

LIFE STYLE MODIFICATION IN POLYCYSTIC OVARY SYNDROME (PCOS) – A REVIEW

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ABSTRACT

Polycystic ovary syndrome (PCOS) is a heterogeneous collection of signs and symptoms that gathered together form a spectrum of disorder with a mild to severe disturbance of reproductive, endocrine and metabolic function. It is being estimated prevalence in the general population is about 50%. The key feature of PCOS includes menstrual cycle disturbance, hyperandrogenism and obesity. Ovarian function and fertility is adversely affected by an individual being overweight, elevated serum concentration of LH. The clinical management of a women with PCOS should be focus on weight reduction if BMI > 30 kg/ m² as it worsens both symptomatology and the endocrine profile. Hence, *pathyahara* (Ayurvedic dietary advice) and *vyayama* (practice of *yogasana*) are essential component in weight reduction, regularize menstrual cycle and can overcome insulin resistance. Improving diet and exercise program by making lifestyle changes may reduce risk for developing chronic diseases associated with PCOS such as diabetes, heart disease and endometrial cancer. Modifying additional lifestyle factors include alcohol consumption, psychosocial stress factors and smoking is also crucial in long-term treatment of PCOS.

Key words: Diet, exercise, *Yogasana*, *pathyahara*

INTRODUCTION

Polycystic ovarian syndrome is a heterogeneous condition that presents with

ovarian dysfunction, endocrine and metabolic disturbances. Many women with PCOS have

hypertension, impaired glucose tolerance, lipid abnormalities, obesity, or any combination of these. The diagnosis can be established when 2 of the following criteria are present: oligo-ovulation/ anovulation, clinical or laboratory hyperandrogenism, and polycystic ovaries on ultrasound (enlarged ovary, echodense stroma, > 10 "cysts" 2 -10 mm). Most of the criteria used for the diagnosis are degree of hirsutism, level of circulating androgen, extent of menstrual irregularity and ovarian volume and morphology. Possible late sequelae of PCOS are diabetes mellitus, dyslipidaemia, hypertension, cardiovascular disease, endometrial carcinoma, breast cancer.¹

Women with PCOS have a greater truncal abdominal fat distribution by a higher waist:hip ratio. And an increased risk of metabolic problems. Obesity worsens both symptomatology and the endocrine profile, so obese women BMI >30 kg/m² should therefore

be encouraged to reduce weight. As PCOS is rapidly (advancing) hence the research has been done in various aspects like prevalence, etiology, diagnosis and management based on research it has been evaluated as life style contributes more than 50% in manifestation.²

A healthier lifestyle is considered the first step to managing PCOS. Lifestyle intervention comprises dietary, exercise and behavioral changes that reduce the risk of diabetes, metabolic syndrome and have some initial success in improving fertility outcomes in PCOS.

LIFE STYLE MODIFICATION

Here an effort has been made on life style modification by regular practice of yogasana, following *Ayurvedic* diet and behavioral changes .These modification can categorize in following 1) Dietetic approach 2)Yogic approach 3) Behavioral modification

Table 1: Showing lifestyle modification through diet, exercise and behavior pattern (added this heading)

Time Schedule	Life style modification in diet, exercise and behavior
6 am	<i>Krishna Tila kalka</i> with jaggery (15 gm)
7 am	<i>Yogaabhyasa</i> (1 hr)
8.30 am	<i>Kulatta yusha</i> (200 ml)
11.00 am	Papaya fruit (150 gm)
1.00pm	<i>Chapathi</i> (2) + Boiled seasonal vegetables (200gms)
4.00pm	<i>Pranayama</i> (30 min)
5.00pm	<i>Madhudaka</i> (100ml)/ lemon honey juice (100ml)/ <i>Triphala kashaya</i> (25ml)
7.30 pm	Cabbage salad, pepper, <i>saindhava lavana</i> , lemon(150gms) + <i>Takra</i> (200ml)
Note : Avoid alcohol and cigarette smoking	

Dietetic approach

- Use of *Krishna Tila Kalka* (Sesamum indicum) mixed with jaggery of 15gm in the morning for 1 month to induce menstruation by contracting the uterus in case of amenorrhoea for long time.^{3,4}
- Use *Kulatta Yusha* (Dolichos biflorus) is *Medokapha nashaka*, *Kashaya Rasa*, *UshnaVirya* hence it is useful in reducing body weight, acts as *Arthava Janaka*.⁵ As *Medha Dhatu* and *Kapha Dosha* are root cause of obesity, it contributes weight loss due to presence of low carbohydrate, more protein and fibre. It boosts hemoglobin by its iron content hence useful in irregular menstruation.
- A unripe papaya helps in the contraction of the muscle fibres of the uterus and thus useful in securing proper menstrual flow.⁶
- *Godhuma Roti* : whole wheat *Roti* provides protection against obesity as it contain starch, gluten provides heat and energy; phosphates, roughages, vitamin E, vitamin B helps to build and repair muscular tissues.⁷
- Fresh juice of a lime mixed in a glassful of water and sweetened with honey should be taken every morning on empty stomach to reduce weight.⁸
- *Triphala Kashaya* with honey is very effective in reducing obesity.^{9,10}
- *Madhudaka* contain 22 amino acid and easily digestible sugar like sucrose, fructose, glucose enters directly into the blood stream because of its dextrin content provides instantaneous energy and reduces the body fat.^{11,12}
- *Takra* possesses *Kashaya rasa* acts on *Artava Vaha Srotas* as it being *Sroto Vishodaka*, reduces body weight, diabetes

mellitus or insulin resistance successively regulates menses.¹³

- *Bahupatri* (cabbage) *salad* : it consists of valuable content called tartaric acid which inhibits the conversion of sugar and other carbohydrates into fat hence it is a simplest way to stay slim, a painless way of dieting.¹⁴

Yogic approach –

Yoga helps to maintain homeostasis, where internal environment of the body remains relatively constant. This homeostasis is disturbed by either stress, tension etc resulting in various psychosomatic disorder like diabetes mellitus, obesity, PCOS etc. The stressors stimulate hypothalamus which in turn stimulates sympathetic nervous system and adrenal medulla leading to disharmony in the form of diseases.¹⁵

Regular practice of *Pavanamuktasana*, *Bhujangasana*, *Dhanurasana*, *Halasana*, *Naukasana*, *Paschimothasana*, *Ardhamatsendrasana*, *Kapalabhati kriya*, each 2-3 times a day for 1 hour.

- *Pavana mukthasana* cures disorders of uterus and reduces fat around the abdomen.¹⁶
- *Bhujangasana*, *Dhanurasana*, *Halasana*, *Naukasana* gives good massage to the abdomen and stimulates blood circulation in the uterus provides strength to ovaries. Hence it is specially beneficial to women as it alleviates menstrual disorder and improves the reproductive system by reducing fat around the abdomen.¹⁷
- *Paschimothasana*, *Ardhamatsendrasana* reduces fat around the abdomen tone up the

abdominal organs provide good shape to the body.¹⁸

Mode of action of Asana:

Asanas results in contraction and relaxation of muscles leads to expenditure of ATP resulting in burning of calories this helps in reducing body fat. Muscle contraction increase the insulin action on glucose uptake, this helps to overcome insulin resistance.¹² During relaxation, intra abdominal pressure increase about 10 -80 mm hg, thus it improves blood circulation to internal organs i.e contraction and relaxation of uterine muscles improves circulation thereby normalizes its function.¹⁹

Management of psycho-social stress through pranayama

Practice *Nadishodhana pranayama*, *Bhramari pranayama*, *Dhyana* regularly to conquer emotional disturbances for 30 min a day to keep mind calm.

- *Nadishodhana pranayama* activates brain cells purified along with the blood circulation, relaxes nerves, stabilizes mind thus it provide calmness and tranquility.²⁰
- *Bhramari* removes anxiety, anger and frustration and relieves cerebral tension.²¹
- *Dhyana* promotes deep relaxation of the body and mind, reduces metabolic rate by slowing breath.²²

Mode of action of Pranayama:

Pranayama Practice involves three steps they are *Puraka*, *Kumbaka* and *Rechaka*. During *Puraka* heart rate is slow and receives more rest and blood into the cavities of heart, at *Rechaka* fresh air does not enter the circulation leading to lowered oxygen tension in the blood

thus some dormant capillaries lying in collapsed state, open up. The cerebral anoxia leads to cerebral vasodilatation and circulation improves. On *Rechaka* slow expiration involves consciousness with the help of cerebral cortex of brain, these inhibitory impulses from cortex overflow the adjoining areas of the hypothalamus concerned with emotions.

Thus by practice of *Pranayama* and *Dhyana* improves attention and concentration of mind followed by an initiation of relaxed emotional state supports reduction in the cortisol level.²³

Modified behavioral approach-

Modifying additional lifestyle factors include alcohol consumption, psychosocial stress factors and smoking is also crucial in long-term treatment of PCOS.

Side effects of cigerrate smoke:

Cigarette smoke contains several toxic chemical compounds known to be mutagens and carcinogens such as cotinine and benzopyrene. Smoking may also introduce perturbations in menstrual cycles including promoting shorter or irregular cycles as well as decreasing ovarian reserve, as reflected by lower antral follicle count (AFC) and lower serum anti-Mullerian hormone (AMH) levels. The particulate matter retained on the cigarette filter has been found to contain polyphenols, while the gas phase smoke has been found to contain high concentrations of nitric oxide (NO). These two phases contain oxidizing chemicals, which exposes the lungs as well as the entire organism to oxidative stresses. Smokers have also been found to have lower circulating concentrations of antioxidants, which may exacerbate rising ROS (reactive

oxygen species) levels derived from cigarette smoke. Alcohol has also been implicated as the source of ROS.²⁴

Side effects of alcohol consumption:

Alcohol markedly disrupts normal menstrual cycling in female humans and rats. Alcoholic women are known to have a variety of menstrual and reproductive disorders, from irregular menstrual cycles to complete cessation of menses, absence of ovulation (anovulation), and infertility.²⁵

CONCLUSION

Gradually avoid use of alcohol and cigerrate as it produces adverse effect on menstruation even it causes complete cessation of it. Here psychosocial factors can be tamed by proper and regular practice of *Pranayama*. Following *Pathyahara* (Ayurvedic dietary advice) and *Vyayama* (practice of *Yogasana*) are essential component in weight reduction, regularize menstrual cycle, can overcome insulin resistance and reduces risk of developing chronic diseases associated with PCOS such as diabetes, heart disease and endometrial cancer

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