



Research Article

STANDARDIZATION OF *BINDU PRAMANA* FOR DIFFERENT *KALPANAS* OF *NASYA*

Pahwa Preeti^{1*}, Negi Aman², Negi Sangyasri², Ashu³

¹Associate Professor, ²PG Scholar, Department of Shalakyata-Tantra, Patanjali Bhartiya Ayurvedigyan Evam Anusandhan Sansthan, Haridwar, Uttarakhand

³Professor and HOD, Department of Shalakyata-Tantra, Institute for Ayurvedic Studies and Research, Kurukshetra, Haryana, India.

Article info

Article History:

Received: 19-05-2024

Accepted: 15-06-2024

Published: 10-07-2024

KEYWORDS:

Nasya, Bindu, Pramana, Dashmoola kwath, Dravya.

ABSTRACT

Nasya is one among the five important *Panchkarma* procedures. The unit of measurement used to explain the *Nasya* dosage is *Bindu*. One *Bindu* is typically understood to be one drop (0.05ml) in Ayurvedic practice, while *Acharayas* defines *Bindu* as one *Shana*, which is ten times the commonly used dose. This study addresses the traditional understanding of *Bindu* and how it should be standardized for various *Nasya Kalpanas*. A few publications previously published discussed the standardization of *Bindu Pramana* for *Sneha Kalpana* of *Nasya*. However, our classical books do not provide a standard *Pramana* for another *Nasya Kalpana*, such as *Ksheer, Swarasa* and *Kwath Kalpana*. Thus, for these *Kalpanas* of *Nasya* we are attempting to standardize *Bindu Pramana* of *Nasya*. **Method and Material:** 40 volunteers aged between 18 to 40 years were considered and in each group for *Ksheer, Swarasa* and *Kwatha Kalpana* of *Nasya*, irrespective of sex and age were selected for the study. Group A: 40 people were asked to dip their fingers up to 2nd interphalangeal joint in cow milk and all drops dribbled were considered 1 *Bindu*. Group B: 40 people were asked to dip their fingers up to 2nd interphalangeal joint in *Tulsi Patra Swaras* and all drops dribbled were considered 1 *Bindu*. Group C: 40 people were asked to dip their fingers up to 2nd interphalangeal joint in *Dashmoola kwath* and all drops dribbled were considered 1 *Bindu*. **Conclusion:** The study showed variations in dose of *Bindu* as per the different *Kalpanas* of *Dravya* used for *Nasya*.

INTRODUCTION

Ayurveda, the science and art of living, is about to gain international recognition. *Panchkarma* treatments are the ones that are most prominently displayed in the current situation among the many Ayurvedic therapy modalities. *Nasya* is considered to be one of the five purifying (*Panchkarma*) methods that is beneficial in treating disorders of the *Urdhvajatru* (supraclavicular area). *Nasya* is the term for the process of administering medication through the nose. *Nasya* is used in several therapeutic forms, including *Swarasa, Kalka, Kwatha, Ksheer, Choorna* and *Sneha* for a variety of clinical ailments.^[1]

Among these, *Sneha* is frequently used due to its intrinsic *Kaphahara* property and ease of availability. In Ayurvedic context *Bindu Pramana* of *Nasya*, *Acharya Sushruta* is credited with coining the name *Bindu* in the context of *Sneha Nasya*. The precise dosage of *Sneha* to be utilized in *Nasya* was not specified by *Acharya Charaka*. *Acharya Charaka* stated the dosage as ½ *Pala* for *Anu Taila* alone. Other *Acharyas* used the term *Bindu* as the unit of measurement for any liquid medication for *Nasya*. *Bindu* refers to the cumulative amount of liquid medicine (such as *Sneha, Swarasa, Kashaya* etc.) that drips down when the first two digits of the index finger (proximal and middle phalanges) are dipped into it and then removed. Application of *Bindu Pramana* for *Sneha Nasya*, *Acharya Vagbhata*, in *Ashtang Hridayam*, introduced a classification of *Sneha Nasya* into two varieties based on the dosage of *Nasya*, namely *Bindu* as *Marsha Nasya* and *Pratimarsha Nasya*.^[2] *Acharya Charaka* employed the phrase "*Naavana*", whilst

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<https://doi.org/10.47070/ayushdhara.v11i3.1585>

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Acharya Sushruta utilised the term "Nasya." Acharya Vagbhata has specified three distinct dosages for *Marsha Nasya* (*Sneha Nasya*) based on the *Dosha* and *Bala* of the patient i.e., 10 *Bindu* (*Uttama*), 8 *Bindu* (*Madhyama*) and 6 *Bindu* (*Heena*).^[3] Acharya Sushruta did not categorise *Nasya* based on the dosage of *Sneha* utilised, but he did specify three distinct dosages for *Sneha Nasya*. The *Bindu*, *Shukti*, and *Panishukti* correspond to the *Heena*, *Madhyama* and *Uttama Matra* respectively. Acharya Dalhana stated that 8 *Bindu* should be administered in each nostril is called *Heena Matra*. According to him, *Shukti* is equivalent to 32 *Bindu*, whereas *Panishukti* is equivalent to 64 *Bindu*.^[4] The same viewpoint is also expressed by Acharya Sharangadhara,^[5] Acharya Chakradatta,^[6] Acharya Vangasena,^[7] and Acharya Bhaavamishra.^[8] Furthermore, it is apparent from the data that the quantity of a *Bindu* may differ among individuals due to variations in the size of their index finger. The amount of *Bindu* also fluctuates depending on the type of liquid substance utilized for the *Nasya* procedure. It would be highly useful if a standardised or predetermined quantity of one unit (*Bindu*) could be established for any of the liquid substances (*Drava dravya*) utilised for *Nasya*. Acharya Sharangadhara successfully standardised the use of *Bindu* for *Nasya* in the 14th century. Acharya Sharangadhara resolved all uncertainties by providing precise quantitative calculations for one *Bindu*. Acharya Sharangadhara has asserted that 8 *Bindu* is equivalent to one *Shana*.^[9] Additionally, the dosage of *Marsa Nasya* is described in multiples of *Shana*, specifically 8 *Shana*, 4 *Shana*, and 2 *Shana* for *Pradhaana*, *Madhyama* and *Heena Matra* respectively. As per Acharya Sharangadhara, One *Shana* is equivalent to 4 *Maasha*. According to the Ayurvedic Formulary of India, 4 *Maasha* is equivalent to 4gm which is also equal to 4ml. Therefore, 8 *Bindu* is equivalent to 1 *Shana*, which is equal to 4ml. One unit of measurement called "*Bindu*" is equivalent to 0.5 millilitres. As per the Ayurvedic Formulary of India, the equivalence between 1 drop and 0.05ml is established and 10 drops is equivalent to 0.5ml. Based on the above explanation, it can be inferred that the standardised quantity of one *Bindu* for *Nasya* is 0.5ml, which is equivalent to 10 drops. So here we can say *Bindu Pramana* for *Sneha Kalpana* is approx. 0.5 ml. But for other preparation of *Nasya*, *Bindu Pramana* is not mentioned in our texts. In *Sharangdhar Samhita* for *Ksheer Dravya* preparation of *Nasya*, 8 *Shana Matra* has been told but in form of *Bindu* and it has not been told other than *Sneha Kalpana*.^[10] For different *Kalpanas* of *Nasya*, *Bindu Pramana* can vary as per viscosity of the liquid.

AIM AND OBJECTIVE: To standardize the *Bindu Pramana* for different *Kalpanas* of *Nasya*.

MATERIALS AND METHODS

Subjects & students attending the OPD of *Shalakyatantra* of Patanjali Ayurveda Hospital, Haridwar were recruited for the study. All subjects were examined and measured for dimensions of circumference of fingers.

Inclusion Criteria

- Subject of both genders.
- Healthy volunteers in between age group of 18-40 yrs.

Exclusion Criteria

- Subjects with wound, fracture or any other deformity of the index finger.

Study Design

- An open-label single arm observational study.

Materials:

- 1) *Ksheer - Godugdha*
- 2) *Swarasa - Tulsi Swarasa*
- 3) *Kwath - Dashmoola Kwath*
- 4) Small glass vessel
- 5) Measuring syringe

Methodology

- 1) Firstly, cow milk was taken from a local vendor who gave fresh milk of jersey cow which was used directly for measurement after filtering without boiling. (Fig.1)
- 2) *Swarasa* was taken of *Tulsi* leaves after washing and making it *Kalka*. *Kalka* was further squeezed and properly filtered for measurement. (Fig. 2)
- 3) *Kwath* was prepared of 48 gm *Dashmoola Dravya* boiled with approx. 768ml of water and reduced to 1/8th part approx. 96 ml~100ml. After proper filtration, *Kwath* was taken for measurement. (Fig.3)

All 40 subjects selected were being told to dip their index fingers of right hand up to 2nd interphalangeal joint in *Ksheer*, *Swarasa* and *Kwath* respectively and total drops dribbled were counted as a single *Bindu*. All 40 subjects firstly followed this methodology for *Ksheer*, then *Swarasa* and then *Kwath* respectively. Liquid collected after dropping of 1 *Bindu* was measured using measuring syringe for each subject. Finally, mean of measurement was calculated. On observation, it was found that *Matra* for *Bindus* for *Ksheer*, *Swarasa* and *Kwath* vary very mildly from each other but vary with dose of *Bindu* for *Sneha Kalpana*. Observations were made by tabulating data as follows:

Table 1: Data of 40 individuals for the standardization of Bindu Praman of Ksheer, Swaras and Kwath

S.No.	Age in yrs	Sex	BMI	Circumference of index finger in cm	Ksheer in drops	Ksheer in ml	Swaras in drops	Swaras in ml	Kwath in drops	Kwath in ml
1	26	M	21	5.5	3	0.15	7	0.275	4	0.175
2	28	M	25.1	6.2	5	0.175	4	0.125	4	0.125
3	24	F	25	5.5	3	0.10	3	0.10	4	0.075
4	21	F	16.8	5	4	0.125	3	0.10	4	0.125
5	27	M	23.4	6	2	0.075	4	0.125	4	0.150
6	24	M	24.4	6.2	3	0.125	3	0.125	3	0.10
7	21	M	20.4	5.5	4	0.150	5	0.125	3	0.10
8	21	M	20.4	6.2	2	0.10	3	0.10	4	0.125
9	21	M	21.2	5.6	4	0.125	5	0.175	5	0.175
10	38	M	26.3	6.2	3	0.10	4	0.125	4	0.150
11	27	M	26.3	6.3	5	0.175	6	0.20	4	0.175
12	25	M	27.7	6.5	4	0.150	2	0.075	2	0.10
13	23	F	23.7	4.5	3	0.10	3	0.075	4	0.10
14	21	F	20.2	5	3	0.10	2	0.075	3	0.075
15	26	F	21.3	4.5	3	0.10	4	0.10	3	0.075
16	20	F	21.3	4.5	3	0.10	2	0.10	3	0.075
17	20	F	21.5	5	3	0.10	4	0.10	3	0.075
18	19	F	21.5	4	2	0.075	3	0.075	2	0.05
19	27	M	21.3	6.4	4	0.20	4	0.150	4	0.10
20	26	M	27.8	7.5	3	0.125	4	0.125	4	0.10
21	26	M	31.9	6.8	5	0.20	5	0.175	4	0.10
22	25	M	22.9	5.8	4	0.20	4	0.125	4	0.125
23	23	M	21.5	6.5	5	0.225	4	0.125	3	0.10
24	22	M	25.2	6.4	4	0.20	4	0.150	5	0.20
25	25	M	27.7	5.5	4	0.10	4	0.10	4	0.10
26	21	F	22.9	5	2	0.10	3	0.075	2	0.05
27	19	F	29	4.5	3	0.10	3	0.10	3	0.075
28	21	F	20.2	4.5	3	0.10	3	0.075	2	0.05
29	22	F	21.8	4.5	3	0.075	3	0.05	2	0.075
30	20	F	21.1	4.5	3	0.10	3	0.10	2	0.05
31	20	F	22.3	4.5	3	0.10	2	0.075	3	0.10
32	25	M	24.1	6.4	5	0.20	4	0.15	4	0.175
33	26	M	27.6	5	3	0.10	3	0.10	4	0.075
34	25	F	21.6	4	4	0.125	3	0.075	3	0.10
35	26	F	19	4	4	0.125	3	0.10	3	0.10
36	24	F	21.6	4	2	0.075	3	0.075	2	0.05
37	19	F	20.2	4	3	0.10	4	0.075	3	0.025
38	18	F	18.3	4.5	3	0.10	2	0.05	2	0.05
39	21	F	20.6	4	2	0.075	3	0.075	2	0.05
40	26	M	22.4	6.4	4	0.10	5	0.125	3	0.075
Total						4.95		4.425		3.95

RESULTS

Table 2: Mean of above-mentioned data

Kalpana	Mean (in ml)
Ksheer	0.12375
Swaras	0.11
Kwath	0.09875

DISCUSSION

From the above study and observations, it is clear that dose for *Nasya* differs if one goes with textual method than routinely prescribed method. It is observed that *Nasya* dose as *Bindu Pramana* is mentioned in texts is mainly for *Sneha Kalpana*. For other *Kalpanas* of *Dravyas*, *Matra* is not mentioned anywhere and it is been seen through this work *Nasya* dose varies with different *Kalpana* of *Dravyas*.

Till now few articles are published for standardization of *Bindu Pramana* for *Sneha Kalpana*, but here work has been conducted for other *Kalpanas* of *Nasya*. *Bindu Pramana* for *Sneha Kalpana* is calculated and standardized as 0.45ml as 1 *Bindu* but for *Bindu Pramana* for *Ksheer*, *Swarasa* and *Kwath Kalpana* calculated here is 0.12375ml, 0.11ml, 0.09875ml respectively. So, after calculations we get that 8,16, 32 *Bindu* taken for *Ksheer Kalpana* is 0.99ml, 1.99 ml, 3.2ml, for *Swarasa*, it is 0.88ml, 1.76ml, 3.52ml and for *Kwath* it is 0.79ml, 1.58ml, 3.16ml respectively. So as per *Dosha* involved and *Bala of Rogi*, doses of *Nasya* can be calculated for different *Kalpanas* of *Nasya*. Here, it is observed there is not much variation in *Bindu Pramana* of these 3 *Nasya Kalpanas* though *Kwath Bindu* is least in *Pramana*.

One can now easily carry out *Acharya Charaka's* way of dose explanation for *Nasya*. He had advised the exact quantity of *Nasya* to administered i.e., half *Pala* (20ml approximately) but that is also for *Anu Taila*. He might have done this to avoid further confusion and misinterpretation of *Bindu*.

CONCLUSION

Bindu is not equal to drop. The routinely administered dose is 10 times lower than the classical dose. It is important to provide the measurement of *Bindu* in millilitres in standard literature or in a formulary to prevent any confusion regarding the quantity of *Bindu* for various *Kalpanas* of *Nasya*. The approximate quantity of one *Bindu* for *Sneha Kalpana*

is 0.45 ml but for *Ksheer*, *Swarasa* and *Kwath Kalpana* calculated here is 0.12375ml, 0.11ml, 0.09875ml respectively which is very less than the *Sneha Kalpana*. Out of these 3 preparations of *Nasya*, though there is less variation in *Bindu Pramana* but *Kwath Bindu* is least in *Pramana*.

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Cite this article as:

Pahwa Preeti, Negi Aman, Negi Sangyasri, Ashu. Standardization of Bindu Pramana for Different Kalpanas of Nasya. AYUSHDHARA, 2024;11(3):189-192.

<https://doi.org/10.47070/ayushdhara.v11i3.1585>

Source of support: Nil, Conflict of interest: None Declared

*Address for correspondence

Dr. Pahwa Preeti

Associate Professor,
Department of Shalaky-Tantra,
Patanjali Bhartiya Ayurvigyan
Evam Anusandhan Sansthan,
Haridwar, Uttarakhand, India.
Email: drpreeti25@gmail.com

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