Nasya Karma in Visha Chikitsaa: An emergency drug-delivery system

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ABSTRACT

Poisoning is always an emergency condition that doctor has to handle diligently and cautiously. Nasya karma (NK)- drug delivery through nasal passage is considered to be the best one among all the panchkarmas for all urdhwajatrugata (Organs above the adam’s apple) diseases. According to its practical application with minimum requirements, its accessibility is comparatively easier. From 2016, CCIM has declared Agadatantra as a clinical subject. Agadatantra is the ayurvedic toxicological science which deals with the study of signs and symptoms of different types of poisons and its management. Among the twenty-four treatment modalities of vishachikitsa, nasya is one. But practice application of drugs which are used for NK in poisoned cases were not available at first hand. Objective: to present relevant data available in all the major classics of Ayurveda collectively regarding NK in poisoning, its procedural applicability in detail.

Discussion: From the available data, it is observed that there are ample drugs and agadas (anti toxic drugs) are mentioned for the NK in different types of poisoning. Almost in all types i.e. in Sthaavara (inanimate-plants, minerals, metals) and animate poisons (snakes, scorpions, etc.) NK is indicated as a first aid treatment. So, this article may prove much helpful to researchers, UG, PG, scholars and scientist fraternity for innovative way of fast acting drug delivery system. Some latest researches are also mentioned supportive of the research question. Conclusion: one is able to establish the significance, use and procedures of Nasya in poisoning cases.

Keywords: Aagadatantra, Vishachikitsa, Nasyakarma, Antitoxic drugs.

INTRODUCTION

The concept of targeted drug delivery system has been originated from the perception of Paul Ehrlich, who proposed delivery of drug to be as a ‘Magic Bullet’ [1]. Nasal cavity has a large surface area and highly vascularized mucosa. Drugs are absorbed by the rich network of blood vessels and are passed through systemic circulation; thus, it avoids first pass metabolism. Despite the potential of the nasal route, a number of factors limit the intranasal absorption of drugs, especially the proteins and peptide drugs, these factors are the mucus and epithelial barrier, mucociliary clearance and enzymatic activity. Rapid mucociliary clearance of drug formulations that are administered through the nasal cavity is thought to be an important factor for the low bioavailability of drugs administered intranasally. Increasing the residence time of the drug formulation in the nasal cavity and thus prolonging the period of contact with the nasal mucosa may improve the drug absorption. The intranasal route of administration will probably have great future scope for the development of peptide preparations and other drugs those administered parenterally. Surface modification technology can be used as an excellent formulation strategy for nose to brain drug delivery.

Out of all types of Panchakarma, Nasya Karma is the best therapy for Urddhvjatragata Roga and especially Naasaagata Roga according to all Aayurvedic scholars and ancient literatures. Without Nasya karma, it is not possible to eliminate the vitiated Dosha, which are situated in Shira or Naasaa Pradesh [2]. “Nasya” becomes prime therapy for maintaining the health of “Urdhvjatru” region, because it is the only Karma, which finds a place in simple routine references like “Dinacharya” and also within the most sophisticated places like “Panchakarma”.

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DESCRIPTION OF NAASAA

As per its etymology, the word ‘Naasaa’ is derived from the root word “Nastru” which means “the only gateway to head”. The Ayurvedic classics explained Naasaa as the only route to the head. Therefore, a lot of medications are advised to be introduced through nose, which can influence the head directly, especially in unconscious conditions as well as in fatal emergency conditions like Sanyaasa, Murchchhao, Sarpodamsha etc. [3]

Historical Background of Naasya Karma – A review

Since ancient times, India is very well known worldwide for its splendid civilization (culture) which had its own system of medicine i.e. Ayurveda. It is difficult to find its root; but glimpses point that, Indian culture origins from Vedic time. Therefore, we find the references of Naasaa (Nose) as an Indriya in ancient classic literature, like Yajurveda, Atharvaveda and Bhagawata Geeta.

Although it is very difficult to say that the procedure of Naasya Karma therapy was in practice during Vedic period. But a few Mantras of Rigveda indirectly refer towards the Karmas which are included under Panchakarma measures. There is a Mantra of Rigveda, in which eradication of diseases through the above mentioned routes probably refers towards Naasya Karma or Shirovirechana. However, the term “Naasya” has been used many times in Krishna Yajurveda, Shatapatha Braahmana & Upnishada.

In Bauddha period, there are some Jaataka stories about the famous Vaidya “Jeevaka”, who has reportedly utilizedNaasya Karma several times such as – Naasya of medicated Ghritafor the treatment of Shirah Shoola and Naasya of Virechana Aushadha to Lord Buddha as well. The same reference about Naasya of Virechana Aushadha is mentioned in Vinaya Pitaka as well.

Even in Vaalmiki Raamaayana, the famous reference regarding use of the herb “Sanjeevani” mentions the use of Naasya Karma. The drug “Sanjeevani” was blew by Sushena in the nose of Lakshmana to make him conscious.

After Bauddha Kaala, Ayurvedic Classiclike Charaka Samhitaa, Sushruta Samhitaa and Ashtaanga Hridaya became famous, wherethe subject of Naasya Karma therapy is elaborately described. In Samhitaa period, the specification in Naasya Karma had reached to such an extent of perfection that it was being used not only for the treatment of adult humans but also for the fetal health [3].

Etymology according to Vaachaspatyam

The literary meaning of the word “Nasya” is “being in the nose” or “the things beneficial to the Nose”. Vaachaspatyam also derives the word ‘Nastah’ which means “beneficial for the nose”.

Definition of Nasya: As stated by Sushruta, administration of medicines or medicated oils through the nose is known as a Nasya Karma.

Synonyms: Shirovirechana, Shirovireka, Murdhavirechana, Nastah Karma, Naavana are the synonyms of Nasya Karma.

Table of classification of Nasya according to various Aachaarya

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Name of Aachaarya</th>
<th>No.</th>
<th>Reference</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Charaka</td>
<td>3</td>
<td>Ch.Si. 9/89,92 Ch.Vl. 8/154</td>
<td>According to mode of action – Rechana, Tarpana, Shamana</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5</td>
<td></td>
<td>#According to the method of administration – Naavana, Avapidan, Dhmaapana, Dhuama, Pratimarsha</td>
</tr>
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<td></td>
<td></td>
<td>7</td>
<td></td>
<td>According to various parts of drugs utilized – Phala, Patra, Mula, Kanda, Pushpa, Niryao, Twak</td>
</tr>
<tr>
<td>2</td>
<td>Sushruta</td>
<td>5</td>
<td>Su.Chi.40/21</td>
<td>Shirovirechana, Pradhamana, Avapida, Nasya, Pratimarsha</td>
</tr>
<tr>
<td>3</td>
<td>Vaaghbata</td>
<td>3</td>
<td>A.H.Su.20</td>
<td>Virechana, Brimhana, Shamana</td>
</tr>
<tr>
<td>4</td>
<td>Kaashyapa</td>
<td>2</td>
<td>Ka.Si. 2 &amp; 4</td>
<td>Brimhana, Karshana</td>
</tr>
<tr>
<td>5</td>
<td>Shaarangadhara</td>
<td>2</td>
<td>Sha.Utt.8/2,11,24</td>
<td>Rechana, Snehana</td>
</tr>
<tr>
<td>6</td>
<td>Dalhana</td>
<td>2</td>
<td>Su. Cho.</td>
<td>Praayogika, Snaihika</td>
</tr>
<tr>
<td>7</td>
<td>Videha</td>
<td>3</td>
<td>40/31</td>
<td>Sanyaa Prabodhaka, Stambhaka</td>
</tr>
</tbody>
</table>

Charaka’s Classification of Nasya

According to Aachaarya Charaka, Nasya is of five types viz. Naavana, Avapida, Dhmaapana, Dhuama and Pratimarsha [7]. Naavana is further divided into Snehana and Shodhana; Avapidana into Shodhana and Stambhana; Dhuama into Praayogika, Vairechanka and Snaihika; while Pratimarsha is divided into Snehana and Shodhana.

The above mentioned five types of Nasya are regrouped according to their pharmacological action into three groups viz. – Rechana, Tarpana and Shamana [8].

Charaka Samhitaa has also mentioned 7 types of Nasya according to parts of the drugs to be used in Naasya Karma viz – Phala, Patra, Mula,
It is clear from the above description that, two types of classification of Nasya Karma are available in Ayurvedic literature:

One is based on the pharmacological actions viz. Rechana, Tarpana, Shamana.

Other is based on the preparation of drug and the method of its application. e.g. - Dhamaapan (Powder is blown), Avapida (Extracted juice is used), Dhuma (Smoking through nose) etc.

Nasya Karma has been mentioned as a treatment modality in Visha Chikitsa. In this perspective, Nasya can be defined as the procedure in which the medication given through the nasal route removes the poison as well as the vitiated Dosha from the head and neck region. It also stimulates the centers in the brain which are affected by the Madakaari Guna of Visha and helps to regain the consciousness of the patient immediately.

Therefore, in the context of Visha Chikitsa (Treatment of Poisoning), the following three types of Nasya are more important -

1) **Avapida Nasya**- The word Avapida means the juice expressed from leaves or paste (Kalka) of required medicine (Chakrapani). (Sha. Utt. 8/12) - method of Avapida nasya

   **Rationale:** Avapida Nasya is specifically indicated in Vishaahighbhaata.

   **Drugs:** For Shodhana purpose, Kalka of Tikshna Dravya like Saindhava, Pippali etc. has been mentioned as Avapida Nasya.

   **Dose:** Like Shirovirechana, Avapida Nasya should be given in the following dose –
   - Hina Maatraa - 4 drops
   - Madhyama Maatraa - 6 drops
   - Uttama Maatraa - 8 drops

2) **Dhamaapan Nasya**- Dhamaapan or Pradhamana is specifically a Shodhana Nasya.

   **Definition:** This type of Nasya is instilled using medicated Churna (Powder) for Shirovirechana. It is mentioned as Dhamaapan in Charaka Samhitaa and Pradhamana in Sushruta Samhitaa.

   **Rationale:** Pradhamana is described on the 13th rank among the Chaturvinshati Upakrama used for the treatment of poisoning.

   **Principle:** When the medicated powder is blown into the nose, it gets spread through the respiratory passage into the body, by which the spreading of poison is reduced and this is one of the preventive measures to reduce spread of poison.

   **Drugs:** The powders of medicines like Katukaa, Katabhi, Katphala should be blown up into the persons nostrils to reduce the spreading of the poison.

   **Method:** In Pradhamana Nasya, Churna (Powder of drugs) is administered (Inhaled) by Nasal passage with the help of Naadi Yantra (6 Angula Naadi, open ended on both sides). The Churna (Fine powder) of required drug is kept at one end and air is blown from the other end, so that the medicine could enter into the nostrils.

3) **Dhoomapaana** – Dhooma means medicated smoke, while Dhoomapaana means inhaling the medicated smoke through nostrils.

   **Principle:** Fumes or smoke arising from anti-toxic materials are used for detoxification. This anti-toxic medicated smoke enters the body & clears all the channels (Stratasa)of circulation from all kinds of obstructions. On entering the body, this fume also nullifies the toxic effect of the poison.

   **Rationale:** Dhooma is described on the 17th rank among the Chaturvinshati Upakrama used for the treatment of poisoning.

   **Dhuma Nasya:** It is defined as the medicated fume taken by nasal route and eliminated by oral route. Aachaarya Sushruta hasn’t described it as a type of Nasya. The smoking per mouth is known as Doomapaana and is not included in Nasya. It is harmful to the eye sight.

   **Drugs:** For Praayogika Dhuma, drugs like Priyangu, Ushira etc. should be used.

   **For Snaihika Dhuma, drugs like Vaasaa, Ghrita etc. should be used.**

   **For Vairechanika Dhuma, drugs like Aparaajitaa, Apaamaarga etc. should be used.**

**INDICATIONS OF NASYA (Nasal medication) IN POISONING**

In the cases of poisoning, various herbal drugs or drug formulations have...
be prescribed for use through nasal route in Ayurvedic texts. Moreover, the Nasya Karma has been indicated in many different types of poisoning conditions. It can be observed from the textual illustrations given as follows.

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Drugs/Formulation used for Nasya</th>
<th>Indication</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Mrutasanjeevana Agada [14]</td>
<td>In all types of poisoning</td>
</tr>
<tr>
<td>2</td>
<td>Shirishapushpa Yoga [14]</td>
<td>Sarpa Damsha (Snake Bite)</td>
</tr>
<tr>
<td>3</td>
<td>Parama Agada [14]</td>
<td>Poisoning by Vishambhara etc. (An insect)</td>
</tr>
<tr>
<td>4</td>
<td>Kshaaroagada [15]</td>
<td>In all types of poisoning</td>
</tr>
<tr>
<td>5</td>
<td>Moolo (Roots) of Bandhujeeva,Bhaaroangi and Krushna Tulas [16]</td>
<td>Shirogata Visha (When effect of poison is seen in head), Unconsciousness due to Visha</td>
</tr>
<tr>
<td>6</td>
<td>Powder of Pippali, Hingu, Vrishchikadi, Manashila, Shirishabeeja, Apamaaro, Lavana [19]</td>
<td>Shirogata Visha (When effect of poison is seen in head), Unconsciousness due to Visha</td>
</tr>
<tr>
<td>7</td>
<td>Pippali, Kshavaka, Ativisha and Maricha [23]</td>
<td>Shirogata Visha (When effect of poison is seen in head)</td>
</tr>
<tr>
<td>8</td>
<td>Kaakaanda and Shirisha Patra Swarasa [22]</td>
<td>In 5th Vega of Sthaavara Visha</td>
</tr>
<tr>
<td>9</td>
<td>Nasya [22]</td>
<td>Darveekara Sarpa Damsha (in 3rd Vega)</td>
</tr>
<tr>
<td>10</td>
<td>Tikshna Avapida Nasya [23]</td>
<td>Darveekara Sarpa Damsha (in 7th Vega)</td>
</tr>
<tr>
<td>12</td>
<td>Vaartaao, Beejapura, Jyotishmati etc. [25]</td>
<td>When obstruction occurs in nose, eye, ear, tongue and throat due to poisoning</td>
</tr>
<tr>
<td>13</td>
<td>Tikshna Pradhama Nasya using Churna (Powdered drugs) [26]</td>
<td>When the person is unconscious due to poisoning</td>
</tr>
<tr>
<td>14</td>
<td>Shyaamoa, Tavaghala, Faninjaka, Shirisha grinded with Vaartaao juice or Sarpi Manda [27]</td>
<td>In Lootaa poisoning</td>
</tr>
<tr>
<td>15</td>
<td>Shirsha Phala Soara [29]</td>
<td>In Mushaka Visha</td>
</tr>
<tr>
<td>16</td>
<td>Kutajaadi Pradhama Nasya [23]</td>
<td>Vrishchika, Unduru, Lootaa, Sarpa, Gara Visha</td>
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</tbody>
</table>

Administration of Nasya

The procedure of giving Nasya therapy may be classified into the following three headings:

1) Purva Karma (Pre-measures): Before giving Nasya, prior arrangement of the materials and equipments should be done. There should be a special room “Nasya Bhavana” free from atmospheric effects like direct blow of air and dust etc. and with appropriate light arrangement [29]. Following articles should be collected before Nasya. (i) Nasya Aasaná- (a) A chair for sitting. (b) A cot for lying. (ii) Nasya Aushadha- Drugs required for induction and management of Shirovirechana should be collected in the form of Kalka, Churna, Kwaatha, Kshira, Udaka, Sneha, Aasava, Dhuma etc. in sufficient quantity. (iii) Nasya Yantra- For Snehana, Avapida, Marsha and Pratimashra Nasya, there should be a dropper or Pichu. For Pradhama Nasya, 6 Angula Naadi and specific Dhumayantra for Dhuma Nasya are required. Besides these, one needs efficient assistant, dressing material, spitting pots, bowl, napkins and towels also.

2) Pradaama Karma (Nasya therapy): As described by the Bruhatratriy (3 Major Aachaarya), the following procedure should be adopted for performing the Nasya Karma [31].

Patient should lie down in supine position with ease on Nasya table. Shira (Head) should be “Pralambita” (Lowering or head down position) and feet slightly raised. Head should not be excessively flexed or extended. If the head is not lowered, the nasal medication may not reach to the desired distinction and if it is lowered too much, there may be the danger of getting the medication to be lodged in brain. After covering the eyes with clean cotton cloth, the physician should raise the tip of the patient’s nose with his left thumb and with the right hand, lukewarm medicine (Sukhoshna Aushadha) should be dropped in both the nostrils alternately in proper way [19].

The drug should neither be less nor more in the dose, it should be in the proper quantity. It should neither be very hot nor very cold i.e. it should be lukewarm. The patient should remain relaxed while taking Nasya. He should avoid speech, anger, sneezing, laughing and shaking of head during Nasya Karma [31].

3) Paschaata Karma (Post measures) [34] - After administration of medication through nasal passage, patient should lie supine (Uttana) for about 2 minutes time interval & he should be asked to count the numbers up to 100. After administration of Nasya, feet, shoulders, palms and ears should be massaged [29]. The head, neck and cheeks should again be subjected to sudation. If possible, sniffing of Rasna churna should be done for Vaata Prashamana.

Mode of action of Nasya Karma

A clear description regarding the mode of action of Nasya Karma is not available in Ayurvedic classics. According to Aachaarya Charaka, Naasaa is the gateway of Shira. The drug administered through nose as Nasya reaches the brain & eliminates the morbid Doshra responsible for producing the disease.

According to Ashtanga Sangraha, Naasaa being the gateway to Shira, the drug administered through nostrils reaches Shringaataka (A Siraa Marma) by Naasaa Srotas. It spreads in the Murdhaa (Brain), Netra (Eyes), Shrotar (Ears), Kanthha (Throat), Siraamukha (Opening of the vessels, etc.) and scratches the morbid Doshra in supra-clavicular region, finally expelling them out from Uttamaanga [34].

Aachaarya Sushruta has clarified Shringaataka Marma as a Siraa Marma formed by the union of Siraa (Blood vessels) supplying to nose, ears, eyes & tongue. He further points out that injury to this marma will be immediately fatal [37]. Indu, in his commentary on Ashtaanga Sangraha, has opined Shringaataka as the inner side of middle part of the head i.e. Shirasa Antarmadhyaam.

According to all prominent Aachaarya, Naasaa is said to be the gateway of Shira. It doesn’t mean any channel which connects directly to the
CONCLUSION

Nasya Karma, being an important measure in Visha Chikitsa, has been broadly mentioned in 24 treatment modalities by Aacharya Charaka. It can be observed that Nasya Karma is not mentioned only as a single method, but three different types of Nasya Karma have been indicated for this purpose, namely Apavidya Nasya, Dhmaapana Nasya and Dhum Nasya. This is only because of the great utility of Nasya Upakraama in the cases of poisoning.

Even though such a wide range of treatment options have been suggested in the cases of poisoning; however, every treatment modality out of the 24, cannot be used in all the types of poisons. Other treatments like Varnaana (Emesis) or Virechana (Purgation) have been indicated in some types of poisoning, while they are contraindicated in certain other conditions. However, Nasya Karma is one such treatment method, which has been indicated in almost all the different types of poisoning viz. inanimate poisons as well as animate poisons like Sarpa Damsha, Mooshaka Visha, Lootaa Visha, Vishvambhara insect bites, as well as the Kritrima Visha i.e. Gara Visha. This shows the importance of Nasya Karma in Visha Chikitsa.

The Nasya Karma has been specifically indicated, when the poison reaches the head region (Shirogata Visha). As the medicines administered through Nasya directly enter the central nervous system, this treatment modality can be aptly used in such emergency medical conditions. The administration of Nasya doesn’t need any specific pre-therapeutic measures like Snehana (Oleation) or Swedana (Sudation) etc. which are compulsory before other starting other treatments like Varna or Virechana. This makes it more suitable for its use in the emergency cases of poisoning.

Moreover, the utilization of Nasya Karma has been observed right since the Vedic period and this extensive tradition of Nasya Karma gives lots of confidence about its safety and efficacy. Even certain researches in modern medical science have proved its utility, but still there is a greater need to explore and utilize this treatment option in a more scientific manner.

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