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Research Article

A CRITICAL ANALYSIS ON NIRUHA BASTI SAMMELANA VIDHI

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ABSTRACT

Niruha Basti (therapeutic decoction enema) is one of the important Panchakarma procedures (five internal bio-cleansing procedures) which is the best treatment modality in the diseases caused due to not only Vata, but also when associated with other Doshas as well. The preparation of Niruha Basti comprises of step wise mixing of ingredients as described in the Ayurveda classics. In the present study, simple Erandamoola Niruha Basti was prepared by adding Madhu (honey), Saindhava (rock salt), Moorchita Tila Taila (medicated sesame oil), Shatapushpa Kalka (paste of *Athenum sowa*) and Erandamoola Kwatha (decoction of root of *Ricinus communis*) in classical method to assess the changes in particle size distribution in each step of preparation at specific intervals. The changes taken place during the Bhavana of the ingredients was observed under microscope. The Erandamoola Niruha Basti was prepared in classical method as well as contemporary methods like churner, mixer, etc., to assess the emulsion stability. Another Erandamoola Niruha Basti was also prepared replacing Madhu (honey) with egg yolk to check for emulsion stability and particle size & distribution.

Keywords: Basti Sammelana, Bhavana, Erandamoola Niruha Basti, particle size distribution, emulsion stability.

INTRODUCTION

Vata is considered as important among Doshas and prime cause for the manifestation of diseases, and there is no other treatment like Basti, which can effectively win over Vata. This is one important reason to consider Basti as Ardha Chikitsa or even Sampoorna Chikitsa. The other reasons being, its capability of doing Sheegra-Ashu Vishodhana (quick purifying action), Ashu Tarpana-Apatarpana (quick nourishing and depleting actions), Niratyaya (without any complications) when compared to Vamana-Virechana procedures[1]. It is considered best among all the procedures because it can be administered in both Bala (children) and Vruddha (old aged)[2]. It is considered Pradhana Tama (most important) among all the procedures owing to reasons like - Aneka Karma Karatvat (various therapeutic benefits) like Samshodhana (bio-cleansing action), Samshamana (palliative action), Sangrahana (absorptive action), Vajeekarana (aphrodisiac action), Brimhana (nourishing action), Karshana (depleting action) etc., also because of Nanavidha Dravya Samyoga (combination and vast availability of drugs)[3].

The factors responsible for Siddhi (efficacy) of Basti are Dosha, Aushadha (medicine), Desha (habitat), Kala (time), Satmya (habituation), Agni (digestive power), Sattva (mental strength), Vaya (age) and Bala (physical strength)[4]. Aushadha is one of the important factors that accounts for the efficacy of Basti. The efficacy of Basti depends on the ingredients, Sammelana (method of preparation) and its administration. Kashyapa says, Samyak Mathita (properly mixed) Basti can remove Kapha, Vata and Pitta out of the Srotas (internal channels) quickly, whereas Asamyak Mathita (improperly mixed) Basti doesn't yield any benefits[5]. Order and mixing of Basti Dravya have been explained by various authors. According to Charaka[6] and Ashtanga Hridaya[7], Madhu (honey) is added first, followed by Saindhava (rock salt), Sneha (oil), Kalka (paste of medicated drugs), Kashaya (decoction of medicated drugs) and Avapa (additional ingredients), whereas Sushruta[8] described adding Saindhava (rock salt) first, followed by Madhu (honey) and other ingredients. Vagbhata in Ashtanga Sangraha explains that all the ingredients should be taken together in a vessel and mixing should be done[9].

Objectives of the study

1. To prepare Erandamoola Niruha Basti in accordance with the classical method.
2. To prepare Erandamoola Niruha Basti with contemporary methods like mixer & churner and assess their emulsion stability.
3. To assess the changes in the particle size and bonding at intervals during trituration.
4. To assess the role of honey and egg yolk as natural emulsifying agents and their contributions in emulsion stability and particle size distribution.

MATERIALS AND METHODS

Raw materials

Madhu (honey)
Saindhava lavana (rock salt)
Sneha - Moorchita Tila Taila (medicated sesame oil)

Shatapushpa Kalka (paste of *Athenum sowa*)
Erandamoola Kashaya (decoction of root of *Ricinus communis*)
Egg yolk

Equipments
Khalwa Yantra (mortar with pestle)
Mixer
Churner
Measuring glass
Weighing scale
Filter
Vessels
Laboratory instruments - microscope, slides, beakers etc.

Methods
The study was carried out in following phases:
1. **Phase 1 -** Preparation of Erandamoola niruha basti in accordance with classical as well as contemporary methods to assess the emulsion stability.
2. **Phase 2 -** Preparation of Erandamoola niruha basti by replacing honey with egg yolk and assessed for emulsion stability.
3. **Phase 3 -** Role of bhavana samskara (trituration) by stepwise assessment of changes in the particle size and bonding of Erandamoola niruha basti prepared with honey and egg yolk as well to decide the duration of trituration of each ingredient.

Phase 1 - Preparation of Erandamoola niruha basti in accordance with classical as well as contemporary methods to assess the emulsion stability

Ingredients in the formulation were taken in the measure as shown below:
1. Madhu (honey) - 48ml
2. Saindhava (rock salt) - 12g
3. Moorchita Tila Taila (medicated sesame oil) - 48ml
4. Shatapushpa Kalka (paste of *Athenum sowa*) - 24g
5. Erandamoola Kashaya (decoction of root of *Ricinus communis*) - 96ml

Five samples of Erandamoola niruha basti were prepared as mentioned below and was assessed for emulsion stability period.
Sample A - Ingredients were mixed in order, one after the other in a mixer.
Sample B - Ingredients were mixed in order, one after the other in a churner.
Sample C - Ingredients were mixed in order, one after the other with Hasta tala in Khalwa yantra.
Sample D - All the ingredients were mixed together in Khalwa yantra.
Sample E - Ingredients were mixed in order, one after the other in Khalwa yantra.

Phase 2 - Preparation of Erandamoola niruha basti by replacing honey with egg yolk and assessed for emulsion stability:
Ingredients in the formulation were taken in the measure as shown below:
1. Egg yolk - 48ml
2. Saindhava (rock salt) - 12g
3. Moorchita Tila Taila (medicated sesame oil) - 48ml
4. Shatapushpa Kalka (paste of *Athenum sowa*) - 24g
5. Erandamoola Kashaya (decoction of root of *Ricinus communis*) - 96ml

Phase 3 - Role of bhavana samskara (trituration) by stepwise assessment of changes in the particle size and bonding of Erandamoola niruha basti prepared with honey and egg yolk as well, to decide the duration of trituration of each ingredient:
Sample 1 - Erandamoola niruha basti prepared with honey and checked for changes in the particle size and bonding.
Sample 2 - Erandamoola niruha basti prepared with egg yolk instead of honey and checked for changes in the particle size and bonding.

Step 1 -
Sample 1: Makshika (honey) and Saindhava Lavana (rock salt) are triturated in the beginning.
Sample 2: Egg yolk and Saindhava Lavana (rock salt) are triturated in the beginning.

Step 2 -
Moorchita Tila Taila (medicated sesame oil) is added to the above mixture and triturated meticulously.

Step 3 -
Shatapushpa Kalka (paste of *Athenum sowa*) is then mixed in it and the mixture is then again mixed thoroughly.

Step 4 -
Erandamoola Kwatha (decoction of root of *Ricinus communis*) is added to the mixture and subjected to thorough trituration to produce a homogenous mixture.

During each step, at intervals, the sample was assessed for particle size and bonding under 10x magnification of compound light microscope.

RESULTS & DISCUSSION

Basti - an emulsion
An emulsion is a mixture of two or more liquids that are normally immiscible. In an emulsion, one liquid is dispersed in the other. Milk is a natural emulsion for example - emulsion of fat and water along with other components. Basically, there are two types of emulsion:
1. Oil-in-water: Oil is dispersed in water.
2. Water-in-oil: Water is dispersed in oil.

Multiple emulsions are also possible, including water-in-oil-in-water emulsion and oil-in-water-in-oil emulsion. Emulsion stability is the ability of an emulsion to resist changes in its properties over a period of time. Emulsifiers/surfactants are the substances that can increase the kinetic stability of an emulsion so that the size of the droplets doesn't change significantly with time. Emulsifiers are compounds that are typically amphiphilic in nature, meaning they have polar/hydrophilic part and a non-polar/hydrophobic/lipophilic part. Honey is a natural emulsifier. Other examples for emulsifiers are egg, gum resin etc. Most of the Niruha Bastis are oil in water type of emulsion, where the oil is suspended in water media. This is due to the ratio of water-based media like Kwatha (decoction), Avapa (additional ingredients), etc., being more than the oil medium of Sneha.

Stability period of Erandamoola Niruha Basti prepared in different methods

1. Ingredients mixed in order, one after the other in a mixer: honey, rock salt etc., ingredients when added one after the other and mixed in a mixer, the Basti Dravya was stable for 1 hour, after which it completely precipitated separating the oil part after another 2 hours.

2. Ingredients mixed in order, one after the other in a churner:
   honey, rock salt etc., ingredients when added one after the other and mixed in a churner, the Basti Dravya was stable for 1 hour, after which it completely precipitated separating the oil part after another 1 hour.
3. Ingredients mixed in order one the other with Hasta Tala (palm of the hand) in Khalwa:
   honey, rock salt etc., ingredients were added one after the other and mixed in a Khalwa using Hasta Tala upto mixing the Kalka, later on added Kashaya and mixed with a pestle. The mixture was stable for 2 hours but separated after another 2 hours.
4. Ingredients mixed all together in Khalwa:
   When all the Madhu (honey), Saindhavadi (rock salt etc.) ingredients were mixed in a Khalwa together using pestle and mortar, the stability period was around 30 hours.
5. Ingredients mixed in order one after the other in Khalwa Yantra:
   honey, rock salt etc., ingredients were added one after the other and mixed in a Khalwa Yantra. The mixture was stable for more than 48 hours.

Stability period of emulsions in all the samples is shown in Table number 1.

Role of egg yolk in Basti as an alternate to honey

- It is a well-established fact that honey is a natural emulsifier. It increases the stability of the Basti Dravya; therefore the droplets don't change over a period of time.
- Recently, there were speculations regarding the honey in use. Major brands in India failed to pass the NMR (Nuclear Magnetic Resonance) test, which proved that the honey which we use is merely sugar syrup, which means the therapeutic properties of honey isn't fulfilled using the honey available in market.
- If the purpose of honey is not served, we could use a better emulsifier instead, which could also add up to the benefits of Basti Dravya.
- So, Basti was prepared replacing honey with egg yolk, since egg yolk is one of the best emulsifiers in the food industry.
- Kukkutanda (Hen's egg) is Na Ati Snigdha (not too unctuous), Guru (heavy), Vatahara (Vata pacifying) and Vrishya (aphrodisiac) in nature[10].
- Erandamoola Niruha Basti prepared with egg yolk and named Sample E. It was checked for its stability period as well. The Basti Dravya was stable for more than 60 hours. Eventually the Basti Dravya started getting spoilt, but the stability remained the same.

Duration of mixing of Basti Dravya and significance of particle size and distribution

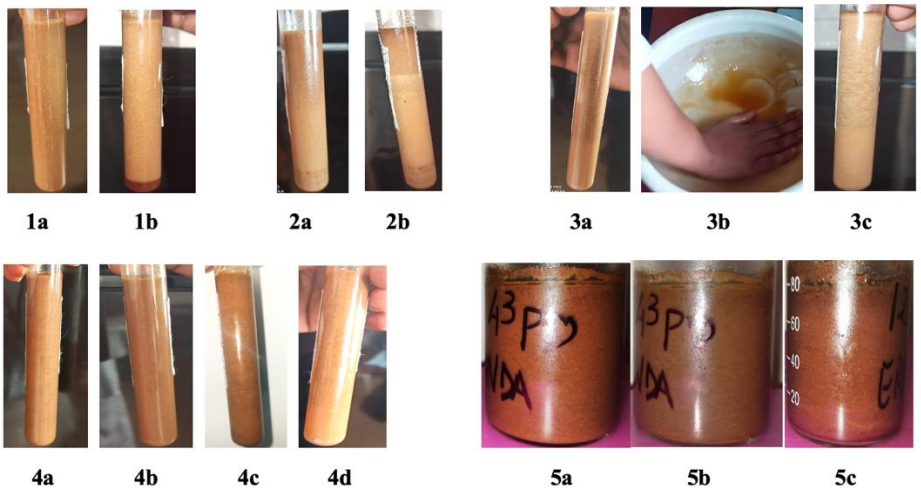
Though it is difficult to standardize the time taken to mix each ingredient because the pressure and speed of mixing varies depending on an individual, it was noticed that a minimum of 15-20 minutes of trituration of each ingredient was required to reduce the particle size uniformly and to form a homogenous emulsion where it was seen that the particles were closely bonded, which increased the stability period of the Basti Dravya.

Since Basti Dravya stays in the body for a smaller duration of time, it becomes extremely important to reduce the particle size of the ingredients uniformly & have them closely bonded and increase the emulsion stability to help in the better absorption of the Basti.

Table 1: Stability period of emulsions in all the samples

Sample	Stability in hours
Sample A	3 hours
Sample B	2 hours
Sample C	4 hours
Sample D	30 hours
Sample E	48 hours

SAMPLES OF PHASE 1 –



1a - Sample A, soon after the preparation
1b - Sample A, after 3 hours
2a - Sample B, soon after the preparation
2b - Sample B, after 2 hours
3a - Sample C, soon after the preparation
3b - Preparation using palm of the hand
3c - Sample C, after 4 hours

4a - Sample D, soon after the preparation
4b - Sample D, after 12 hours
4c - Sample D, after 24 hours
4d - Sample D, after 30 hours
5a - Sample E, soon after the preparation
5b - Sample E, after 24 hours
5c - Sample E, after 48 hours

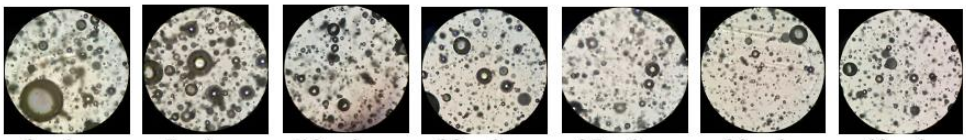
SAMPLES OF PHASE 2

6a **6b** **7a** **7b** **7c** **7d**

6a - Commencement of mixing egg yolk and rock salt
6b - Well triturated egg yolk and rock salt
7a - Sample E, soon after the preparation
7b - Sample E, after 24 hours
7c - Sample E, after 48 hours
7d - Sample E, after 60 hours

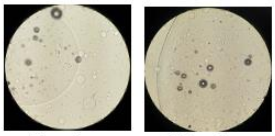
SAMPLES OF PHASE 3

1.i. Honey + Rock salt



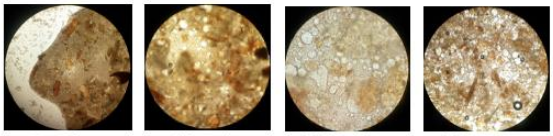
2 mins **5 mins** **10 mins** **20 mins** **25 mins** **30 mins** **40 mins**

1.ii. Honey + Rock salt + Oil



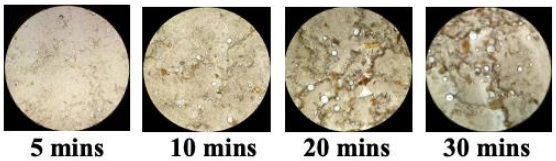
5 mins **15 mins**

1.iii. Honey + Rock salt + Oil + Medicated paste



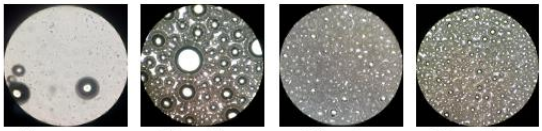
5 mins **10 mins** **20 mins** **30 mins**

1.iv. Honey + Rock salt + Oil + Medicated paste + Medicated decoction



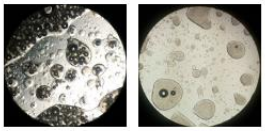
5 mins **10 mins** **20 mins** **30 mins**

2.i. Egg yolk + Rock salt



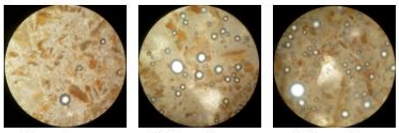
5 mins 10 mins 20 mins 30 mins

2.ii. Egg yolk + Rock salt + Oil



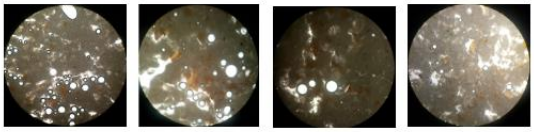
10 mins 20 mins

2.iii. Egg yolk + Rock salt + Oil + Medicated paste



5 mins 20 mins 30 mins

2.iv. Egg yolk + Rock salt + Oil + Medicated paste + Medicated decoction



5 mins 10 mins 20 mins 30 mins

CONCLUSION

Based on the experiments conducted, mixing of Basti is homogenous and stable for a longer duration when it is mixed in Khalwa in comparison to other contemporary methods like mixer, churner etc. Even when all the ingredients of Basti are added together and triturated in Khalwa for 45 minutes to 1 hour, the Basti Dravya remained stable for around 48 hours. This could be due to the unidirectional rotations by manual method whereas, in churner it is opposite.

Egg yolk is considered one of the best emulsifying agents in the food industry. In comparison to honey, egg yolk proved to be a better emulsifier and shown to have good emulsion stability but the properties and benefits of honey in Basti cannot be denied of. More research needs to be done to evaluate the efficacy of egg yolk in Basti in various diseases, by preparing Basti with egg yolk instead of honey or along with honey.

REFERENCES

1. Agnivesha. Charaka Samhita by Agnivesha. Vaidya Jadavaji Trikamji Acharya Editor. Charaka Samhita with Ayurveda Dipika Commentary. Varanasi: Chaukhambha Orientalia; 2011. Siddhi Sthana 10/5. p.724.
2. Agnivesha. Charaka Samhita by Agnivesha. Vaidya Jadavaji Trikamji Acharya Editor. Charaka Samhita with Ayurveda Dipika Commentary. Varanasi: Chaukhambha Orientalia; 2011. Siddhi Sthana 10/7. p.724.
3. Sushruta. Sushruta Samhita. Vaidya Jadavaji Trikamji Acharya Editor. Sushruta Samhita with Nibandha Sangraha Commentary. Varanasi: Chaukhambha Orientalia; 2011. Chikitsa Sthana 35/3-4. p. 525.
4. Agnivesha. Charaka Samhita by Agnivesha. Vaidya Jadavaji Trikamji Acharya Editor. Charaka Samhita with Ayurveda Dipika Commentary. Varanasi: Chaukhambha Orientalia; 2011. Siddhi Sthana 3/6. p.691.
5. Kashyapa. Kashyapa Samhita. Premavati Tewari Editor. Varanasi: Chaukhambha Vishvabharati; 2002. Khila Sthana 8/44-46. p. 530.
6. Agnivesha. Charaka Samhita by Agnivesha. Vaidya Jadavaji Trikamji Acharya Editor. Charaka Samhita with Ayurveda Dipika Commentary. Varanasi: Chaukhambha Orientalia; 2011. Siddhi Sthana 3/23-24. p.693.
7. Vagbhata. Ashtanga Hridaya. Harishastri Paradakara Editor. Ashtanga Hrudaya with Sarvangasundara and Ayurvedarasayana Commentary. Varanasi: Chaukhambha Surbharti Prakashan; 2010. Sutra Sthana 19/45. p.279.
8. Sushruta. Sushruta Samhita. Vaidya Jadavaji Trikamji Acharya Editor. Sushruta Samhita with Nibandha Sangraha Commentary. Varanasi: Chaukhambha Orientalia; 2011. Chikitsa Sthana 38/33-34. p. 542.
9. Vagbhata. Ashtanga Sangraha. Dr. Shivaprasad Sharma Editor. Ashtanga Sangraha with Shashilekha Commentary. Varanasi: Chaukhambha Sanskrit Series Office; 2016. Sutra Sthana 28/37. p.219.
10. Bhava Mishra. Bhavaprakasha. Prof. K. R. Srikantha Murthy Editor. Varanasi: Chowkhamba Krishnadas Academy; 2004. 11/63-64. p.408.

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