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## COMPARATIVE PHARMCOGNOSTIC EVALUATION OF ERANDAMOOOLADI BASTI YOGA PREPARED WITH DARUHARIDRA AND RASANJANA

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### ABSTRACT

*Basti* is considered as one of the paramount options for treating *Vatadosha* and *Vata* coupled with *Kapha* and *Pitta*. *Erandamooladi Niruha Basti (EMNB)* is mentioned for the treatment of *Vatavyadhi* and *kaphavritha vata*. It contains ingredients like *Shathapushpa*, *Hapusha*, *Priyangu*, *Pippali*, *Yastimadhu*, *Bala*, *Rasanjana*, *Vatsakabeeja* and *Musta* as *Kalka dravyas*. *Rasanjana* is a *Rasakriya* formulation which is not readily available as a product. One has to prepare *Rasanjana* first before formulating EMNB. So as an easy purpose people may use *Daruharidra* directly instead of *Rasanjana*. So in this work an attempt was made to prepare the *kalka churna* of EMNB by using *Rasanjana* in sample 1 and *Daruharidra* in Sample 2. The analytical study of *Rasanjana* showed water soluble extract value more than *Daruharidra*. It can be concluded that in EMNB, *Rasanjana* is preferable over *Daruharidra* as a *kalka dravya*.

**Keywords:** *Basti, Erandamooladi Niruha Basti, Rasanjana, Daruharidra, Rasakriya*

## INTRODUCTION

*Basti* is considered as *Ardha chikitsa* in Ayurveda as it is capable of treating various diseases. It is considered as one of the paramount options for treating *Vatadosha* and *Vata* coupled with *Kapha* and *Pitta*. *Erandamooladi Niruha Basti yoga* [1] is mentioned for the treatment of *Vatavyadhi* and *Kaphavriitha vata*. In *EMNB*, *Rasanjana* is preferable over *Daruharidra* as a *kalka dravya*.

*Niruha Basti* preparation is a unique procedure wherein *Makshika* (Honey), *Lavana* (Salt), *Sneha* (Oil/Ghee), *Kalka* (Medicated paste), *Kwatha* (Filtered decoction), and *Avapa* (Adjuvants) are sequentially mixed until a uniform mixture is

achieved. *Kalka* helps in achieving overall potency in that composition. Most of the drugs have *katuvipaka* and mainly are *Kapha-vata shamaka* [2]. One among nine *kalka dravyas* in this *yoga* is *Rasanjana* which is the *Ghana* [3] form (solidified) made out of *Daruharidra* (*Berberisaristata Dc*) and goat's milk. In this case instead of *Rasanjana*, *Daruharidra* can also be used due to non-availability [4]. Present work was an attempt made to prepare the *kalka churna* of *Erandamooladi Niruha Basti* by using *Rasanjana* in sample I and *Daruharidra*, in place of *Rasanjana* in Sample II. Pharmacognostic evaluation of both the samples was also carried out.

Table 1: Ingredients of *kalka dravyas* for *Erandamooladi Niruha Basti yoga*

S. No.	Name of the ingredient	Latin name
1	<i>Shatapushpa</i>	<i>Anethum sowa Kurz</i>
2	<i>Hapusha</i>	<i>Juniperus communis</i>
3	<i>Priyangu</i>	<i>Callicarpa macrophylla Vahl</i>
4	<i>Pippali</i>	<i>Piper longum</i>
5	<i>Yastimadhu</i>	<i>Glycyrrhiza glabra</i>
6	<i>Bala</i>	<i>Sida cordifolia</i>
7	<i>Vatsakabeeja</i>	<i>Holarrhena antidysenterica</i>
8	<i>Musta</i>	<i>Cyperus rotundus</i>
9	<i>Rasanjana</i>	<i>Berberis aristata Dc</i> (extract of <i>Daruharidra</i> )

## MATERIALS AND METHODS

### Aim and Objectives

1. Preparation of *kalka churna* of *Erandamooladi Niruha Basti yoga* in two batches
2. Comparing physicochemical properties of both the samples.

The present study was carried out in three steps - Raw drug collection, Preparation of

*Daruharidra kashaya* and *Rasanjana*, Physico- chemical analysis of two samples of *kalka dravyas*.

- I. **Raw drug collection**– The raw drugs (Table 1) were collected from Srihajaraker Pharmacy, Belgavi district, Karnataka. Drugs were authenticated from the Department of *Dravyaguna*, Sri

Dharmasthala Manjunatheshwara  
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Hassan.

Table 2: Properties of Kalkadrugs [5]

Drugs	Part used	Rasa	Guna	Virya	Vipaka	Doshagnatha
<i>Shatapushpa</i>	Seed	<i>Katu Tikta</i>	<i>Laghu Tikshna</i>	<i>Ushna</i>	<i>katu</i>	<i>Vata-kaphashamaka (Pacify Vata-Kapha)</i>
<i>Hapusha</i>	Seed	<i>Tikta katu kashaya</i>	<i>Guru, Mrudu</i>	<i>Ushna</i>	<i>Katu</i>	<i>Vata-Kaphahara</i>
<i>Priyangu</i>	Seed	<i>Kashaya Tiktha Madhura</i>	<i>Guru Ruksha</i>	<i>Sheetha</i>	<i>Katu</i>	<i>Vata-Pitta hara (Pacify Vata-Pitta)</i>
<i>Pippali</i>	Fruit	<i>Katu</i>	<i>Laghu, Snigdha, Tikshna</i>	<i>Anushna</i>	<i>Madhura</i>	<i>Tridoshashamaka</i>
<i>Yastimadhu</i>	Root	<i>Madhura</i>	<i>Guru, Snigdha</i>	<i>Sheetha</i>	<i>Madhura</i>	<i>Kapha-Vatashamaka</i>
<i>Bala</i>	Root	<i>Madhura</i>	<i>Guru, Snigdha</i>	<i>Sheetha</i>	<i>Madhura</i>	<i>Vata-Pita shamaka</i>
<i>Vatsakabeeja</i>	Seed	<i>Tikta Kashaya</i>	<i>Laghu, Ruksha</i>	<i>Sheetha</i>	<i>Katu</i>	
<i>Musta</i>	Rhizome	<i>Tikta katu kashaya</i>	<i>Laghu, Ruksha</i>	<i>Sheetha</i>	<i>Katu</i>	<i>Kapha-Pittahara</i>
<i>Rasanjana (Extract of Daruharidra)</i>	Bark	<i>Katu Tikta</i>	<i>Ruksha</i>	<i>Ushna</i>	<i>Katu</i>	<i>Kaphashamaka</i>

## II. Pharmaceutical work:

### II A. Preparation of Daruharidra kwatha [6]

– 600g of *Daruharidra* stem bark were obtained and properly cleaned to remove physical impurities. The barks were placed into a vessel of 12 L capacity, to which 9,600

ml of water was added and kept for boiling on moderate flame for a period of eight hours. Heating was continued until the liquid reduced to 1200 ml which was then filtered through a thin cloth.



Figure 1: Raw drug- Daruharidra



Figure 2: Preparation of kwatha

Figure 3: *Daruharidra Kwatha*Figure 4: Filtered *kwatha*

**II. B. Preparation of *Rasanjana* [7]**—In a vessel, 1200 ml of *Daruharidra kwatha* was kept for boiling over a low flame after adding 1200 ml of goat's milk. To prevent the content from sticking to the bottom of the vessel, the solution was constantly stirred for 4 hours. As the liquid took on a thicker consistency, the heating was continued till a semi solid

consistency was attained. Once the procedure was complete, the final product was immediately transferred into a big tray which was slightly greased with ghee. The tray was dried under sunshade for 3 days and the dried product was made into fine powder and preserved in an airtight container.



Goat's milk- 1200ml

Figure 5

Goat's milk added to  
*DaruharidraKashaya*

Figure 6

Continuous stirring till semi  
solid consistency is attained

Figure 7



Figure 8



Figure 9



Figure 10

**II.C. Mixing of Basti kalka churna-** All the nine drugs were taken in mentioned quantity and made into fine powder form separately,

then filtered with cloth and 5 gms each of all the drugs were mixed together uniformly and kept in air tight glass container.

Table 3: Ingredients and quantity of *churna* in Sample 1 and Sample 2

Sample 1		Sample 2	
Ingredients	Quantity	Ingredients	Quantity
<i>Shatapushpa</i>	5 grams	<i>Shatapushpa</i>	5 grams
<i>Hapusha,</i>	5 grams	<i>Hapusha,</i>	5 grams
<i>Priyangu</i>	5 grams	<i>Priyangu</i>	5 grams
<i>Pippali</i>	5 grams	<i>Pippali</i>	5 grams
<i>Madhuka</i>	5 grams	<i>Madhuka</i>	5 grams
<i>Bala</i>	5 grams	<i>Bala</i>	5 grams
<i>Vatsakabeeja</i>	5 grams	<i>Vatsakabeeja</i>	5 grams
<i>Musta</i>	5 grams	<i>Musta</i>	5 grams
<i>Rasanjana</i>	5 grams	<i>Daruharidra</i>	5 grams

### III. Analytical study of the prepared samples

**III.A. Total ash:** 2 g of sample was incinerated in a tarred platinum crucible at temperature 400<sup>0</sup>C (not exceeding 600<sup>0</sup>C) until carbon-free ash fumes were observed from the sample after 12min, and then the temperature was reduced to 350<sup>0</sup>C. Procedure was continued till the sample completely got converted to ash. Sample 1 and sample 2 took 3 hour 22min and 3hour 7 min respectively. Sample 2 took 15 minutes longer to convert

into ash. The percentage of ash was calculated with reference to the weight of the sample [8].

**III.B. Acid-insoluble ash:** The crucible containing total ash was transferred to a 250 ml beaker without loss of ash and 100 ml of diluted HCl was added. The crucible was washed with 10 ml of diluted HCL and transfers it to the beaker. The beaker was heated until the liquid started to boil. The insoluble matter was collected on ash less filter paper (Whatmann 41) and washed with hot water until the filtrate was neutral. The

filter paper containing the insoluble matter was transferred to the original crucible, dried on a hot plate, and ignited at a constant weight. The residue was allowed to cool in a suitable desiccator for 30 minutes and weighed. The percentage of acid-insoluble ash was calculated with reference to the air dried drug [9].

**III.C. Determination of pH:** 1 gram of sample was dissolved in 10 ml of distilled water and stirred well. The sample was used for the experiment. The instrument was switched on for 30 minutes to warm the pH meter. A first buffer solution was checked to know the accuracy of the pH meter. First, buffer solutions of pH 4, pH 7, and pH 9 were checked. Then the sample solutions were introduced and readings noted. The test was repeated four times and the average reading were taken as result [10].

**III.D. Water-soluble extractive:** 5g of air-dried drug were dissolved in 100 ml of distilled water in a conical flask for twenty-four hours, shaking frequently during the first six hours, and allowed to stand for eighteen

hours. This was filtered, and 25 ml of this liquid was pipetted and evaporated to dryness in a tarred flat-bottomed disc, kept on a water bath in a china dish and dried at 105 °C to a constant weight. The percentage of water soluble extractive with reference to air dried drug was calculated [11].

Water soluble extractive = (weight of dish + sample) – (weight of dish + residue) / Initial weight of sample × 100

**III.E. Loss on drying:** 10 g of drug was placed in a dish and weighed. It was kept on oven at 105°C for 5 hours and weighed again thereafter. Drying was continued and weighing at one hour interval until difference between two successive weighing's corresponded to not more than 0.25 per cent. Constant weight was reached when two consecutive weighing's after drying for 30 minutes and cooling for 30 minutes in a desiccator, showed not more than 0.01 g difference [12].

**RESULTS:** Following table shows the results of the tests for two samples of *Kalka dravya*–

Table 4: Results of Pharmaceutical study

S. No.	Materials	Quantity
1	<i>Daruharidra kwatha churna</i>	600 gm
2	Water added	9600 ml
3	Temperature	87.3°C
4	<i>Kashaya</i> obtained	1200 ml
5	Goat's Milk	1200 ml
8	Total Time taken	7 hrs
6	<i>Rasanjana</i> obtained	224 gm

Table 5: Results of Analytical study

S. No.	Analytical tests	Sample 1	Sample 2
1	Total Ash	6%	7.5%
2	Acid Insoluble Ash	1.5%	2.5%
3	Determination of pH	5.17%	5.10%
4	Water soluble extractive	16.8%	4.8%
5	Loss on drying	9.2%	8.4%
6	Sieve size	425 micron as per IS: 460	

## DISCUSSION:

*Erandamooladi Niruha Basti yoga* is a homogeneous solution prepared with *Madhu*, *Saindhava lavana*, *Sneha*, *Kalka*, *Kwatha* and *Gomutra* added consecutively and churned well. It is *deepana and lekhana* [13] in action and is indicated in pain at *Trika* (*Lumbosacral*), *Prusta* (*Gluteal region*), *Uru* (*Femoral*), *Janga* (*Calf Muscles*), *paada* (*Foot*). It pacifies vitiations due to *kaphavritavata* and is used in conditions such as retention of *Vata* (flatus), *Vit* (stool), *Mutra* (urine). It cures *Adhmana* (Tymphanites), *Ashmari* (stone in the urinary tract), *Sharkara* (Graveluria), *Aanaha* (Constipation and abdominal distension), *Arsa* (piles) and *Grahani pradosha* (Sprue syndrome) [14].

*Shatapushpa*, *Hapusha*, *Priyangu*, *Pippali*, *Yastimadhu*, *Bala*, *Rasanjana*, *Indrayava* and *Mustha* are the drugs used in *Kalka*. All the drugs can be directly used in powdered form except *Rasanjana*. *Rasanjana* is one of the *Rasakriya* preparation and almost 3-4 days are needed to obtain the product. The consistency is in granular form and certain amount of *snigdhatwa* is also present. It is

observed that the people tend to use *Daruharidra* directly without taking the Risk of preparation of *Rasanjana*.

*Rasanjana* is also known as *Rasagarbha*, *Tarksyajana*, and *Tarksyasaila* and is mainly used in *Netrachikitsa*, *Vrana*, *Rasayana*, pacifies *Kapha*, acts as a tonic and expectorant [15]. *Rasanjana* is a concentrated extract prepared with the roots and stem bark of *Daruharidra* (*B.aristata*) and Goat's milk. Cow's milk can be used instead of Goat's milk for the preparation [16]. The preparation is carried out in two steps. While making *kwatha* of *Daruharidra*, due to the *agnisamskara* (*boiling*), water-soluble principles of herbal drug are extracted into the decoction. During the preparation of *Rasanjana* with Goat's milk, a concentrated extract of drug will be available by evaporating the moisture content of *Kwatha*. This can be administered both internally and externally.

Goat's milk is *Laghu* having *Katu* and *Tikta Rasa*. It rids off *Shosha* (*Emaciation*), *Jwara* (*Fever*), *Shwasa* (*Asthma*), *Raktha pitta* (*Bleeding abnormality*) and *Atisara* (*Diarrhea*) [17]. It has similar properties to

Cow's milk and apart from that, *Deepana* (Digestive), *Grahi* (Absorbent), *Kasa* (Cough), and *Sarvavyadhikaram* (Destroy all diseases) [18].

Traditionally *Daruharidra* is used for its antibacterial, antipyretic, anti-inflammatory, laxative, immunostimulant and antihemorrhagic activity [19]. *Rasanjana* which is *ghana* version made from *Daruharidra* and goat's milk is used as a remedy for treating Eye disorders, Ear disorders, Jaundice, Diabetes, fever etc. [20]. Analytical testing observed that the moisture value is 6%, total ash is 7.2%, Acid insoluble ash is 55.1%, Water soluble ash value is 60.1%, Alcohol soluble extractive value is 15%.

The total ash value determines the percentage of non-volatile inorganic content of the sample, 6% for Sample 1 and 7.5% for Sample 2. This value determines the percentage of inorganic content of the sample. Sample 1 was found to contain 1.5% of acid insoluble ash and Sample 2 was 2.5%. This procedure determines the quantity of acid insoluble content contributing to the weight of ash.

Water-soluble extractive value determines the nature of the chemical constituents present in the drug, which is useful for estimating the character of chemical

constituents that are soluble in water. *Sample 1* was found to contain 16.8% and *Sample 2* was 4.8% water soluble extract value. So *Sample 2* extract was less soluble in water as compared to *Sample 1*.

Moisture content (loss of drying) determines the quantity of moisture in a sample. Stability, shelf life, and microbiological safety depend on this value. *Sample 1* and *Sample 2* are organic in nature; therefore, the values were found to be 9.2% and 8.4%, respectively.

Ash contains inorganic radicals and inorganic variables like phosphates, carbonates, and silicates of sodium, potassium, magnesium, calcium, etc., and calcium oxalate, silica, and carbonate content, respectively. Such variables are then removed by treating the sample with acid, and this value determines the percentage of inorganic content of the sample. *Sample 1* was found to contain 1.5% of acid insoluble ash and *Sample 2* was 2.5%. This procedure determines the quantity of acid insoluble content contributing to the weight of ash.

*Daruharidra* can be used as substitute for *Rasanjana* in case of scarcity. *Daruharidra* is *pittashamaka*, while *Rasanjana* is *kaphashamaka* [21]. In analytical study *Rasanjana* showed water soluble extract value more than *Daruharidra*.

So, in *basti*, *Rasanjana* is typically preferred for *kalkachurna*, but due to the market's deficit of authentic quality, *Rasanjana*'s moisture content could ruin the other *kalkadravyas* as well as decrease the shelf life of the kalka churna when packed together. Alternative drug is still required because of this reason. So alternatively, vacuum packing can be done in such cases but it is cost ineffective and packing is not easily available.

### CONCLUSION

The main focus of the present study was to evaluate substitution of *Rasanjana* with *Daruharidra*. However, the results of study provide evidence that the water soluble extractive value is more in *Rasanjana* than *Daruharidra*. So, it can be concluded that in preparation of *Erandamuladi Niruha Basti*, *Rasanjana* is preferable than *Daruharidra* as an ingredient of *Kalka churna*.

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### Conflicts of interest

The authors have no Conflict of interest

### REFERENCE:

- [1] Charakasamhitha, Siddhisthana, Vaidyajadavajitrikanji edited, Agnivesa, Charaka Samhitha revised

by charaka and Dridhabala, Edition 2013(reprint), chaukambhaprakashan, Varanasi, 2013, 696.

- [2] Sastry J.L.N, Dravyagunavijnana, first 2004, vol 2, chaukhambhaorientalia, Varanasi, 2004, pg.no 54, 87, 154, 258, 328, 452, 551, 893, 968.
- [3] Lalashaligram, Kanthinarayana Mishra, Bhavaprakasha, Khemrajshrikrishnadas, Mumbai, 2003, pg.no 191.
- [4] Vasudevan Nampoothiri M.R, Mahadevan L, Jayadeep S, Principles and practice of Vasti, Edition 2014, series 3, Sarada Mahadeva Iyer, ayurvedic Educational and Charitable Trust, Tamilnadu, 2014, pg.no 172.
- [5] Shastry J.L.N, Dravyagunavijnana, first 2004, vol 2, chaukhambhaorientalia, Varanasi, 2004, pg.no 54, 87, 154, 258, 328, 452, 551, 893, 968.
- [6] Ravindraangadi, The text book of Bhaisajyakalpanavijnana (Pharmaceutical Science), Revised edition 2016, Chaukhamba Surbharati Prakashan, Varanasi, 2016, pg no 124.
- [7] Lalashaligram, Kanthinarayana Mishra, Bhavaprakasha, Khemrajshri krishnadas, Mumbai, 2003, pg.no 191.
- [8] Prof. Lavekar G.S. et al, Laboratory

- guide for the analysis of ayurveda and siddha formulation, New Delhi, Central council for research in ayurveda and siddha, 2010, p. no. 28
- [9] Prof. Lavekar G.S. *et al*, Laboratory guide for the analysis of ayurveda and siddha formulation, New Delhi, Central council for research in ayurveda and siddha, 2010, p. no. 28
- [10] Prof. Lavekar G.S. *et al*, Laboratory guide for the analysis of ayurveda and siddha formulation, New Delhi, Central council for research in ayurveda and siddha, 2010, p. no. 42
- [11] Prof. Lavekar G.S. *et al*, Laboratory guide for the analysis of ayurveda and siddha formulation, New Delhi, Central council for research in ayurveda and siddha, 2010, p. no. 29
- [12] Prof. Lavekar G.S. *et al*, Laboratory guide for the analysis of ayurveda and siddha formulation, New Delhi, Central council for research in ayurveda and siddha, 2010, p. no. 27
- [13] Charakasamhitha, Siddhithana, Vaidyasadavajitrikanji edited, Agnivesa, CharakaSamhitha revised by charaka and Dridhabala, Edition 2013(reprint), chaukambhaprakashan, Varanasi, 2013, 696.
- [14] Charakasamhitha, Siddhithana, Vaidyasadavajitrikanji edited, Agnivesa, CharakaSamhitha revised by charaka and Dridhabala, Edition 2013(reprint), chaukambhaprakashan, Varanasi, 2013, 696.
- [15] Sri Bhavamisra, Bhava Prakash Anighandu, 9<sup>th</sup>, vol 1, chaukhambhabharati academy, Varanasi, 1993, 122.
- [16] Sameeksha Gurav, Gurav Santosh Kishor, Pharmaceutico-analytical standardization of rasanjana-a herbal extract, Rasamruta, 8:2, 2016, 6.
- [17] Ashtangahridaya, sutrasthana, Paradakara HSS edited, vagbhata, ashtangahridaya, 2012 (reprint), vol 1, chaukhambha Sanskrit sansthan, Varanasi, 2012, 69.
- [18] Susrutasamhitha, sutrasthana, vaidyasadavajitrikamjiacharya edited, susruta, susrutasamhitha, 7<sup>th</sup>, vol 1, chaukhambhaorientalia, Varanasi, 2002, 201.
- [19] Shweta Jain, ShaliniTripathi, Pushpendra Kumar Tripathi, 2023. Pharmacognostic and phytochemical assay of BerberisAristata dc roots. Journal of medical pharmaceutical and allied sciences, V 12 - I 3, Pages - 5775 – 5779. Doi: 10.55522/jmpas.

V12I3.4800.

- [20] Kanchan Bhawarlal Suthar *et al*:  
Pharmaceutical and Analytical Study  
of Rasanjan W.S.R Ayurved Prakash  
Samhita. International Ayurvedic  
Medical Journal {online} 2020
- [21] Sri Bhavamisra, Bhava Prakash  
Anighandu, 9<sup>th</sup>, vol 1,  
chauhambhabharati academy,  
Varanasi, 1993, 122.