</td>
<td>B</td>
<td>Low</td>
</tr>
<tr>
<td>3.7.3</td>
<td>Depot medroxyprogesterone and etonogestrel-containing implant should not be used in women with PCOS</td>
<td>B</td>
<td>Low</td>
</tr>
</tbody>
</table>

For prevention of Cancer in Polycystic Ovarian Syndrome

Summary of evidence

Most PCOS women have anovulatory cycles with disruption of normal reproductive physiology, which increases the risk of the development of cancer of the endometrium, ovary, and breast, either directly or mediated by its associated reproductive metabolic alterations. Women with PCOS have a 2.7-fold (95% CI, 1.0-7.3) increased risk for endometrial cancer, which is well differentiated and has a good prognosis. There are limited data on increased risk of ovarian and breast cancer in PCOS women. Cancer risk with PCOS is difficult to separate from other recognized risk factors such as nulliparity, infertility and its treatment, anovulation, and obesity.

Use of OCPs in PCOS women showed a protective trend against endometrial cancer. In endometrial cancer, the estimated relative risk decrease is ~ 50% with 4 years of use, ~ 70% with 12 years of use, and decreasing with further use. After ceasing oral contraception, the risk begins to rise from its reduced levels, but it is still ~ 50% even after >20 years after its last use. Relative risk of ovarian cancer decreases by ~ 20% for each 5 years of OCPs use. Risk is ~ 50% for 15 years of use and decreasing with further use. The protective effect gained declines as time passes from its last use, but a significant effect remains for a long time after cessation of OCP use. OCPs do not protect from mucinous types of ovarian tumors.

Linear coefficient exists for increased protective effects of OCPs, and duration of its use and is independent of type of formulation.

Recommendations

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<th>Quality</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.8.1</td>
<td>OCPs have protective beneficial effect against endometrial cancer</td>
<td>B</td>
<td>Moderate</td>
</tr>
<tr>
<td>3.8.2</td>
<td>Protective effect of OCPs on ovarian cancer may be there</td>
<td>C</td>
<td>Very Low</td>
</tr>
</tbody>
</table>

Use of other drugs with oral contraceptive pills in Polycystic Ovarian Syndrome

Summary of evidence

Anti-androgens

In PCOS women with moderate or severe hirsutism and acne not responding to COCP, one can add anti-androgens (androgen receptor blockers and 5 alpha-reductase inhibitors).

Several RCTs have shown that flutamide 250 mg/day, finasteride 5 mg/day, or spironolactone 100 mg/day are effective in reducing the signs of hyperandrogenemia not responding to COCP of third and fourth generations.

In three double-blind studies, combination of an OC containing 2 mg of cyproterone acetate and either spironolactone 100 mg or finasteride 5 mg had better results in the treatment of hirsutism than OC alone.

At times, in PCOS women especially adolescent population, when antiandrogens such as cyproterone acetate and spironolactone alone are given, there may be menstrual disturbances or even amenorrhea because of their strong progestin effects. This is the group which will benefit with combination of COCP and antiandrogens. Antiandrogens can also be combined with COCP when the women need contraception.

Insulin sensitizers

Insulin sensitizers improve insulin resistance and menstrual dysfunction and may also decrease serum androgen levels. The main insulin sensitizer is metformin and others include pioglitazone and saroglitazar. However, data on these agents are still emerging but may be valuable adjuncts in individualized situations.

When metformin is used alone, it is not effective in reducing the signs and symptoms of hyperandrogenemia compared to COCP and antiandrogens. While the literature on use of metformin plus OCP versus OCP alone is limited, metformin may lower risk and offset OCP exacerbated risk factors. Use of OCP plus flutamide and/or metformin reduced abnormal adipocytokine levels and adiposity, which are aggravated in women using OCPs alone increasing the risk of metabolic syndrome. Hoeger et al compared OCP plus placebo versus OCP plus metformin and found beneficial effect on waist circumference and higher high density lipoprotein cholesterol when OCPs were used with metformin. There was another study, which looked at the levels of adhesion molecules, vascular cell adhesion molecule-1 and intercellular adhesion molecule-1, cyproterone containing OCPs with or
3.9.4 Glucocorticoids and GnRH analogs should not be used regularly with OCPs for the treatment of hyperandrogenemia

3.9.5 Glucocorticoids use should be restricted only to women who have NCCAH

Conclusions on Use of Oral Contraceptive Pills in Polycystic Ovarian Syndrome

In PCOS women who do not desire fertility, OCPs are the first-line treatment to improve clinical symptoms of androgen excess such as acne and hirsutism and also help in regulating the menstrual cycles and protecting the endometrium against effects of unopposed estrogen action. Estrogen content in the OCP increases SHBG levels, thus decreasing the free circulating androgens. The progestin component of OCP suppresses the secretion of LH and decreases ovarian androgen production. It also competes for 5 alpha-reductase and the androgen receptor, with concomitant decrease in androgen action. OCPs may also reduce adrenal production of androgens. Menstrual irregularity gets corrected immediately, but acne and hirsutism may take a minimum of 6 months for its effects to be seen.

Low-dose COCP containing neutral or antiandrogenic progestins may be the OCPs of choice in the treatment of PCOS. Despite the potential adverse cardiovascular and metabolic effects of OCPs, the current evidence suggests that the benefits outweigh the risks for its use in most PCOS women. Use of OCPs in PCOS women should be individualized after risk stratification and not used if any contraindications exist.

Acknowledgments

We acknowledge the guidance provided by the members of the working group in formulating the ‘Consensus Statement on the Use of OCPs in PCOS’. We also acknowledge the immense personal assistance by Prof. Helena Teede, President of The Androgen Excess Syndrome

Properties of OCPs

- Estrogen content in OCP increases SHBG levels, thus decreasing the free circulating androgens.
- The progestin component of OCP suppresses the secretion of LH and decreases ovarian androgen production.
- It also competes for 5 alpha-reductase and the androgen receptor, with concomitant decrease in androgen action.
- Menstrual irregularity gets corrected immediately.
- Acne and hirsutism may take a minimum of 6 months for its effects to be seen.

OCPs Choice

- Low-dose COCP containing neutral or antiandrogenic progestins may be the OCPs of choice in the treatment of PCOS.
- Despite potential adverse effects, the benefits outweigh the risks for its use in most PCOS women.

OCPs Individualization

- Use of OCPs in PCOS women should be individualized after risk stratification and not used if any contraindications exist.

References

- The immense personal assistance by Prof. Helena Teede, President of The Androgen Excess Syndrome.
- The Androgen Excess and Polycystic Ovary Syndrome Society, who guided us in the final preparation of this statement.

For further details on the Consensus Statement kindly go on the below link

http://www.pcosindia.org/files/Consensensus%20statement%20on%20use%20of%20OCP%20in%20PCOS%20-%20JHRS.pdf