

Role of Food and Exercise in Polycystic Ovarian Syndrome

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Abstract:- Polycystic ovarian syndrome is a common hormonal disorder affecting an increasing number of women between puberty and menopause. It is called a syndrome because it refers to a number of symptoms experienced at the same time. It is also known as polycystic ovary diseases. Polycystic Ovary Syndrome (PCOS) is a common endocrine disorder as it is prevalent in 5-10% of premenopausal women (Dunaif, 2013). The clinical symptoms of hyperandrogenism are alopecia (male-patterned baldness), hirsutism (abnormal facial and body hair in women), and acne. Chronic anovulation varies from oligomenorrhea (infrequent menstruation), amenorrhea (an absence of menstruation), and dysfunctional uterine bleeding.

In this paper we will discuss the role of food and exercise in PCOS.

Keywords:- PCOS, hirsutism, oligomenorrhea, hyperandrogenism.

I. INTRODUCTION

Polycystic ovarian syndrome. First described in 1935 by the American gynaecologists Irving F Stein and Michael L Leventhal. It is a heterogenous, multisystem endocrinopathy in women of reproductive age. Underlying cause is unknown. Genetic basis being suspected (Autosomal dominant- first degree male symptom, twin studies, dysregulation of CYP 11 a gene, upregulation of other enzymes in androgen synthesis pathway, insulin receptor gene on chromosome 19p13.2, decreased sex hormone binding globulin), family history of PCOS, high maternal androgen, onset of type 1 diabetes mellitus before menarche, insulin resistance, obesity, drugs e.g. valproate. Chronic anovulation resulting in infertility, irregular bleeding, obesity, hirsutism, hypoplasia of breast. Most common cause of hirsutism in women, upto 25% of normal female have polycystic ovaries. 50% of PCOS patient are obese and upto 75% are insulin resistance.

II. PRESENTATION

Diagnosis of PCOS (Rotterdam's criteria) Any of two out of three are present, diagnosis of PCOS is made.

- Amenorrhoea/Oligomenorrhoea due to anovulation.
- Hypoandrogenemia (70-150 mg/ml)
- USG Findings of PCOS: a.) > 12 follicles or cyst in ovary
b.) each follicle < 10mm (2-9 mm) c.) volume of ovary > 10cc

Insulin resistance is commonly seen in women with PCOS. In 1980 a study conducted by Burghen et al.

concluded that PCOS is associated with hyperinsulinemia. Many studies have been conducted to explore the connection between insulin resistance and PCOS. A significant positive correlation between increased levels of androgens and insulin resistance is seen, which may suggest that insulin resistance plays an etiological role in PCOS. Hyperthecosis, which is enlargement of the ovary and the presence of luteinized cells in the ovary that produce androgens, is found to be more extensive in PCOS women that have insulin resistance. This indicates that insulin has an effect on ovarian morphology and function.

Obese PCOS women have a 30% higher rate of insulin resistance than lean PCOS women. Isolated adipocyte cells from PCOS women have shown a significant decrease in insulin sensitivity. It is clear that obesity plays a factor in insulin resistance, and it is hypothesized that obesity combined with genetic defects in insulin produce glucose intolerance in PCOS women.

Long-term complications of the disorder are increased risks of developing type II diabetes, endometrial cancer, cardiovascular disease, and impaired glucose tolerance (Dunaif, 2013). Lifestyle changes seem to be an effective way to manage the symptoms and potential complications of PCOS.

III. HEALTHY DIETS, YOGA ASANAS AND EXERCISES FOR PCOD

• First- Food:

A women with PCOD are often found to have high insulin level. Diet with high refined carbohydrates like maida preparation, starchy, sugary food can cause insulin resistance. Therefore avoid white bread, biscuits, pastas, refined products, artificially coloured, flavoured vitaminsed products, readymade packets open the packet and eat , open the bottle and drink, all such things you don't take. Instead eat whole grain like jowar, bajra, amaranth and even oatmeal as all these things would regulate your insulin level and this would automatically help in weight loss. Weight loss, accompanied by an increase in insulin sensitivity has proven to be successful treatment for the metabolic and hormonal abnormalities characteristics of PCOS population. It is believed that diet can help reduce insulin resistance cure which help to regularise menses, hirsutism & acne and also decrease the risk of heart disease and diabetes as well.

Person must take milk but best way to take milk would be in the form of curd, cheese etc. Try to follow the discipline- First upon waking up, first in morning, the moment you wake up person should be taking a glass of

water with half lemon juice and honey. Second, have such fresh fruits between breakfast and lunch. These fruits could be apples, oranges, banana, grapes and grapefruit or a glass of milk could be taken. Third, in lunch a bowl of steamed vegetables seasoned with vegetable oil or butter and salt, whole wheat chapati or jowar, ragi chapati and a glass of buttermilk. Fourth in mid afternoon, a glass of fresh fruit or lemon juice or vegetable juice. Fifth – Dinner. A large bowl of salad made from fresh vegetables such as tomatoes, carrots, beetroots, sprouted moong or chana. Sixth- at bed time. At night before going to bed, take a glass of cow's milk with haldi, pinch of black pepper and if possible aliv in milk and take it. Special attention should be given to spinach or dark green leafy vegetables. Even take broccoli and cauliflower in routine. Berries like blueberries, blackberries and cherries should be taken. Nuts like flaxseeds, sunflower seeds, pumpkin seeds should be considered. Excessive fat, spicy food, strong tea, coffee, white sugar, white flour, refined cereals, greasy or fried food should all be avoided. Drink at least 8-10 glasses of water in a day. In today's modern lifestyle, these readymade products which are so easily available, young girls, they just easily consume it, which should be totally avoided. Eat healthy, good food, which we have mentioned.

• **Second- Physical activity (Exercise):** One major cause of PCOS is sedentary lifestyle, lack of exercise in body. According to research 50% of overweight women have PCOS. This is a great concern and that is why exercising is very important to improve the reproductive health.

• **Best exercise for PCOS**

- HIIT (High Intensity Interval Training)
- Strength training
- Yoga

Some yogic technique that you should practice are Bhadrasana- sput and sitting, Paryankasana, Vajrasana, Matsyasana, Ushtrasana, Pachimottanasana, Ardh matsyendrasana, Pavanmuktasana, Balsana, Viparatkarni, Abdominal breathing and Bhramari pranayama. All these are highly beneficial and this should be done regularly. These practices promote blood flow to the pelvic area and this helps in proper production and brings balance to the hormones. Women suffering from PCOD have lots of mood swings, which may not just make them unhappy and sad, but all other people around them also are harassed or are really disturbed because of that. It is important that you develop feeling of vairagya, the feeling of let go and live life systematically. Whenever you feel low, try and concentrate on your breathing, take slow and long breath and that would settle your mind. Someone has always said that it is very difficult to understand a woman because situations vary, the reactions vary. Sometimes the same situation helps women and sometimes it irritates women, so its the women, herself to take the charge of her mind, her emotions and see that she behaves in a balanced, happy and cheerful way. This problem, as it comes, it will go.

IV. DIET PLAN FOR PCOS

• **Indian Diet Plan (1200-1500 kcal; Protein 50-70 g)**

Start the day with 1 tsp pure ghee or virgin coconut oil with 1/4th tsp of turmeric powder (7% curcumin) for Diabetes control and reduce inflammation After ½ hour consume ½ tbsp mixed seeds (eg. Flax. Sunflower and melon). It will provide 150 kcal, protein 6 g.

• **Breakfast= 250 kcal, protein 12 g**

(For better sugar control, there should be combination of carbohydrate and protein)

Eg. 1. Almond milk 1 cup; Rajgeera lahya 1 cup; Chia seeds 1 tsp; Any fruit

Eg. 2. Egg white (2); fruits 2 cups; Among and walnuts 1 fistful;

Eg. 3. Curd 1 cup+ thalipeeth 2;

Eg. 4. Dal chillas 2+ any fruit

• **Mid Morning meal: Any juice can be taken**

- Green juice for detoxification (eg. Combination of Spinach, Carom seed (ajwain), Coriander leaves, Mint leaves)
- Digestive juice: (eg. Combination of Beetroot, Celery leaves, Coriander, Cucumber, Ginger, Lemon, Carrot)
- Fresh juice: (eg. Combination of Apple, Beetroot, Celery, Spinach, Tomato)

• **Lunch: 350 kcal & protein 20 g**

1 big bowl of salad or raita, 2 glass of buttermilk, 1 katori Dal, 1 Millet Roti/ 1 Mix Millet Roti, 1 cup Rice (Brown, Red)/ Rice Roti, 1 cup vegetable

• **Gluten free diet (Avoid wheat chapati, Bread, pasta, sooji, replace with Millets)**

Snacks: Herbal Tea + murmur/ makhana/ moong khakra can be taken

• **Dinner should be light: 300 kcal, protein 12-15 g (2 Hrs before bed time)**

- More salad portion, Dal/ Paneer/Tofu/Curd
- Less carbs, Rice, Mixed Millet Roti
- After Dinner any activity can be done like walking for 20 minutes, gym activity, yoga etc
- 300-350 kcal should burn everyday.
- Focus on good sleep (7-8 Hrs sleep)

• **Following changes will be seen within 3 months**

- Feel Fresh and energetic
- Less sugar cravings
- Weight loss
- Regular periods
- Increase chances of conception
- Reduce acne
- Reduce hair fall and improve hair growth

V. CONCLUSION

PCOS is very common and it is very common globally, 1 out of 10 women suffer from this. Sometimes it just goes undiagnosed and unaware. usually when a female has a problem during menstrual cycle and its irregularity, excessive hair growth on face, unnatural weight gain, hair loss, acne, a woman should definitely go for PCOS. In this paper we emphasize the role of food and exercise to improve the condition of females suffering from PCOS. A woman with PCOS is often found to have high insulin level. Diet with high refined carbohydrates like maida preparation, starchy, sugary food can cause insulin resistance. Therefore avoid white bread, biscuits, pastas, refined products, artificially coloured, flavoured vitamins products, readymade packets open the packet and eat, open the bottle and drink. Instead eat whole grain like jowar, bajra, amaranth and even oatmeal as all these things would regulate your insulin level. *Indian Diet Plan for PCOS (1200-1500 kcal; Protein 50-70 g) has been mentioned in this paper.*

Along with it exercises in the form of HIIT (High Intensity Interval Training), Strength training, swimming, walking, cycling etc can be of great benefit.

Some yogic techniques that should be practiced are Bhadrasana- sput and sitting, Paryankasana, Vajrasana, Matsyasana, Ushtrasana, Pachimottanasana, Ardhamatsyendrasana, Pavanmuktasana, Balsana, Viparaktarni, Abdominal breathing and Bhramari pranayama. All these are highly beneficial and this should be done regularly. These practices promote blood flow to the pelvic area and this helps in proper production and brings balance to the hormones. Overall we can conclude that food and exercise play a vital role for the betterment of female with PCOS.

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