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"EFFICACY OF AYURVEDIC THERAPIES
WITH PANCHAKARMA IN THE
MANAGEMENT OF POLYCYSTIC OVARY
SYNDROME (PCOS) AND POLYCYSTIC
OVARY DISEASE (PCOD)"

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ABSTRACT

Polycystic Ovarian Syndrome (PCOS) is one of the fastest-growing endocrine diseases that occur in women in their reproductive years. Polycystic Ovary Syndrome involves hormonal imbalances in the ovulation process leading to the retention of immature follicles in the ovaries. The prevalence rate of PCOS in the world is believed to be about 6% to 10%, while in the Indian women population, the prevalence is between 3.7% and 22.5%.

The characteristics of PCOS are hyperandrogenism, an-ovulation, and polycystic ovaries. Clinically, this disease manifests in form of irregular or absence of menstrual cycles, hirsutism, acne, and infertility. In the current world scenario, the prevalence rate of PCOS has increased drastically due to sedentary lifestyle and poor nutritional intake.

Though there is no mention of PCOS in Ayurveda literature, the symptoms associated with PCOS are similar to many diseases like Bandhya Yonivyapada, Artavavaha Srotas Viddha Lakshana, Nastartava, and Ksheenaartava according to Acharya Sushruta. Likewise, the diseases Pushpaghni Jatharini and Vikrita Jatharini as mentioned by Acharya Kashyapa are similar to PCOS. Of all these diseases, Bandhya Yonivyapada is the one which is closest to PCOS.

In the current study, the main attention is paid to Nastartava, which is believed to be one of the key symptoms of Bandhya. According to Ayurvedic sources, the concept of Artava refers to menstrual blood, ovum and ovarian hormones. Therefore, amenorrhea, anovulation and hormonal disturbances are regarded as the symptoms of Nastartava. The suggested treatment technique includes Nidanaparivarjan (removal of causative factors), herbal medications and Panchakarma treatments.

Keywords: Ayurveda, Artava, Nastartava, PCOS, Herbal drugs, Panchakarma, endometriosis.

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INTRODUCTION:

When words like PCOD or PCOS come up, it is common knowledge that it would mean "irregular periods." However, there are many misconceptions surrounding these illnesses. Although PCOD and PCOS are not the same medical conditions, it leads to much misinformation surrounding these two. [1] Polycystic Ovarian Disease (PCOD) is a multifaceted and heterogeneous disease with an unknown cause that affects roughly 1 in 10 women. It is known for being a disease involving multiple ovarian cysts, due to irregularities in the normal menstrual period. The ovaries become large and secrete excess quantities of male hormones and female hormones. This causes irregular growth and development of the egg cells in the ovaries, hence irregular ovulation and menstruation.

The Polycystic Ovarian Syndrome (PCOS) is one of the most common endocrinological diseases affecting reproductive-age women. There is an increasing trend in the prevalence rate of PCOS because of sedentary lifestyle, pollution, and unhealthy eating habits. PCOS is often identified in women seeking medical advice for infertility and abnormal menstrual bleeding. Most patients with this condition are well-managed through hormonal treatment or surgery, where necessary.

PCOS underscores the need for careful and tailored management. In PCOS, imbalance in the hormones affects the process of follicular maturation in the ovarian cycle, and the follicles fail to be released from the ovaries. In time, the retained follicles turn into cysts and with each ovarian cycle, more cysts are formed; hence, the development of multiple ovarian cysts. PCOS is different from PCOD, though the two have similar names. [2]

While the actual cause of PCOD/PCOS is yet to be determined, a number of causative elements have been identified as being responsible for the development of this condition. Some of them include genetics, lack of physical activity, poor diet, imbalance between personal and professional life, environmental pollution, radio frequency radiation emitted by cell phones, as well as increased stress levels. [5] In the current era where people experience increased stress on a daily basis, stress has become a major factor associated with the occurrence of PCOS. This disorder can lead to cardiovascular problems, type 2 diabetes, uterine cancer, and many others.

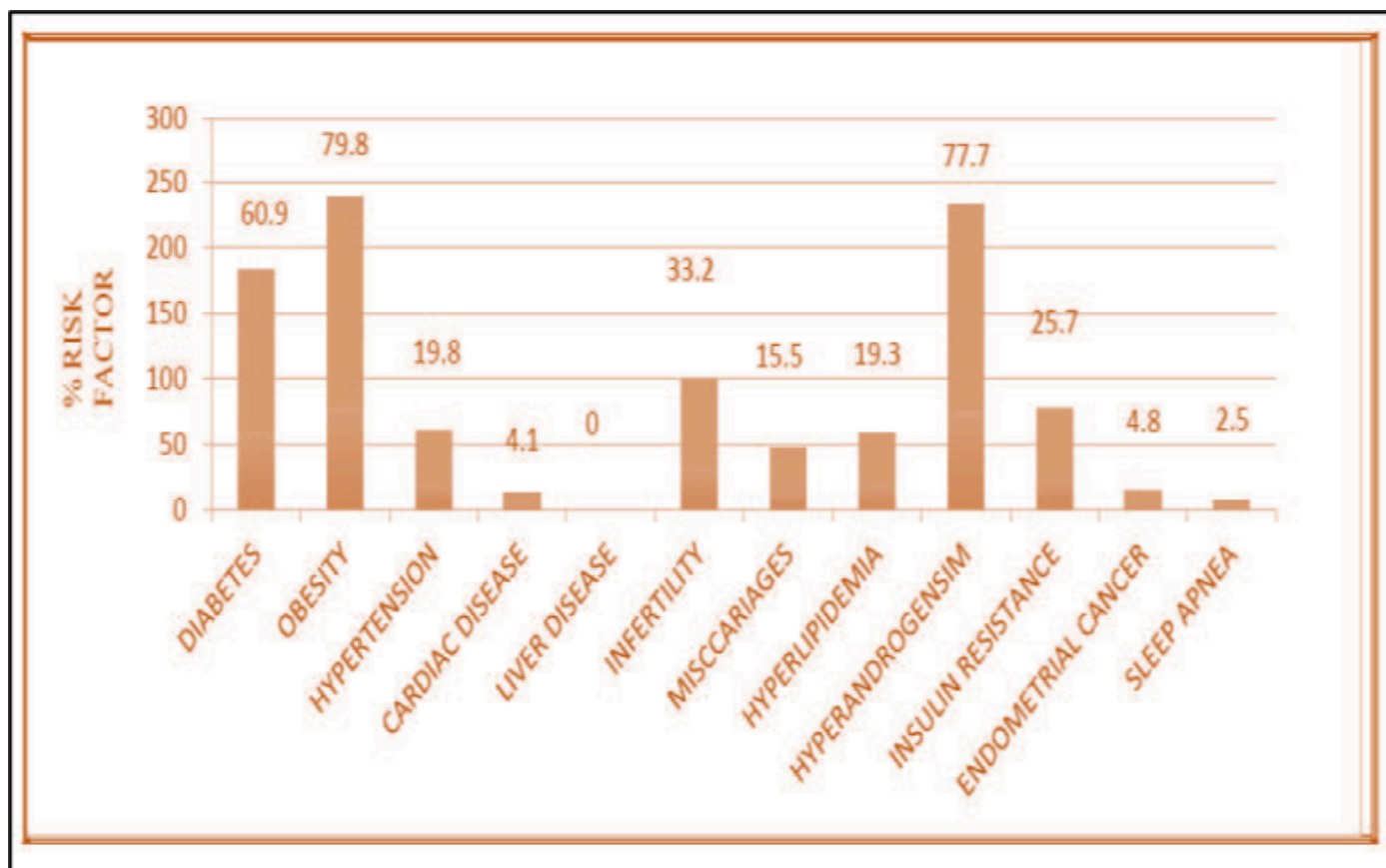


Fig. Risk factors related to PCOS [6]

AYURVEDIC CONCEPT:

As per Acharyas, the analysis of all diseases has to be done on the basis of the concepts of Nidana Panchaka. But in the case of disorders in classical literature, they do not have this kind of classification but have limited their discussion to the Nidana and Chikitsa alone. In the case of PCOS, the disorders related to PCOS can be considered as different disease pathologies with respect to Dosha, Dushya, and Roga Adhishthana. Variations occur due to changes in these elements.

The various gynecological conditions in Ayurveda fall into the category of Yonivyapad, but there are exceptions to this categorization. The condition of PCOS is not clearly stated in classical Ayurvedic literature as an independent disease entity; however, its signs and symptoms correspond to those described for conditions such as Bandhyatva Yonivyapad, Nastartava, Ksheenartava, which have been stated by Acharya Sushruta and Pushpaghni Jatharini and Vikrita Jatharini, which have been stated by Acharya Kashyapa.

Bandhyatva Yonivyapad, according to Acharya Sushruta, was a disease mainly due to Nastartava. [7] Furthermore, he explained Nastartava in the eight different diseases of Artava. In this disease, Artava is not completely missing, but rather it is inactive or non-visible because of blocked channels due to increased Vata and Kapha. This obstruction results in amenorrhea. [8] The word Artava in Ayurvedic literature has been used quite frequently, referring not just to menstrual blood but also to the ovum and ovarian hormones.

In case Artava is considered to be menstrual blood, then Nastartava is when there is a blockage of Artavavaha Srotas (canals that carry Artava). The blockage is caused mainly due to the aggregation of Vata and Kapha Doshas, which causes a hindrance in the regular and monthly expulsion of Artava, causing amenorrhea.

In case of Vikrita Jatharini, there will be irregular menstrual periods, characterized by irregularity in duration, quantity, and color of menstruation, leaving one fatigued and weak without any apparent cause. [9]

In the case of viewing Artava as ovum, Nastartava could be viewed as anovulatory menstrual cycles, which are a major cause of infertility. Given the fact that the ovum is an extremely small cell structure, its presence is mostly determined through the conception process itself. [10] In other words, Pushpaghni Jatharini could be viewed as a woman who menstruates regularly without the process of ovulation taking place. Such condition is usually accompanied by symptoms like excess body weight and facial hair, especially around the cheeks – traits, which are very often linked to Polycystic Ovary Syndrome (PCOS). [11] The interesting point here is that about 30% of PCOS patients have regular menstrual cycles. [12]

Potential approaches for treatment and management:

The management of PCOS will involve balancing menstrual cycles, stimulation of ovulation, reducing the symptoms like hirsutism and acne, helping in weight loss and maintaining lower levels of high blood sugar and cholesterol levels.

PCOD is treated in Ayurveda by focusing on the underlying cause, which is the metabolic disturbance and taking ayurvedic medicines. It facilitates natural ovulation by facilitating growth of the follicles and reduces existing cysts to return to their normal size. Treatment in Ayurveda is always done according to the symptoms exhibited by the patient. There are three types of symptoms exhibited: irregular menses, symptoms of high levels of androgens like acne and hirsutism and infertility.

Modern medicine approach entails the use of birth control pills for the irregular menstrual cycles, anti-androgens and ovulation stimulating drugs for infertility. The diagnosis is made through a good history and thorough physical examination of the patient.

Thus, the Ayurvedic treatment not only deals with the symptoms but also works towards the improvement of the overall health and wellness.

Therefore, the management of PCOS should be designed with the following factors in mind —

Nidana Parivarjana:

Parivarjana of nidana is also an important strategy in the management of polycystic ovarian syndrome. It is advised that women should practice healthful living measures as indicated by Ayurveda, which are aimed at preventing diseases. Such strategies include Swasthya rakshana, which include measures such as Dincharya, Ritucharya, Sadvritta, Achara Rasayana (behavioral rejuvenation), Hitahara, Samyaka Nidra (6-8 hours of sleep per night) and Vyayama. Studies indicate that even small changes in diet can be of great importance. High intake of monounsaturated fats has shown to result in weight loss while low glycemic index diet helps in lowering insulin resistance and fibrinogen level in addition to improving lipid profile and menstrual regularity. [13]

Exercise:

A number of studies have revealed that exercise regularly is helpful in improving irregular menstruation and reducing insulin resistance in women suffering from PCOS. Studies have revealed that exercising regularly for about 30-45 minutes per day results in a favorable effect on BMI, waist circumference, and metabolic markers such as insulin sensitivity, total cholesterol level, and lipids. Thus, exercise helps reduce the risk of metabolic syndrome. [14]

Drugs used for PCOS:**1. Yashtimadhu – (Glycyrrhiza glabra L.)****Family: Fabaceae**

Yashtimadhu, or commonly known as liquorice, has been used as an agent that affects the metabolism of androgen. Studies indicate that this herb helps in reducing the level of serum testosterone through the inhibition of certain enzymes like 17 hydroxysteroid dehydrogenase and 17-20 lyase. The capacity of reducing excessive androgens makes liquorice as one of the supportive herbs for hirsutism and Polycystic Ovary Syndrome (PCOS). [15]

2. Meshashringi – (Gymnema sylvestre)**Family: Asclepiadaceae**

Research on *Gymnema sylvestre* supplementation has shown that it may lower glucose uptake in the intestines, encourage the regeneration of pancreatic beta cells, and boost insulin secretion from these cells. [16]

3. Jatamansi – (Nardostachys jatamansi)**Family: Valerianaceae**

This plant is known to help manage PCOS due to its ability to reduce androgen levels through its antiandrogenic properties. [17]

4. Kumari – (Aloe vera)**Family: Liliaceae**

Experiments have shown that *Aloe vera* has the capacity to reduce the levels of testosterone and insulin by increasing progesterone and estradiol concentrations and the down regulation of steroid receptor gene expression and aromatase enzyme activity. [18] Aromatase is an enzyme belonging to the family of cytochrome P450 enzymes and helps convert testosterone to estradiol and androstenedione to estrogen. Many animal studies have shown its use in restoring normal estrous cycles. [19]

5. Shatavari – (Asparagus racemosus)**Family: Liliaceae**

There is scientific proof in many researches that the use of *Shatavari* helps maintain reproductive health due to its ability to support the development of ovarian follicles, induce ovulation, prepare the uterus for conception and decrease the risk of miscarriages. Besides, its alcoholic extract increases insulin secretion. [20]

6.Lodhra – (*Symplocos racemosa*)**Family:** Symplocaceae

Lodhra bark has been used to treat menorrhagia and other problems in women's reproductive system. Various experiments have revealed that this plant helps in decreasing excess level of testosterone and increasing normal levels of estrogen, progesterone and cholesterol. It also helps to keep the structure of ovaries tissues and body weight healthy. It has been observed that these beneficial effects are similar to clomiphene citrate. ^[21]

7.Methika – (*Trigonella foenum-graecum*)**Family:** Fabaceae

The study on the seed extract of *Trigonella foenum-graecum* has demonstrated a significant reduction in the size of the ovary and cysts. Moreover, it has been found to increase the levels of luteinizing hormone (LH) and follicle-stimulating hormone (FSH). ^[22]

Symptom / Complication	Herbs Used for Treatment
Hormonal imbalance	<i>Bauhinia variegata</i>
Regulation of hormones	Phyllanthus emblica, Terminalia bellirica, Terminalia chebula, Commiphora wightii
Anti-oxidant	Cinnamomum cassia, Ocimum sanctum
Reproductive dysfunction	<i>Tribulus terrestris</i>
Depression & Mood swings	<i>Hypericum perforatum</i>
Menorrhagia	<i>Commiphora myrrha</i>
Cholesterol	<i>Nigella sativa</i>
Estrogenic action	<i>Saraca asoca</i>
Folliculogenesis	<i>Asparagus racemosus</i>
Regulation of menstrual flow	<i>Tinospora cordifolia</i>

Table: Herbs Used in the Treatment of PCOS-Related Symptoms

Panchakarma Treatment:

The Acharya Sushruta advised that the procedure of Samshodhana (purification) must be done when the Artava Kshaya (diminished menstruation flow) is seen, and then use the Agneya Dravya (heating) medicine. As per the commentary of Dalhana, the use of Vamana therapy for purification is advised because the Virechana decreases Pitta Dosha, which causes Artava Kshaya (diminished menstruation flow) to become worse. In the process of Vamana Karma (therapeutic vomiting), the Saumya Dosha is eliminated, hence increasing the element of Aagneya Dosha, which helps in the improvement of Artava. Acharya Chakrapani said that the Vamana and Virechana both are good for health, and must be used because they purify the upper and lower channels, respectively.

1.Vamana Karma: The vamana therapy will assist in enhancing the rate of metabolic processes in the body, thus reducing body weight as well as concentrating on the metabolism of the liver because the liver is responsible for the secretion of hormones in the body. In view of the connection that exists between the levels of estrogen and obesity, weight loss will result in balanced levels of androgens, glucose and ovulation. [24]

2.Basti: As per Kashyap, Anuvāsana Basti is indicated in various diseases like oligomenorrhea and amenorrhea. [25] The contemporary scientific literature also corroborates the fact that rectal drugs undergo absorption by the mucous membrane of the rectum and get distributed into the systemic circulation. When Basti is introduced in the GIT, there takes place stimulation of enteric nervous system (ENS), which is analogous to the Central Nervous System (CNS). This further stimulates the Central Nervous System and causes the release of endorphins in the GIT, resulting in inhibition of secretion of Gonadotropins. Also, Basti may stimulate the Parasympathetic Nervous System, thus promoting follicular maturation and ovulation. [26]

3. Uttara Basti: Uttara Basti is highly beneficial for gynecological disorders due to its cleansing action on the Artavavahasrotas (reproductive tract), balancing the increased Apana Vayu and development of ovarian follicles.

4.Nasya: Nasya therapy can stimulate the olfactory nerve and the limbic system that further affects the hypothalamus. The stimulation encourages the function of Gonadotropin Releasing Hormone (GnRH) neurons in maintaining GnRH pulse generation, thus ensuring a normal menstrual cycle.

5.Udavartana: It is known to reduce lipid levels.

6. Yoga – Asana: It is very beneficial to perform yoga exercises like Suryanamaskara, Sarvangasana, Paschimottanasana, Ardhamatsyendrasana, and Matsyasana. In one clinical study, 90 subjects were equally divided into two groups; one performed the normal exercise regimen, while the other performed Suryanamaskara, yoga postures, pranayama, relaxation technique, and meditation along with yogic counseling for managing their lifestyle and stress levels. It was observed that yoga proved superior to normal exercise regimen in terms of lipid profile, glucose, and insulin resistance in PCOS. [27]

7.Pranayama – Nadishodhana, Kapalbhathi, and Bhramari: Exercises like Nadishodhana, Kapalbhathi, and Bhramari are suggested to deal with PCOS. The exercise of Kapalbhathi is especially beneficial in the context of the brain-pancreas axis, and helps overcome hyperinsulinemia and dyslipidemia. This practice improves the blood flow to the muscles and increases the number of insulin receptors in the muscle cells. Long-term exercises may bring about changes in the waist-to-hip ratio. [28]

Dietary Changes:

Restrictions on the intake of substances such as tea and coffee are important, but there is usually no problem if one takes mild black tea or green tea. A diet which aims to balance out Kapha dosha consists of foods which are light and easily digestible and not heavy foods. Fruits and vegetables when cooked are good for consumption, but some raw vegetables can also be taken during summer season. Heavy foods, such as pasta, pudding, fried foods, and hard cheeses should be avoided. Also, taking warm foods which are seasoned with pungent, bitter, and astringent spices like chili, cloves, cardamom, ginger, garlic, and turmeric is beneficial.

Future Aspects of PCOS Using Herbal Treatment:

Polycystic Ovary Syndrome (PCOS) is an intricate disorder which comes along with numerous complications. Though being very widespread, not much research has been done concerning the chronic effects of PCOS on a woman's health. Women suffering from PCOS have higher chances of experiencing complications including but not limited to obesity, diabetes, heart disease, miscarriages, tiredness, stress, and mood disorders.

It continues to be difficult to pinpoint the best possible treatment options for women, especially those during and post menopause. While some studies have shown increased bone mineral density in women suffering from PCOS, further research is required in order to measure changing health risks for women as they age.

Additionally, genetics seems to play a vital role in the development and progression of PCOS. Further research is required in order to discover genetic markers and determine risk factors. Natural herbs have been shown as one of the ways through which PCOS can be managed holistically. Further scientific research would be required in order to prove its efficacy.[29] The article brings out several herbs that could be used in the management of Polycystic Ovarian Syndrome (PCOS). The use of synthetic medication over time tends to cause numerous side effects. Therefore, in order to minimize these side effects, herbal remedies would be preferable in the management of PCOS symptoms. [30]

CONCLUSION:

Polycystic Ovary Disease (PCOD) has many lifestyle connections, but it can be controlled and even prevented with the help of Ayurveda. Ayurveda medicine and lifestyle changes are both equally important to prevent and treat the disease. Hence, inclusion of Ayurveda in our daily lives is very important for the treatment of such diseases. PCOS is an important health problem for physicians as well as people, since it is harmful for the health and quality of life of women. Conventional treatments include the side effects and expensive fertility medicines which increases the financial burden of society. PCOS cannot be found in the classical Ayurveda literature (Samhitas), but the disease management through understanding of Dosha and Dushya can be followed from the teachings of the Acharyas. PCOS is one of the Yonivyapada among various others, and Bandhya Yonivyapada resembles PCOS to a great extent. Understanding of Artava, which consists of Menstrual blood, ovum and hormones helps us understand the PCOS signs and symptoms within Ayurveda. In this way, we can prevent causative factors, use herbal medicines, Panchakarma treatments and Yoga which is efficient, safe and economical in treating PCOS.

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