



INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

An International Open Access, Peer-reviewed, Refereed Journal

" Role Of Nasya Karma In Improving Low Amh "

Author: Dr. T. DEVIKA , Final Year PG Scholar, Dept. of Prasuti Tantra evam Stree roga, Dr. N.R.S Government Ayurvedic college, Vijayawada, AP

GUIDE: Dr.R.VIJAYASANTHAKUMARI,MD(AYU)BHU.,P.G.DIP,(YOGA), +PROFESSOR

Department of Prasuti Tantra evam Stree Roga, Dr. N.R.S Govt. Ayurvedic College, Vijayawada, AP

ABSTRACT

Anti-Mullerian Hormone (AMH) is the biomarker of ovarian reserve and reproductive potential in female. Decreased AMH levels are associated with poor ovarian reserve, premature ovarian insufficiency, stress-related infertility, and reproductive ageing. Contemporary management options for low AMH remain limited. Ayurveda describes similar conditions under Artava kshaya, and Dhatu kshaya with predominant Vata involvement. Nasal route provides a unique pathway for rapid drug absorption due to its extensive vascularization and direct anatomical connection with the brain through the olfactory and trigeminal pathways. Nasya Karma, one of Panchakarma procedures in which medicine administered through the nasal route influences the central nervous system and regulate Prana Vata. Considering the close relationship between the hypothalamic-pituitary-ovarian (HPO) axis and ovarian function, Nasya Karma plays significant role in improving AMH levels through neuroendocrine modulation. This article explores the probable Ayurvedic and modern mechanisms behind the role of Nasya Karma in enhancing ovarian reserve and AMH levels.

Keywords: Nasya Karma, Anti-Mullerian Hormone, Ovarian Reserve, Artava Kshaya, HPO Axis, Panchakarma

INTRODUCTION

Anti-Mullerian Hormone (AMH) is a glycoprotein hormone secreted by granulosa cells of pre-antral and small antral follicles. It reflects the quantitative aspect of ovarian reserve and is considered a reliable indicator in infertility evaluation.

Low AMH levels are commonly observed in:

Diminished ovarian reserve, Premature ovarian insufficiency, Advanced reproductive age, Chronic stress conditions.

According to **Ayurveda**, Reduction in ovarian reserve can be correlated with: Artava Kshaya, Vata Prakopa¹ in Artavavaha Srotas, Dhatu Kshaya (especially Rasa and Shukra Dhatu). It's noteworthy that

Vridha Vagbhata² was the pioneer in explaining how Nasya Karma functions. The term Nasya derives from the Sanskrit word Nasa, meaning the nose.

“**Nasa hi Shiraso Dwaram**”³– the nose is the gateway to the brain. Since ovarian function is regulated by the hypothalamic–pituitary–ovarian axis, Nasya Karma is one of the Panchakarma procedure influences reproductive hormones via modulating the action of central neuroendocrine system.

AIMS AND OBJECTIVES

1. To explore the conceptual and probable scientific role of Nasya Karma in improving AMH levels.
2. To explore the therapeutic role of Nasya Karma in improving ovarian function and hormonal regulation

MATERIALS AND METHODS

This is a conceptual review study based on:

1. Classical Ayurvedic classics (Charaka Samhita, Sushruta Samhita, Ashtanga Hridaya)
2. Literature on AMH and ovarian physiology.
3. Research articles on nasal drug delivery and neuroendocrine regulation.
4. Interventional concept: Medicated nasya with vata samaka and Rasayana drugs

PATHOPHYSIOLOGY OF LOW AMH

Low AMH primarily reflects reduced primordial follicle number due to accelerated follicular depletion, granulosa cell apoptosis, oxidative stress, ovarian stromal ischemia, autoimmune destruction, genetic mutations, and endocrine dysregulation. Increased reactive oxygen species cause mitochondrial damage and activation of apoptotic pathways, leading to follicular atresia. Aging further accelerates telomere shortening and DNA damage contributing to ovarian insufficiency.

Ayurveda explains, reproductive competence depends upon the proper functioning of Beeja (ovum), Kshetra (uterus), Ritu (fertile period), and Ambu (nutritive factors). Acharya Sushruta states: '**Rutukshetrambubeejanam samyogad garbhah sambhavati**'² Low AMH can be correlated with Artava Kshaya, and Vata vridhi.

Acharya Charaka in Sharira sthana³ explains the term Alpabeeja as one among the varieties of Napumsaka indirectly quoted that decrease in low AMH can be considered to the term ALPABEEJA.

Vata is responsible for degeneration and depletion (Kshaya). Acharya Charaka states '**Vayur hi shariram dharayati**'⁴. Excess Vata leads to Dhatu Kshaya including Artava Dhatu. Follicular depletion corresponds to Dhatu Kshaya, while granulosa cell dysfunction correlates with Artava Dushti.

Vata Dushti → Artava Kshaya → Beeja Kshaya → Diminished Ovarian Reserve → Low AMH → Infertility

Srotodushti⁵ (channel pathology) described as 'Sanga' (obstruction) and 'Siragranthi' can be correlated with ovarian stromal fibrosis and microvascular compromise. Oxidative stress and autoimmune pathology resemble Pitta involvement, whereas Kapha imbalance may contribute to metabolic disturbances.

Modern Pathophysiology	Ayurvedic Interpretation
Reduced AMH indicates diminished ovarian reserve	Alpa Beeja
Increased follicular atresia	Dhatu Kshaya
Accelerated ovarian aging	Vata Prakopa
Impaired granulosa cell function	Artava Dushti ⁶

NASYA KARMA: MECHANISM OF ACTION

In Nasya Karma, the action of administered drug can be understood as follows: The passage of drugs through the nasal mucosa is the first step in the absorption in the nasal cavity enter the vital Sringaataka Marma⁷ and from there, they disperse into various channels known as Srotases. Nasya stimulates the olfactory nerves and the limbic system, which in turn activates the hypothalamus, leading to the stimulation of GnRH neurons ⁸. This may help regulate the pulsatile secretion of GnRH, subsequently triggering proper gonadotropin release and promoting ovulation. This interplay highlights the significant role of olfactory stimuli in modulating brain functions related to behavior and hormonal regulation. Uncharged as well as small particles easily pass through the mucus while charged as well as large particles are more difficult to cross. The following are two mechanisms to think about: -The first mechanism of drug absorption involves an aqueous route of transport (paracellular route). The paracellular route is slow and passive. -The second mechanism includes the transport of the drugs through a lipoidal route (transcellular route). The transcellular route is responsible for the transport of lipophilicity.

Nose-to-brain drug delivery:⁹

There are most likely three mechanisms at work in the direct nose-to-drug delivery; there could be at least **one intracellular transport mediated route** and **two extracellular transport mediated routes**.

Intracellular Transport: By the intracellular transport the drug administered intranasally delivers the drug typically taking hours to reach the olfactory bulb. The olfactory neuron in the olfactory epithelium could uptake the molecules by such processes as endocytosis, which could reach the olfactory bulb by axonal transport.

Extracellular Transport ¹⁰ Both extracellular transport of administered medicine shows dual affects by rapid entrance into the brain, within minutes of intranasal administration. It covers the gap between the olfactory neurons in the olfactory epithelium which are subsequently transported to the olfactory bulb. The nasal cavity provides a highly efficient pathway for drug absorption due to its large surface area, rich vascular supply. Nasal mucous membrane possesses an extensive vascular network that facilitates the rapid absorption of drugs. When a drug is administered through the nostrils, reaches the nasal cavity, particularly the olfactory region located in the superior part of the nasal cavity which contains a specialized olfactory epithelium responsible for detecting chemical stimuli. After administration, the drug diffuses through the mucus layer covering the olfactory epithelium and interacts with olfactory receptor neurons present on the surface. The molecules bind to receptors located on these olfactory sensory neurons, initiating neural stimulation which helps in the uptake of drug molecules into the olfactory neurons. The absorbed molecules are transported along the olfactory nerve fibers. These nerve fibers pass through the cribriform plate of the ethmoid bone and reach to the olfactory bulb. From the olfactory bulb, signals are transmitted to various regions of the brain including the limbic system and hypothalamus. This neural transmission can lead to the stimulation of Gonadotropin-Releasing Hormone (GnRH) neurons. As a result, it may help regulate the pulsatile secretion of Gonadotropin-Releasing Hormone, subsequently triggering proper gonadotropin release and promoting

ovulation. Thus, this interaction highlights the significant role of olfactory stimuli in modulating brain functions related to hormonal regulation.

Nasya Administration → Nasal Absorption → Olfactory Pathway → Hypothalamus Activation → GnRH Secretion → FSH & LH Release → Follicular Development → Improved Ovarian Function.

Effect on Drug Absorption and Transportation :

Keeping the head in a lowered position and retaining the medicine in nasopharynx helps more availability of drug for longer duration helps in more absorption which may also be facilitated by the “perivascular pump” that is driven by arterial pulsations Any liquid soluble substance has a greater chance for passive absorption directly through the cell of the lining membrane.

DISCUSSION

Low AMH represents diminished ovarian reserve, follicular atresia often associated with stress, aging, and neuroendocrine dysregulation. Ayurveda attributes similar pathology to Vata dominance and Dhatu Kshaya. Nasya Karma acts centrally by modulating Prana Vata, which governs neuroendocrine coordination. Through hypothalamic influence, it may restore HPO axis rhythm and improve cerebral circulation. Reduction of oxidative stress and improved ovarian blood supply may prevent follicular depletion. Thus, Nasya serve as a supportive therapy in improving AMH levels and fertility outcomes. (indirectly supports folliculogenesis). However, controlled clinical studies are required to establish statistical significance and standardized treatment protocols.

CONCLUSION

Nasya Karma holds potential as a non-invasive Ayurvedic modality in managing diminished ovarian reserve. Ayurveda provides a holistic understanding of this condition through the concepts of Beeja Kshaya and Artava Kshaya. Through neuroendocrine regulation, Vata pacification, and srotoshodhana mechanisms, that contribute to improvement in AMH levels and overall ovarian health. Further clinical trials are required to validate these conceptual findings.

REFERENCES

1. R.K. Sharma and Bhagwan Das. Charaka Samhita (text with English translation & critical exposition based on Chakrapani Dutta Ayurveda Dipika), Varanasi (India), Chaukhambha Sanskrit Series office, Reprint 2016, Siddhi Sthana 9/4
2. Ashtanga Hrudayam 20/1; Vidyotini Hindi Commentary; Page.no.172; Chaukhambha Prakasan, Varanasi; Edition: 2011
3. R.K. Sharma and Bhagwan Das. Charaka Samhita (text with English translation & critical exposition based on Chakrapani Dutta Ayurveda Dipika), Varanasi (India), Chaukhambha Sanskrit Series office, Reprint 2016, Sharira sthana 2/34
4. R.K. Sharma and Bhagwan Das. Charaka Samhita (text with English translation & critical exposition based on Chakrapani Dutta Ayurveda Dipika), Varanasi (India), Chaukhambha Sanskrit Series office, Reprint 2016, Sutrasthana 12/8
5. R.K. Sharma and Bhagwan Das. Charaka Samhita (text with English translation & critical exposition based on Chakrapani Dutta Ayurveda Dipika), Varanasi (India), Chaukhambha Sanskrit Series office, Reprint 2016, Vimana sthana 5/27

6. R.K. Sharma and Bhagwan Das. Charaka Samhita (text with English translation & critical exposition based on Chakrapani Dutta Ayurveda Dipika), Varanasi (India), Chaukhambha Sanskrit Series office, Reprint 2016, Sharira sthana 2/34

7. Sushrut Samhita of maharishi Sushrut edited by ayurveda Tattva sandipika Hindi commentary by Kaviraj Ambikadutta shastri; Sharir sthana 2/35, part 1, pg- 21; Chaukhamba Sanskritsansthan, Varanasi, reprint 2016.

8. Hallie Levine – How Stress Can Hurt Your Chances of Having a

Baby <https://www.webmd.com/baby/features/infertility-stress#1>

9. Prof. Radheyshyam Sharma, Dr. Gopesh Mangal, Dr Gunjan Garg. Ayurvediya Panchakarma Chikitsa Vigyan, Jaipur, 2nd Edition, Jagdish Sanskrit Pustakalaya, Chapter 7, p. 246-248.

10. A textbook of Panchakarma, Anup Jain, Nasya Karma, 440

