



# NASAL DOSAGE FORMS MENTIONED IN UNANI MEDICINE FOR NEUROLOGICAL DISORDERS

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## Abstract

Unani Medicine is centuries old time tested system of medicine practiced in different parts of world. Mostly drugs used in this system are of herbal origin and there is a number of different dosage forms mentioned in classical manuscripts of Unani Medicine. Nowadays some of these dosage forms are not used quite often, Nasal Dosage forms are one such kind. There are a number of Nasal dosage forms mentioned in classical unani texts but are not used in this modern era, the nasal dosage forms are very effective particularly for neurological disorders because it is believed that in this dosage the amount of drug used are minimal but the absorption is large and these drugs directly reach brain via vascular course bypassing blood brain barrier. Also drugs used in unani medicine for nasal forms are nervine tonic and stimulant as found by modern scientific studies. This paper aims at discussing various nasal dosage forms

available in unani medicine for nervous system related disorders and there importance in alleviating diseases of neurological origin.

**Key words:** Nasal drops; Dosage forms; Nervous system; Unani Medicine

## Introduction

Owing to recent advances on medical science and overall increase in health care facilities to general people across the globe, the life expectancy has increased. This means a number of individuals across the world are living in senescence age group. Because of this, the burden of neurological disorders is speedily increasing, laying a challenge to the health systems.<sup>1,2,3</sup> It is also believed that there is an increasing contribution of non-communicable and injury-related neurological disorders to the overall disease burden in India.<sup>1</sup> Neurological disorders, both fatal and non-fatal, are among the leading contributors to the burden of non-communicable and communicable diseases in India.<sup>4</sup> The biggest contributors to the neurological disorder in India and across globe were stroke followed by headache disorders, epilepsy cerebral palsy in India etc.<sup>1</sup> After an initial period of recovery, human neurological injury has long been thought to be static. In order to improve quality of life for those suffering from stroke, spinal cord injury, or traumatic brain injury etc. researchers have been working to restore the nervous system and reduce neurological deficits through a number of mechanisms. In modern times, as a part of management multi-modal therapies are considered as necessary to facilitate a truly robust recovery, which is achieved through neurorehabilitation.<sup>6</sup> Basically rehabilitation in general and Neurological rehabilitation in particular deals with the diagnosis, treatment and prevention of disease as well as the improvement of human quality of life by physical means, intronmitting interventions, massage, exercise, etc., oftentimes with electrical and mechanical instruments. These physical therapies are considered effective because in the subsisting body, cells and tissues are invariably subject to forces and stresses, which have various origins from various internal and external forces. These forces usually modify cellular behaviors. Used properly, these techniques and their vigor may also be used for therapeutic purposes in medicine including Neurological diseases.<sup>7</sup> Stroke recovery, Cerebral Palsy, Parkinson's disease, Brain Injury, Post- Polio Syndrome are the

common conditions which interfere the function of nervous system either by loss of sensory or motor functions, consequently causing debility and functional impairment in the patients. <sup>6,8</sup>

The expression of neuro-rehabilitation has changed in recent years. Traditional neuro-rehabilitation programs have limited efficacy in most patients with common neurological diseases, such as stroke, Parkinson's disease, spinal cord injury, severe brain injury, spasticity etc. New technologies have been described to increase the effectiveness of rehabilitation strategies in these conditions. But they are costly and not easily available in underdeveloped and developing countries. <sup>9</sup>

For the management of Neurological diseases In Unani medicine the concept of treatment is Tanqia and Ta'deel. Tanqia, the first step in the treatment of almost all Neurological diseases, is performed by employing Munzij and Mushile Balgham drugs and Ta'deel, the second step, is achieved by the institution of various compound drug preparations along with a range of regimental procedures e.g. Inkebab (Vaporization), Dalak (Massage), Hijamat (Cupping), Hammam (Medicated Hot Bath). Most of these regimental procedures usually use par-enteral (external) route of drug administration. <sup>10,11,12,13</sup> One of the important par-enteral routes of drug administration is through nasal mucosa. Since nasal mucosa is highly vascular and there is direct absorption of drugs takes place which may directly reach brain after bypassing blood brain barrier may affect there. <sup>14</sup> There are quite a few nasal dosage forms mentioned in unani system of medicine for treatment of Neurological diseases which are discussed here.

### **Advantages of Nasal Dosage forms**

1. A particle that is used as depositaries on the nasal mucosa might exert a local effect and/or be absorbed into the blood stream. Absorption is facilitated by a highly vascularized, large surface area with relatively low enzymatic activity. Since blood leaving the nasal cavity bypasses the liver, first pass hepatic metabolism can be avoided, making the nose a suitable target for drugs with low oral bioavailability. <sup>15</sup>

2. The vascular-rich turbinates lend themselves to systemic drug delivery. Absorption in the nose can be rapid, and allows some molecules to achieve a greater bioavailability compared to oral administration.<sup>16</sup>
3. Nasal delivery also offers the opportunity to bypass the blood–brain barrier and deliver drugs directly to the central nervous system. This barrier prevents systemically delivered drugs, whether delivered orally, intravenously, or by other routes, from reaching significant concentrations in the brain. Two cranial nerves, the olfactory nerve and the trigeminal nerve, pass through the nasal cavity<sup>15</sup>

### Common nasal dosage forms in Unani Medicine

#### 1. Saoot (Nasal Drops)

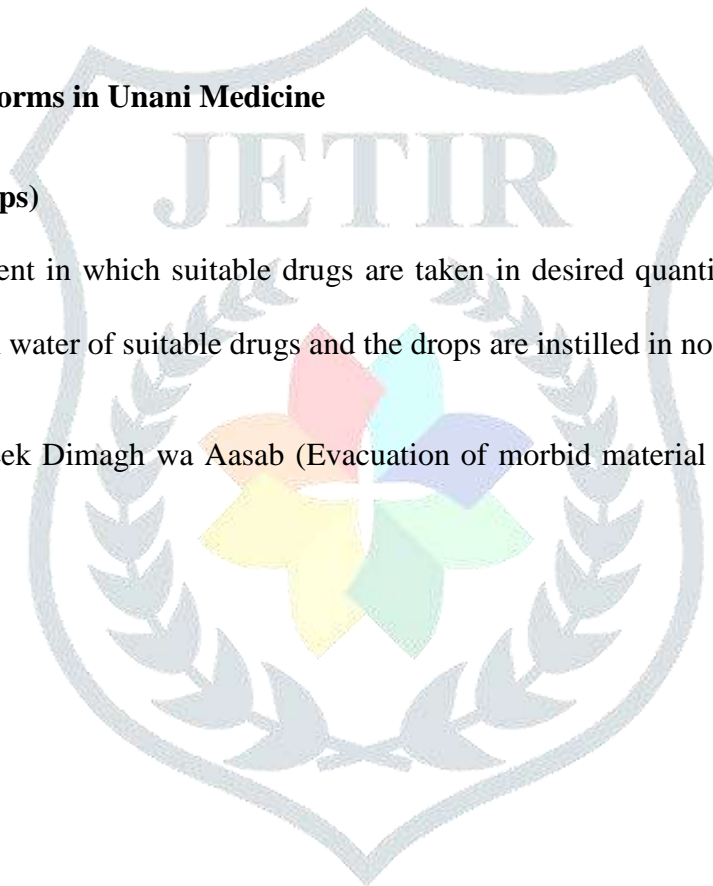
This is a type of treatment in which suitable drugs are taken in desired quantity, pounded finely and mixed with a Distill water of suitable drugs and the drops are instilled in nose. (Fig 1)

**Aim:** Tanqiya wa Tahreek Dimagh wa Aasab (Evacuation of morbid material and stimulation of nerves and brain)<sup>10,12,19</sup>

#### Common Drugs<sup>10,12,19</sup>

- Kundush
- Aqarqarha
- Jundbaidastar
- Sakbeenaj

All the drugs, taken in equal weight, are pounded finely and mixed with Aab Marzanjosh. 3-4 drops are instilled in the nostrils.



**Indications:**

Headache; <sup>10,11,13,17,18</sup>

Migraine; <sup>10,11,13,17,18</sup>

Epilepsy; <sup>10,11,13,17,18</sup>

Stroke/Falij; <sup>10,11,13,17,18</sup>

Facial Palsy/Laqwa <sup>10,11,13,17,18</sup>

Catarrh/Nazla <sup>10,11,13,17,18</sup>



**Figure 1 Saoot**

## 2. Nushooq (Nasal Drops/spray)

This is a type of dosage form is same as of Saoot, but the difference is that patient himself/ herself inhale the droplets of drug as shown in Fig 2.

**Aim:** Tahreek Dimagh, Tabdeel Mizaj <sup>10,12,19</sup>

### Common Drugs <sup>10,12,19</sup>

- Roghan yasmeen 1/2g
- Roghan nargis -- 1/2g
- Roghan sosan --- 1/2 g
- Mushk ----- 1 ratti
- Jundbedastar 1 ratti

### Indications:

Headache <sup>10,11,13,17,18</sup>

Migraine <sup>10,11,13,17,18</sup>

Epilepsy <sup>10,11,13,17,18</sup>

Stroke/Falij <sup>10,11,13,17,18</sup>

Facial Palsy/Laqwa <sup>10,11,13,17,18</sup>

Catarrh/Nazla <sup>10,11,13,17,18</sup>







**Figure 2 Nushooq**

### 3. Shamoom: (Aromatherapy)

It is common and easy to use therapy in which desired drugs are pounded in a mortar and put in a tenuous cloth to be smelled by patient 3-4 times a day

**Aim: Tahreek Dimagh wa Aasab (Nerves and Brainstimulants)**<sup>10,12,19</sup>

#### **Common Drugs**<sup>10,12,19</sup>

Asaroon ----- 5 gms

Ood kham ----- 5 gms

Qaranfal ----- 5 gms

Sumbuluttib----- 5 gms

Heel khurd wa kalan-----7gms

Zafran-----4 gms

Joz bawa-----5 gms

Taj-----7 gms

All the drugs are pounded in amortar and put in a tenuous cloth. Smell 3-4 times a day.

### Indications:

Headache<sup>10,11,13,17,18</sup>

Migraine<sup>10,11,13,17,18</sup>

Epilepsy<sup>10,11,13,17,18</sup>

### 4. Nafookh (Nasal Spray)

In this type of dosage form the desired drugs, are pounded very fine and a low dose of drugs around 20 mg is blown into both nostrils of patient with the help of some straw as shown in figure 3.

**Aim:** Tanqiya wa Tahreek Dimagh wa Aasab<sup>10,12,19</sup>

### Common Drugs<sup>10,12,19</sup>

- Aqarqarha
- Qaranfal
- Qaqla
- Marzanjosh
- Boora armani

All the drugs, taken in equal weight, are pounded finely and 2 ratti (20 mg) blown into both nostrils with the help of a straw.



**Indications:**Headache <sup>10,11,13,17,18</sup>Migraine <sup>10,11,13,17,18</sup>Epilepsy <sup>10,11,13,17,18</sup>Faliij <sup>10,11,13,17,18</sup>Sakta <sup>10,11,13,17,18</sup>**Figure 3 Nafookh****Discussion**

Currently, no marketed drug products exist that act via nose to brain. There are research programs to treat Alzheimer's and Parkinson's diseases, some of which have shown some success <sup>14</sup> The drugs used in above said procedures posses diverse pharmacological actions like nervine stimulant, antioxidant and anti-

inflammatory for eg Pimpinella anisum (Anisoon) has Synaptic plasticity enhancer, Neuroprotective, Anticonvulsant, Amphetamine, Antispasmodic activities,<sup>20,21</sup> Lavandula stoechas (Ustukhuddoos) Spasmolytic effect, Anticonvulsant, Antispasmodic, Reduces hypertonicity<sup>20,21</sup> Paeonia emodi (Ood Saleeb) has Sedative, Anti-inflammatory, and Spasmolytic activity<sup>20</sup>.) Matricaria chamomilla (Baboona) is Anti-inflammatory, and has Spasmolytic effects it also has Sedative, Anxiolytic, Antispasmodic.<sup>20,21</sup>

Given the overall difficulties with treating central nervous disease, nose to brain delivery could offer a promising way to achieve efficacy while minimizing side effects of drugs. Nasally delivering drugs to therapeutic areas of interest can make them more effective for local action, systemic action, and central nervous system action, at lower doses with minimum side effects. However there are certain challenges which need to address before making it a success like approaches to maintain antimicrobial drugs and use of preservatives in these dosage form which need to address before using these dosage form effectively for betterment of patients.

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