

A critical analysis on standardization of *bindu* for *mars'a nasya*

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Abstract:

Nasya, based on the dose of oil used, is classified in to two types, as *Mars'a* and *Pratimars'a*. *Bindu* is the unit of measurement explained for the dose of oil. In routine *Ayurvedic* practice one *Bindu* is considered as one drop (0.05ml) while according to the definition of *Bindu* and standardized quantity mentioned by *S'aaran'gadhara*, it is 0.5ml. Thus the dose of *Mars'a nasya* is such an area where lot of disparity exists. Although the routinely practiced dose is ten times less and instilled only once, this itself have been proved significantly effective by many postgraduate researches. The present paper deals with classical concept of *Bindu* and its standardization for *Mars'a nasya*.

Introduction:

Aayurveda the art and science of living is at the doorstep of global acceptance. Among the various treatment modalities of *Aayurveda*, *Pancakarma* procedures are the ones which are mostly highlighted in the present scenario. Among five purification (*Pancakarma*) procedures, *Nasya* is said to be effective in curing the diseases of *Oordhvajatru* (supraclavicular region). The procedure by which medicine is administered through nasal route is called as *Nasya*.

Nasya is practiced in many clinical conditions in different medicinal forms, such as *Swarasa*, *kalka*, *kwaatha*, *coorna*, *sneha* etc. Among these *Sneha* (oil) is routinely practiced because of its practical feasibility, easy availability and inherent *Kaphahara* property (As. H. Su. 20/33).

Dose is a very important factor in any of the *Pancakarma* procedures to get optimum efficacy of the therapy. Change in dose can change the result and it can lead to side effects or no effect. Because of this reason, on the basis of dose of oil used, *Nasya* is classified in to two types as, *Mars'a* and *Pratimars'a*. *Bindu* is the unit of measurement explained for the dose of oil, *Bindu* is such an area where lot of disparity exists when compared with classical references and routine practice.

Classical concept of *Bindu* in *Nasya*:

In the context of dose of *Sneha nasya* (S. Ci. 40/28) the term *Bindu* was first coined by *Sushruta*: Except *Caraka* all other *Aacaaryas* used the term *Bindu* as the unit of measurement for any medicine in liquid form used for *Nasya*.

Definition of *Bindu*:

Bindu is the unit of measurement and defined as the quantity of *Drava* (*sneha*, *swarasa*, *kashaaya* etc.) that dribbles down when the first two parts of index finger (Patient's) are dipped into it and taken out (As. H. Su. 20/10).

The comment on this by *Hemaadri* proves beyond doubt that not just the first drop is one *Bindu*, but it is the total quantity dribbling down from the index finger when immersed in the liquid should be considered as one *Bindu*.

Yaavatpatati taavaan binduh`, na prathamapatita eva / *Hemaadri* on As. H. Su. 20/10

Bindu pramaana for *Sneha nasya*:

Asht'aangasangraha has first classified *Sneha nasya* in to two types depending on the *Bindu* as, *Mars'a nasya* and *Pratimars'a nasya* (As. Sam. Su. 29/14).

For *Sneha nasya* the term *Mars'a* was first coined by *Asht'aangasangraha*. For *Sneha nasya*, *Caraka* has used the term *Naavana* while *Sushruta* used the

term *Nasya* (S. Ci. 40/22). *Vaagbhat'a* has mentioned three different doses as 10 *Bindu* (*uttama*) 8 *Bindu* (*Madhyama*) & 6 *Bindu* (*Heena*) for *Mars'a nasya* (*Sneha nasya*) depending on the *Dosha* and *Bala* of the patient. (As. Sam. Su. 29/14, As. H. Su. 20/10). *Sushruta* has not classified *Nasya* depend on the dose of *Sneha* used, but has mentioned three different doses for *Sneha nasya*. In *Sushruta samhita* the dose is mentioned as, 8 *Bindu*, *S'ukti* and *Panis'ukti*, which are the *Heena*, *madhyama* and *Uttama maatraa* respectively. *D'alhana* comments that *Heena maatraa* 8 *Bindu* is to be instilled in each nostril. He says that *S'ukti* is 32 *Bindu* and *Panis'ukti* is 64 *Bindu*. Similar opinion is also mentioned by *S'aaran'gdhara* (*S'aa. Utt. 8/25*) *Cakradatta* (*C. D. 73/10*) *Vangasena* (*Vanga 86/15*) and *Bhaavaprakaas'a* (*B. P. Po. kha. 5/213*). *Caraka* has not mentioned specific dose for *Sneha* to be used in *Nasya*. Only for *Anu taila*, *Caraka* mentions the dose as $\frac{1}{2}$ *Pala* (24ml)(*C.Su.5/62*). Except *Caraka*, all other *Aacaaryas* have mentioned *Bindu pramaana* for deciding the dose of *Drava dravya* to be used for *Nasya*.

As from the above explanations it is evident that for *Drava dravya*, *Bindu* is the unit and it is measured by patient's index finger. Thus the quantity of one *Bindu* may vary from person to person as

the size of the index finger is different. The quantity of *Bindu* also varies according to the *Drava dravya* used for the *Nasya*. It would be practically convenient if standard or fixed quantity of one *Bindu* can be decided for any of the *Drava dravya* used for *Nasya*.

Such an attempt of Standardization of *Bindu* for *Sneha nasya/ Mars'a nasya* was at first successfully done by *S'aaran'gadharma* in 14th century.

Critical analysis on standardization of *Bindu* in the context of *Mars'a nasya*:

Evam`vidhairbindusanjn`airsht`bhih`

s'aana ucyate/ S'aa. Utt. 8/40

S'aaran'gadharma has stated that, 8 *Bindu* is equals to one *S'aana* and further the dose of *Mars'a nasya* is explained in multiples of *S'aana* itself, as 8 *S'aana*, 4 *S'aana* and 2 *S'aana* for *Pradhaana*, *madhyama* and *heena maatraa*.

According to *S'aaran'gdhara*

1 *S'aana* = 4 *Maasha*

4 *Maasha* = 4 gm = 4ml

(*Ayurvedic Formulary of India*)

Thus, 8 *Bindu* = 1 *S'aana* = 4 ml

1 *Bindu* = 0.5 ml

According to *Aayurvedic Formulary of India*, 1 drop = 0.05ml,

10 drops = 0.5 ml

1 Bindu = 10 Drops = 0.5ml

It can be stated from the above explanation that standardized quantity of one *Bindu* for *Mars'a nasya* is 0.5 ml (10 drops).

Relevance of *s'aarangadhara's bindu* in present period:

As *S'aarangadhara* has given the quantity of one *Bindu* for *Mars'a nasya* in the 14th century, it was essential to find it's relevance in present period.

A pilot study was conducted in 30 samples to assess the quantity of one *Bindu* of oil (*Karpaasaasthyaadi taila*), between age group 18 to 60 yrs, irrespective of sex, height, weight and dimensions of index finger.

Table no 01: Quantity of one *Bindu* as per pilot study

Sample	Mean	SD	SE
30	0.49 ml	0.07	0.01

It was observed that mean *Bindu* is 0.49 ml \pm 0.07 with SE of 0.01. Thus it was established that *S'aarangadhara's* standardized quantity of one *Bindu* (0.5 ml) is relevant in the present period.

Analysis on dose of *Mars'a nasya* as per standardized *Bindu*:

From above analysis the doses mentioned by various *Aacaaryas* for *Mars'a nasya* can be converted according to standardized quantity of *Bindu* as follows.

Table no 02: Revised doses of *Vaagbhat'a* as per the standardized *Bindu*.

AACAARYA		<i>Uttama Maatraa</i>	<i>Madhyama Maatraa</i>	<i>Heena maatraa</i>
<i>Asht'aangahr`daya</i> (As. H. Su. 20/6) <i>Asht'aangasamgraha</i> (As. Sam.Su. 29/14)	<i>Bindu</i>	10 <i>Bindu</i>	8 <i>Bindu</i>	6 <i>Bindu</i>
	Drops	100 drops	80 drops	60 drops
	ML	5ml	4 ml	3 ml
<i>Sushruta</i> (S.Ci.40/36) <i>S'aaran'gdhara</i> (S'aa .Utta.8/25) <i>Cakradatta</i> (C.D.73/10) <i>Vangasena</i> (86/15) <i>Bhaavaprakaas'a</i> (B.P.Po.kha. 5/213)	<i>Bindu</i>	64 <i>Bindu</i>	32 <i>Bindu</i>	16 <i>Bindu</i>
	Drops	640 drops	320 drops	160 drops
	ML	32 ml	16 ml	8 ml

It is observed that there is huge difference between the dose of *Vaagbhat'a* and other *Aacaaryas*. It is clear that the dose mentioned by *Sushruta* and other *Aacaarya* with similar opinion is 16 *Bindu* (8 ml) 32 *Bindu* (16 ml) and 64 *Bindu* (32 ml), and according to *Vaagbhat'a* it is 6 *Bindu* (3 ml), 8 *Bindu* (4 ml) and 10 *Bindu* (5 ml) for *Uttama*, *madhyama* and *Heena maatraa* respectively.

Interpretation of classical doses:

The answer for this variation among *Aacaaryas* regarding the dose lies in the procedure of *Nasya*.

Virecayet trirdvirathaikas'o vaa balam` sameekshya trividham` malaanaam /
(C. Si. 1/50)

Tatas'caivameva dviteeyam`s'manushecayettatha tr`teeyam`a doshadibalena vaa /
(As. Sam. Su. 29/18)

Dvistrirvaa nasyamaacaret / (As. H. Su 20/19)

Mars'asya dvitrivelam`a vaa veekshya doshabalaabalam / (S'aa. Utt. 8/26)

Above references tell that *Nasya* can be done once, twice or even thrice according to *Dosha* and *Bala* of the patient in the same sitting. If the dose of *Vaagbhat'a* and *Sushruta* is compared, the reason for this huge variation in dose

can be found in above reference, if e.g. according to *Vaagbhat'a madhyama maatraa* (8 *Bindu* - 4 ml in each nostril) is instilled thrice, i.e. 8 ml x 3 = 24 ml (48 *Bindu*) then the total quantity used for the *Nasya* on same day same sitting will be in between *Sushruta's madhyama* and *Uttama maatraa*.

Nasye Put'asankhyaamaah` - evamiti (Hemadri on As. H. Su 20/19)

Hemadri says that 2 or 3 *put'a* of *Nasya* has to be done according to patient's *Bala* and *Dosha* in one sitting of *Nasya*.

In similar way *Caraka's* dose of *Sneha nasya* can be also interpreted. *Caraka* have mentioned the dose of *Anu taila* as ½ *Pala* (24 ml). Thus the dose will be 48 *Bindu* (standardized *Bindu* = 0.5ml) and which is the quantity mentioned for one sitting of *Nasya* and not for the 7 days.

So it is very clear that there is no variations of doses exist among *Aacaaryas*. *Vaagbhat'a* mentioned the dose for each instillation and it is the range given from 6 *Bindu* to 10 *Bindu*. While *Sushruta*, *s'aaran'gadhara*, *cakradatta*, *vangasena* and *bhaavaprakaas'a* have given the dose for the complete *Nasya* in one sitting and it is the range given from 16 *Bindu* to 64 *Bindu*.

Table no 03: Interpretation of variations in classical doses

Dose in <i>BINDU</i> (In each nostril)	FIRST INSTILLATION	SECOND INSTILLATION	THIRD INSTILLATION
<i>Uttama maatraa</i> 10 Bindu	10 <i>Bindu</i> each nostril X1 = 20 Bindu	10 <i>Bindu</i> each nostril X 2 = 40 Bindu	10 <i>Bindu</i> each nostril X 3 = 60 Bindu
<i>Madhyama maatraa</i> 8 Bindu	8 <i>Bindu</i> each nostril X 1 = 16 Bindu	8 <i>Bindu</i> each nostril X 2 = 32 Bindu	8 <i>Bindu</i> each nostril X 3 = 48 Bindu
<i>Heena maatraa</i> 6 Bindu	6 <i>Bindu</i> each nostril X 1 = 12 Bindu	6 <i>Bindu</i> each nostril X 2 = 24 Bindu	6 <i>Bindu</i> each nostril X 3 = 36 Bindu

From the above analysis it can be stated that there may not have been any difference of opinion among *Aacaarya* regarding the dose of *Mars'a nasya*.

Routinely practiced Bindu:

The definition of *Bindu* is followed with the similar reference but it is interpreted in different way. In routine practice only the first single drop which dribbles down from the first two parts of index finger is considered as one *Bindu*.

$$\text{Bindu} = 1 \text{ drop} = 0.05 \text{ ml}$$

Routinely practiced dose of *Mars'a nasya*

Uttama maatraa : 10 drops (0.5ml)

Madhyama maatraa : 8 drops (0.4ml)

Heena maatraa : 6 drops (0.3ml)

Number of instillation in Routine

Practice:

In routinely practiced procedure of *Nasya* only one instillation is done in one sitting, i.e. 10 drops, 8 drops or 6 drops is instilled only once in each nostril.

Second or third instillation is not done in the same sitting of *Nasya*.

ANALYSIS BETWEEN ROUTINE

PRACTICE AND CLASSICAL

PRACTICE OF NASYA:

Dose: On comparison the classical *Bindu* is 0.5ml and routinely practiced *Bindu* is 0.05ml, which is 10 times less.

Number of instillation:

As already stated above the *Nasya* can be done twice or even thrice according to *Dosha* and *Bala* of the patient. Thus it is not always mandatory to stop *Nasya* after first instillation, if necessary second or even third instillation can be done. Thus in routine practice, if second instillation is avoided the 10 times less dose becomes 20 times less and if, the third instillation is avoided it becomes 30 times less, provided the *Dosha* and *Bala* of the patient demands the further instillations.

It can be stated that routinely practiced highest dose of 10 *Bindu* (10 drops) of *Mars'a nasya* itself is half the quantity of classical dose of *Pratimars'a*. It can be really a point of debate that the dose which is half of *Pratimars'a*, can ever do *S'odhana*? Thus it can be concluded that,

CONCLUSION:

- *Bindu* is not equivalent to drop (*Bindu* ≠ Drop).
- Routinely practiced dose is due to misinterpretation of concept of *Bindu*.
- Routinely practiced dose is 10 times less compared to classical dose.
- Standard dose of one *Bindu* for *Mars'a nasya* is 0.5ml (as according to *S'aaran'gadhara*, 1 *S'aana* = 8 *Bindu*) and it is relevant in present period.
- As per classical procedure dose can be repeated for two to three instillation according to need of clinical condition and if complications are not present, which is not followed in routine practice of *Nasya*.
- 10, 8 & 6 *Bindu* is the range of dose mentioned for one instillation of *Mars'a nasya*.

- 64, 32 & 16 *Bindu* is the range of dose mentioned for one sitting of *Mars'a nasya*.
- Measurement of *Bindu* should be defined in milliliter in standard literature or in formulary so as to avoid the misinterpretation of quantity of *Bindu*.

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