PROBABLE MODE OF ACTION OF NASYA – AN OVERVIEW

Smita Lokhande¹, Swapnil Patil², Avinash Chogule³, Vishal Patil⁴.
¹Assistant Professor, Dept. of Kayachikista, ²Assistant Professor, Dept. of RognidanAvemVikrutividnyan, ³Associate Professor, Dept. of Rasashastra&BhaishjyaKalpana, ⁴Associate Professor, Dept. of Kriyasharir, ADAMC, Ashta, Dist- Sangli, Maharashtra, India

INTRODUCTION
Nasya is one of the Panchakarma mentioned in Ayurveda. It is a process wherein the drug herbalized oil or liquid medicine is administered through the nostrils. Since nose is the gateway of the head¹, the therapy is highly effective in curing a number of diseases pertaining to the head, if it is performed systematically. The therapy cleanses and opens the channels of the head, thereby improving the process of oxygenation (Prana), which has a direct influence on the functioning of brain². Drug administered through nose mainly acts on olfactory receptors present in superior concha. This therapy is beneficial if done on a regular basis. It keeps the eyes, nose and ear healthy & it also prevents the early graying of hair and bear. Our classical texts have been mentioned various types of Nasya according to different aspects like depending upon drug used, functions, dose etc. Time and dose of drug for administration are important things.

Types of Nasya:
A) ACCORDING TO FUNCTIONS:
1. VirechanNasya (Cleansing nasya): Usually strong drugs are used in the VirechanaNasya karma. It is also called as ShirovirechanaNasya. In Virechan Nasya, forms of drugs used are Kwatha, Choorna, Swarasa, Sneha, Madhu, Saindhva, Aasava, Pitta, Mootra³ etc. These are mixed with the Shirovirechana drugs. Choorna create Vegas simply by keeping it

ABSTRACT
Nose is one among the Panchadnaanendriya, whose functions are not only limited to olfaction and respiration but also considered as a pathway for drug administration. So the drug administered through nose as Nasya reaches to the brain and eliminates the morbid Doshas responsible for producing the disease. Present article shows, actual drug administered in nose how it will probably act on vital points located in brain and also how it will act on organs related to these points e.g. in AshtangaSamgraaha it is explained that Nasa being the entry to Shira, the drug administrated through nostril reaches Shringataka -a SiraMarma by Nasastrotas and spreads in the Brain reaches at a junction place of Netra, Shrotra, Kantha, Siramukhas (opening of the vessels) etc. and remove or detach the morbid Doshas present above supraclavicular region and expel them from The Uttamanga.

Keywords: Nasya, Dnanendriya, Shringatakamaram, Doshas
near the nostril. VirechanaNasya is mainly used to treat Kapha type of diseases such as headaches, heaviness in the head, cold, nasal congestion, inflammation of the nasal mucosa, sinusitis, loss of smell, sticky eyes and hoarseness of voice due to sticky Kapha. Chronic diseases such as cervical lymph adenitis and tumors can also be treated by Pradhaman Nasya. Some skin diseases like ring warm infestation, itching, blebs are easily treated by this type of Nasya karma. Epilepsy, drowsiness, Parkinsonism, greed and lust can be effectively treated by the therapy. Powders such as Brahmi are used in this therapy.

2) SnehanaNasya / BrihmanaNasya (Nutrition Nasya):
In this type form of Nasya drug used is Sneha i.e. Shatavari ghee, medicated milk ,niryas , mamsa rasa etc. This treatment is mainly given in Vata type of disorders. It is beneficial to cure migraine headache, hemicranias, and dryness of voice, constriction of the eyes, defects of the vision, toothache, earache, tinnitus, and difficulty in speech, nervousness, anxiety, fear, dizziness and emptiness. Negative thoughts can be banished by undergoing this treatment. In case of the person is suffering from bursitis, stiffness in the neck, frozen shoulders, dry sinuses and loss of sense of smell, dry nose, BruhanaNasya would be the best bet. It imparts strength to neck, shoulder, and chest.

3) Shaman Nasya (Sedative Nasya): In this type of Nasya, form of the drugs used are Sneha, Swarasa, Ksheera, Udaka, Kwath, tail etc. ShamanNasya is used according to Dosha which is aggravated in the human body. It is mainly administered to treat Pittaj & Raktaj-type disorders such as thinning of hair, conjunctivitis, ringing in the ears, premature wrinkles, premature graying of hairs, hair fall, blackish discoloration of face, psoriasis of scalp, bleeding from nose etc.

B) ACCORDING TO QUANTITY OF DRUG USED –
1) MarshyaNasya (Ghee or Oil Nasya):
This type of MarshyaNasya karma makes use of ghee/oil. The therapy is administered for a particular reason, which may not be disease, but a condition of uneasiness arising from particular diseases.

Contraindications: Marsha nasya is contraindicated before the age of 7 years & after age of 80 yrs.

Quantity of the unctuous medicine in Marsha Nasya:
- Uttamamaatra ----------- 10 bindu,
- Madhyamaatra ------- 8 bindu,
- Hrswamaatra ----------- 6 bindu

2) Pratimarshya (Daily Oil Nasya):
This type of therapy is administered by dipping the clean little finger in ghee or oil and inserting into each nostril. After inserting the clean finger (dipped in ghee or oil) into the nostril, the nasal passage is lubricated and given a gentle massage. By doing this, the deep nasal tissues are opened up. By doing Pratimarshya on a regular basis, stress can be released to a great extent. Generally it can be given in weak persons, in old age, child, in delicate persons, timid persons etc. It can be administered in unseasonable time. It is also given in persons who had injury to chest, dryness of oral cavity. Pratimarsha can be administered in unseasonable time, inauspicious day and rainy season and also from birth to death.

CONTRAINDICATIONS:
PratimarshaNasya cannot be given in chronic catarrha, Worm infestation and diseases of head involving multiple doshas, One who drank alcohol (madyapee-
ta) weakness of the hearing organ and when Doshas are in highly aggravated state.

**Dose of Pratimarshanasya medicine:**
Thaila is the best Sneha (unctuous substance) for the daily use as head is the main seat of Kapha Dosha. Administering the Pratimarshanasya daily gives us the effect same as that of Marsha nasya, but they are not the same.

**Dose**\(^1^) : 1 – 2 bindu.

C) Different types of the Nasya karma depending on the preparation of the drug:

1) **Avapeedanasya**\(^2^) - Virechana or Shama-na nasya:
   Where the paste of the drug is squeezed into the nostril is called Avapeedanasya. It is indicated in Vitiation of Kapha and Meda, A person who is unconscious due to snake bite. If person is weak i.e. Ksheena purusha and Rakta-pitta rogi - drugs like Sharkara, Ikshuras, Milk, Ghee and Mamsa rasa are used for the Avapeedanasya. In case of Krishna, durbala, bheeru, sukumara, stree, the unctuous substance processed with Shi-rovirechana drugs or the kalka of the Shi-ro-virechana drug are used for the Avapeedanasya.

2) **Pradhamananasya**\(^3^) : Shrsruta stated that,Shirovirechana drug is powdered and sprayed into the nasal orifice with the help of a tube. Pradhamananasya is indicated in cases of derangement of the mind (chetanavikriti), worm infestation (krimi), and poisoning (vishapeedita).

**Dose of PradhamanaNasya:** The quantity of powder required to reach the throat when blown through a 6 angula long pipe is the quantity for Pradhamananasya. This can be repeated multiple times depending on the intensity of the drug snuffed in nasal passage\(^4^).

3) **NavanaNasya**\(^5^) : Decoctions and medicated oils are used for Nasya. This type of therapy is used in Vata-Pitta or Kapha-Pitta disorders. The main purpose of all Nasyas is to expel the Kapha Dosha from the head. So all Nasyas are called as VirechanaNasya.

**The unctuous substance used for Nasya according to the Doshas**\(^6^):
- In Vatakaphaj - Thaila
- In kevalavata - Vasaa
- In pitta - Ghee
- In vaata pitta - Majja

**Contraindications for Nasya**\(^7^):
After taking food, unctuous substance, alcohol, water nasya is contraindicated. If there is Garavisha in his body, After taken and want to take head bath, after bloodletting, who has urge for passing urine, stools etc, who is suffering from injuries, Immediately after vanama, virechana, basti, In Pregnant lady, First 45 days after delivery, in Acute coryza, In Breathing difficulty, cough, in Amenorrhea, on inauspicious day nasya karma is contra indicated.

**Probable mode of action:**
**Modern anatomical and physiological aspect of Nose**\(^8^):
The nose is connected through vascular system, nerve plexus of olfactory nerve and ophthalmic and maxillary branches of trigeminal nerves to the brain.

1. **NEUROLOGICAL PATHWAY:**
   It is concerned with olfactory stimuli. The olfactory nerve differs from other cranial nerves in its close relation with the brain. The peripheral olfactory nerves are chemoreceptor in nature. The olfactory nerves are connected with the higher centers of brain i.e. limbic system, consisting mainly of amygdaloid complex, hypothalamus, epitheliums, anterior thalamic nuclei parts of basal ganglia etc. so the drugs administered...
through nose stimulate the higher centers of brain which shows action on regulation of endocrine and nervous system functions.

So Hypothalamus regulates:
1. a. Regulates contraction of smooth and cardiac muscles secretions of many glands.
   b. It is a major regulator of visceral activities includes heart rate, movement of food through the gastrointestinal tract and contraction of bladder.

2. Regulation of hormone synthesis:-
   a) Responsible for integrating the functions of the endocrine system and the nervous system.
   b) It is known to have direct nerve connection with the posterior lobe of pituitary.
   c) In addition hypothalamus is connected with anterior lobe of pituitary through portal vessels which supply blood to the gland conveying chemical messages through inhibitory and releasing hormone.

3. Regulation of emotional and behavioral patterns:
   a) Together with limbic system participate in expression of rage, aggression, pain, pleasure and behavioral pattern relating to sexual arousal etc.
   b) Regulation of eating and drinking through the arcuate and paraventricular nuclei and thirst centre thus regulating osmotic pressure.

4. Regulates body temperature:
5. Regulation of circadian rhythm and states of consciousness
6. Effects of stimulating the amygdaloidal – same as hypothalamus.
7. Epitheliums consisting of pineal gland and habenular nuclei- Pineal gland is a part of endocrine system, secreting melatonin and also contributes to the setting of the body’s biological clock.
8. Habenular nuclei – involved in olfaction, especially emotional responses to odors.
9. Sub thalamus – contain the sub thalamus nuclei and portions of the red nucleus and the substantianigra. These regions communicate with the basal ganglia help to control body movements.

The drug administrated even enters into the systemic circulation and also direct pooling into the intracranial region by vascular path.

2. DIFFUSION OF THE DRUG:
   Lipid soluble substances have greater affinity for passive absorption through the cell walls of nasal mucosa. “The cilia of the olfactory cells and perhaps the portions of the body of the olfactory cells contain relatively large quantities of lipid materials.”

Non-polar hydrophobic molecules diffuse through the lipid bilayer of the plasma membrane, into and out of cells. Such molecules include oxygen, carbon dioxide and nitrogen gases; fatty acids, steroids, and fat soluble vitamins. It is a route of absorption of some nutrients and excretion of waste by body cells which are lipid soluble. Further drug absorption can also be enhanced by local massage and fomentation.

VASCULAR PATH: Vascular path transportation is possible through the pooling of nasal venous blood into the facial vein, which naturally occurs, at the opposite entrance, the inferior ophthalmic vein also pool into the facial vein. “The facial vein has no valves. It communicates freely with the intracranial circulation, not only at its commencement but also by the supra orbital veins which are connected with the ophthalmic vein, a tributary of the deep facial vein, which communicates through the pter-
ygoid plexus with the cavernous venous sinus."19 Such a pooling of blood from nasal veins to venous sinuses of the brain is more likely to occur in head lowering position due to gravity, the absorption of drug into meanings and related intracranial organ is a point of consideration.

CONCLUSION

Nasya kala i.e. proper time and duration of drug administration is important factor. Age, Dosh avastha, vyadhiavastha, Form of drug used is also important factor in Nasya karma. Keeping in the view of the above said facts, it can be concluded that either the essence of Nasya or Nasyadravya is reaching the brain and acting on important centers controlling different neurological, endocrine and circulatory functions and thus showing systemic effects. Following things should be considered in case of drug used. PH & osmolarity & concentration of drug used are important factors for absorption of drug through nasal passage. Bioavailability can be affected by concentration of drugs like Salt, honey etc. Various delivery systems affect the site of deposition, degree of absorption. Viscosity increases the contact time between nasal mucosa & drug, which enhances the potential of the drug action. In mechanism of drug absorption, Transcellular passive diffusion, Drug diffuses through membrane. It is an active transport process. More suitable for lipophilic drug, snehanasya may absorb through this process. Para cellular passive diffusion- drug is transported between the cells and transcytosis by vesicle carrier. It is a suitable mechanism for hydrophilic drugs e.g. avpeedak, dudhhs & kwathnasya.

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CORRESPONDING AUTHOR
Dr. Swapnil Sabgonda Patil
‘Padmini’ house no. 2079, near R.P. Patil high school, Kupwad, Sangli, Maharashtra, India
Email: vdsnapnilpatil@gmail.com

Source of support: Nil
Conflict of interest: None Declared