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## REVIEW ON EFFICACY OF *NASYA KARMA* IN PCOS

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### Abstract

PCOS (Poly Cystic Ovarian Syndrome) is considered as fastest growing health hazard amongst women of reproductive age group. It affects the pituitary - ovarian hormones and results infertility, menstrual dysfunction and androgen excess, which significantly impacts their quality of life. Sedentary lifestyle, excessive stress & anxiety associated with junk food habits worsen the prognosis. Stress is playing a major role in PCOS pathogenesis nowadays. Though PCOS is a reproductive disorder root of origin is hormonal imbalance i.e. defect in H-P-O axis function. Keeping view on these facts *Nasya* therapy can be an effective option in the management of PCOS. This article attempts to elaborate the role of efficacy of *Nasya karma* in PCOS.

**Key-words:** *Ayurveda, PCOS, Nasya, Disorder*

## **Introduction**

PCOS is one of the most common endocrinopathy affecting 4%- 8% of women of reproductive age group.<sup>1</sup> Poly Cystic Ovarian Syndrome is a condition that has cysts on the ovaries that prevent the ovaries from performing normally. It is a disorder of the endocrine system caused by hormonal imbalance & characterized by excess androgen production by ovaries or adrenals which interferes with growth of ovarian follicles.

Fertility problems experienced by women with PolyCystic Ovarian Syndrome may be related to the elevated hormone LH. Increased Leutenizing hormone reduces the chance of conception and increase miscarriage. Additionally abnormal insulin levels may also contribute to poor egg quality, making conception more difficult.<sup>2</sup>

PCOS tends to run in families, but little is known about its cause or how it passes from one generation to the next. Researchers believe that stress and environmental factors (including diet, exercise, and pollution) play a role in the development of PCOS. Other possible causes include excessive prenatal exposure to androgen/testosterone and excessive insulin production.<sup>3</sup>

## **Etiopathogenesis**

In PCOS there will be hormonal imbalance i.e. LH will be high & FSH will be low. Normal value of LH : FSH ratio is 1.5 : 1 where as in PCOS it increases up to 3 : 1. Increased levels of LH will lead to increased production of androgen by Theca cells. It will be reflected on the body as hirsutism i.e. male like pattern, acne, etc.

Etiology & primary mechanism remains unclear; despite a remarkable advance in understanding of PCOS, the underlying cause of it is unknown. It has a genetic & familial tendency. Any defect in Hypothalamic - Ovarian axis will cause hormonal or chemical imbalance which may alter the ovarian function leading to PCOS.

Pre-ovulatory phase, ovulation, post ovulatory phase i.e. complete menstrual cycle is a result of hormonal changes taking place in a woman's body. All the hormones are controlled by the Hypothalamus & Pituitary gland situated in the brain. Researchers also believe that stress play a role in the development of PCOS.<sup>4</sup>

## **Stress & PCOS**

Stress is a nonspecific response of the body to any demand made on. Such a response consists of a series of neurohumoral, endocrine & metabolic changes with related physiological alterations involving entire systems of the body. Hence any kind of stress affects the female reproductive system as well. Stress always keeps your mind confused & it's said that a confused mind always brings confused or irregular cycles. Stress plays a major role in the pathogenesis of a number of diseases. It is a common & commonly underappreciated cause of reproductive dysfunction. *Acharya Charak* also mentioned mental affliction as one of the causes of delay in conception in fertile women.<sup>5</sup> Progesterone plays a very important role in normal menstrual cycle, it gets affected in PCOS due to stress, stress induced anovulation leads to infertility.<sup>6</sup>

## **Treatment of PCOS**

PCOS has no cure as of 2020.<sup>7</sup> Treatment may involve lifestyle changes such as weight loss & exercise. Birth control pills may help with improving the regularity of periods, excess hair growth & acne. Efforts to improve fertility include weight loss, Clomiphene for ovulation or Metformin or IVF is also used as a treatment.

## **Role of ayurveda**

This particular feminine disorder is not described word to word in Ayurveda. The available treatment modalities for this hardly address the correction of the internal mechanism of these glands. Ayurveda can help here. GnRH (secreted by Hypothalamus) is the main regulator of the H-P-O axis & the cells of GnRH originate in the olfactory area & migrate into the brain. Root area for PCOS can be considered as the brain. Stress and the brain have strong relationships with each other. Stress directly leads to the hormonal imbalance which is seen as stress induced anovulation and infertility. Studies show the role of H-P-O axis & stress in the pathogenesis of PCOS, in endocrine dysfunctions, such as abnormal GnRH pulse frequency, increased LH/FSH ratio, adrenal & ovarian excess androgen.

Treatment principle is to regulate the hormonal activity, directly or by regulating stress. Various *Shodhan & Shaman chikitsa* are used for treating PCOS like *Niruha* -

*Anuvasan basti, Virechan, Nasya, Uttar Basti, Yonidhavan* etc. out of all *Nasya* can be the cure for both i.e. hormonal imbalance and stress. By providing nourishment to the brain through *Nasya* pathology of PCOS can be prevented.

### ***Nasya karma***

Administration of medicine or medicated oil through the nose is known as *Nasya*. *Nasya* is considered to be that *indriya* whose functions are not only limited to respiration but is also considered as pathway for Drug Administration. *Acharya* says “ *Nasa hi shirso dwaram*” i.e. *nasa* is said to be the door to the *shiras* because *Nasa* is indirectly connected with the brain centers in the head.<sup>8</sup>

*Nasa* being a doorway to *shiras* the drug administered through nostrils, reaches *Shringatak marma*. *Shringatak* is a *shirogat siramarma* formed by the union of *siras* (blood vessels). Which is located in the inner side of middle part of the head i.e. *Shiraso Antarmadhyam*.<sup>9</sup>

### **Probable mode of action of Nasya Karma**

Multiple recent studies regarding mode of action suggests that intranasal administration may enable substances to directly enter into the brain by the pathways involving the olfactory epithelium & olfactory bulb.

Great significance of nasal drug administration is that it can effectively deliver the drugs directly in CNS. There are three likely mechanisms underlying the direct nose to brain drug delivery. There could be at least one intracellular transport mediated route & two extracellular transport mediated routes.<sup>10</sup>

### **Discussion**

Poly Cystic Ovarian Syndrome is one of the main causes of sub-fertility in women.<sup>11</sup> It is associated with anovulation, androgen excess, obesity and infertility. PCOS results in increased free testosterone, ovarian androgen secretion, free estradiol and estrone. It's favoring LH secretion and steady state follicle stimulating hormone levels which effect on follicular maturation. This hyperandrogenic, normal estrogen environment results in an anovulatory state, no progesterone is available to disrupt the constant estrogen stimulation

of the endometrium.<sup>12</sup> Indicating importance of normal hormone secretion from Hypothalamus and stress free life.

Nose is connected through the vascular system, nerve plexus of the olfactory nerve, and ophthalmic and maxillary branches of trigeminal nerves to the brain. The olfactory nerve differs from other cranial nerves in its relation with the brain.

*Nasya karma* is an important therapy to remove morbid *Doshas* from the body. Though it is useful in the treatment of diseases occurring in the organs situated above the clavicle, indirectly it works on the whole body by improving the functioning of the endocrine glands & nervous system. Hence by eliminating morbid *Doshas* ultimately promotes the normal physiological functions of the body.

### **Efficacy of *Nasya* at Endocrine level**

The peripheral olfactory nerves are chemoreceptors in nature. These are phylogenetically closely related to the brain & they are considered as the fiber tracts of the brain itself. There are adjacent nerves called Terminal nerves which run along the olfactory nerves. These nerves are connected with the Limbic system of the brain including Hypothalamus. The Hypothalamus is considered to be responsible for integrating the function of the endocrine system. Mode of action can be understood by the experiment of jasmine flowers. Exposure to the smell of Jasmine flowers reduces activity of mammary gland. If the fragrance could have the effect, it may be acting through impulses traveling via the olfactory pathways influencing hypothalamus which in turn, causes the inhibition effect through the Pituitary.<sup>13</sup>

### **Efficacy of *Nasya* on Stress**

Stress is a term that refers to the sum of the physical, mental, and emotional strains or tensions on a person. Stress is the wear and tear our mind and body experiences as we attempt to cope with our continually changing environment. Stress is also called anxiety, tension etc. There are increasing reports stating the role of stress in PCOS manifestation; *brihan* type of *nasya* can help to reduce the stress also. As *brihan nasya* provides nourishment to the nervous system & helps in removing the irritation. On its nasal administration it reaches to different *shirogat indriyas* & causes vat shaman by showing

*brihan* effect.<sup>13</sup> Nasal medication acts as a purificatory aid to the head where major sensory faculties are located. The clarity of these faculties (*indriya prasada*) leads to clarity of mind.<sup>14</sup>

## Conclusion

*Nasya* can stimulate the higher centers of the brain like hypothalamus, epithalamus, parts of basal ganglia, etc. *Nasya* is very convenient to the patients due to its easy procedure, less requirement of time with minimal side effects. Keeping view on the above said facts of hypothalamus regulation and stress reduction, *Nasya* therapy can be used as an alternative option in the management of PCOS.

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