



## REVIEW ARTICLE

### UTILITY OF *RASADRAVYAS* IN *PANCHAKARMA*

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#### ABSTRACT

**Abstract:** *Ayurveda* is an ancient and traditional system of medicine dealing with various aspects of Ayu i.e life. The *Astanga Ayurveda* or the 8 important branches of the science emphasize the prevention of diseases and cure of existing ailments. *Panchakarma* is one of the part of *Ayurveda* which focuses on using five important therapies in curing the diseases. They include *Vamana* (emesis), *Virechana* (purgation), *Basti*(enema), *Nasya* (errhines) and *Raktamokshana* (bloodletting). *Rasadravyas* are drugs of mineral and metallic origin which are mainly dealt in another branch called *Rasashastra* which focuses on usage of such metals/minerals therapeutically. Though *Panchakarma* as well as *Rasashastra* are not included in *Astanga Ayurveda*, the utility of both the sciences are found in all the eight branches. The present article aims to establish the utility of drugs of metal/mineral origin in the field of *Panchakarma*.

**Key words:** *Rasadravyas*, *Panchakarma*, *Rasashastra*, *Astanga Ayurveda*

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## INTRODUCTION:

*Panchakarma* is a unique therapy in *Ayurveda* which focuses on detoxification, rejuvenation of the body as well as treating ailments through *Shodhana karma*. The *Shodhana karma* is further classified into *Antarashraya Shodhana* and *Bahirashraya Shodhana*. The *Antarashraya Shodhana* includes *Vamana, Virechana, Basti, Nasya, Raktamokshana*. *Bahirashraya Shodhana* includes *Shastra* (use of sharp instruments), *Kshara* (caustics), *Agni* (cauterization), *Lepa* (different external applications) etc.<sup>[1]</sup> The therapies are divided into *Purvakarma* (pre procedures), *Pradhana karma* (main procedure), *Paschat karma* (post procedures).

*Rasadavyas* broadly taken as drugs of metals/mineral origin. In *Rasashastra*, different metals, minerals, herbal drugs – caustics, poisons are all dealt in detail. They are classified in to different groups such as *Maharasa, Uparasas, Sadharana Rasas, Dhātu, Upadhātu, Ratna, Uparatna,*

*Sudhavarga, Sikata Varga, Malla varga, Lavanas, Ksharas, Visha* and *Upavishas* <sup>[2]</sup>. In this article *Visha* and *Upavisha dravyas* are not being dealt.

The usage of *Rasadavyas* in *Panchakarma* can be broadly divided into two purposes. One is the use of metals/minerals as *oushadhi dravyas* (medicines) in formulations used for the *Panchakarma* therapies. The other one is the utility of *Rasa dravyas* in instrumentation of different vessels used in *Panchakarma* treatment

**Materials and Methods:** Different classical literatures were scanned to identify the use of *Rasa dravyas* in *Panchakarma* therapies. The usage is classified in to *oushadhi dravya* and for instrumentation of *Paatra/vessels* in *Panchakarma*. The rationale behind the usage was scrutinized and tried to scientifically validate the same.

*Rasadavyas* which are commonly used in the field of *Panchakarma* and which will be discussed in the article are as follows:

**Table 1: Showing *Rasadavyas*: of *Rasa, Maharasas* and their properties**

<i>Vargas</i>	<i>Rasa dravyas</i> with common names	Chemical Names	<i>Rasa</i> (taste)	<i>Veerya</i>	<i>Doshahara</i>	<i>Guna karma</i>
<i>Rasa</i> <sup>[3]</sup>	Mercury	Hydrargyrum	<i>ShadRasa</i> (possess all 6 <i>Rasas</i> )	-	<i>Tridoshaghna</i>	<i>Yogavahi, Rasayana, dipana, ayushkara, vajikara, Balya, Shodhana, ropana, krimighna</i>
<i>Maharasas</i>	<i>Abhraka</i> <sup>[4]</sup> – mica	Biotite	<i>Madhura</i>	<i>Sheeta</i>	<i>Vatapitta hara Akapham</i>	<i>Vrushya</i> (aphrodisiac), <i>Balya</i> (strengthening),

						<i>Deepana</i>
	<i>Makshika</i> <sup>[5]</sup>	Copper pyrite	<i>Tikta Madhura</i>	<i>Sheeta</i>	<i>kaphapittahara,</i>	<i>Vrushya, Balya, Rasayana</i> (rejuvenating, <i>krimi Kushtha hara</i> (pacifies skin disorder and anti-microbial)
	<i>Shilajatu</i> <sup>[6]</sup> – Bitumen	Asphaltum punjainum	<i>Madhura,</i>	<i>Sheeta</i>	<i>vatapitta hara</i>	<i>Agnimandya hara</i> (improves digestion), <i>medachedanam</i> (scarifies body fat), <i>Aamapaham</i>
	<i>Sasyaka</i> <sup>[7]</sup> – blue vitriol	Copper sulphate	<i>Katu, Kashaya, Madhura</i>	<i>Ushna</i>	<i>kaphapittahara,</i>	<i>Lekhana</i> (scraping), <i>Bhedana</i> (disintegrates mala), <i>Vamaka</i> (emetic), <i>krimigna, Rasayana, Balya, Chakshushya</i> (improves vision), <i>medohara</i> (reduces body fat), <i>twagdosahara, vanhikara, rechaka</i> (purgative)

**Table 2: Showing Rasadravyas of UpaRasas**

<i>UpaRasas</i>	<i>Gandhaka</i> <sup>[8]</sup>	Sulphur	<i>Katu, Tikta, Kashaya</i>	<i>Ushna</i>	<i>pittala, kaphavata hara,</i>	<i>Deepana, Pachana, vishahara</i> (pacifies visha), <i>krimighna, Rasayana</i>
	<i>Gairika</i> <sup>[9]</sup> – red ochre	Ferrous oxide	<i>Madhura, Tikta, Kashaya</i>	<i>Sheeta</i>	<i>pittakapha hara,</i>	<i>Chakshushya, vishahara, Balya, kandughna, Vranaropana</i> (wound healing), <i>Dahahara</i> (pacifies burning sensation), <i>Raktahara</i> (hemostatic).
	<i>Kasisa</i> <sup>[10]</sup> – green	Ferrous	<i>Tikta, Amla, k</i>	<i>Ushna</i>	<i>vatakapha hara</i>	<i>Keshya</i> (promotes hair

	vitriol	sulphate	<i>ashya,kshar eeya Rasa</i>			growth), <i>Chakshushya</i> , <i>vishahara</i> , <i>switrghna</i> (pacifies leukoderma), <i>Deepana</i> , <i>Vrana ropana</i> , <i>Rasayana, ropana</i> , <i>jantughna</i> , <i>Raktavardhana</i> (improv es blood), - <i>kandughna</i> (reduce itching) <i>rajpravartaka</i> (induces menstruation).
	<i>Sphatika</i> <sup>[11]</sup>	Alum	<i>Kashaya,Kat u,Amla,Mad hura Rasa</i> ,	<i>Ushna</i>	<i>Tridosahara</i> , <i>sleshmapittagna</i> ,	<i>Kantya</i> (improves voice), <i>Keshya</i> , <i>Vranagna, vishagna</i> , <i>netrya</i> , <i>garadoshanashani</i> (dest roys <i>garavisha</i> ), <i>yonisankochakara</i> (cont racts vagina), <i>Vranashodhani</i> (cleanse wound) <i>Raktastambhani</i> (hemos tatic), <i>Kushthahara</i>
	<i>Haratala</i> <sup>[12]</sup> orpiment	- Arsenic trisulphide	<i>Katu Tikta Kashaya Rasa</i>	<i>Ushna</i>	<i>vatashleshmahar a, Tridosahara</i>	<i>kustahara</i> , <i>vishaRaktabhutanut</i> , <i>romaharaka</i> (depilatory ) , <i>Deepana, Vrushya</i> , <i>Balya</i> , <i>ojaskara</i> (improves <i>oja</i> )
	<i>Manashila</i> <sup>[13]</sup> realgar	- Arsenic disulphide	<i>Tikta Katu Rasa</i>	<i>Ushna</i>	<i>Kaphavatahara</i> , <i>asrunut</i>	<i>Rasayana</i> , <i>Lekhana,vishagna</i> , <i>shoshanai</i> (dries up), <i>varnakara</i> (improves complexion), <i>bhutgni</i> (antimicrobial)
	<i>Kankushtha</i> <sup>[14]</sup>	Garcinia	<i>Tikta Katu</i>	<i>Ushna</i>		<i>Atirechana</i> ,

		morella				shoolahara(subsides pain)
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**Anjana:** included under *UpaRasas*. 5 different types of *Anjanas* are told in *Rasashastra*. They are: *Souveeranajana*, *SrotoAnjana*, *RasAnjana*, *NeelAnjana* and *PushpAnjana*.

**Table 3: Showing Anjana dravyas**

<i>Anjanas</i>	<i>Srotonjana</i> <sup>[15]</sup>	Antimony sulphide	<i>Kashaya, Madhura</i>	<i>Sheeta</i>	<i>Kaphapittaanut</i>	<i>Lekhana, netrya, graahi, asruhut</i>
	<i>SouvirAnjana</i> <sup>[15]</sup>		<i>Tikta, Katu, Kashaya</i>	<i>Sheeta</i>	<i>Tridosahara</i>	<i>VranaShodhana, ropana, drikprasadana, graahi, Lekhana, netrya</i>
	<i>RasAnjana</i> <sup>[16]</sup>	Prepared from <i>Berberis aristata</i> , some take it as yellow oxide of mercury	<i>Tikta, Katu, Madhura</i>	<i>Sheeta</i>	<i>Vatapittanashaka</i>	<i>Chakshushya, Varnya, kushtagna, drikprasadana, sthoulyahara, krimighna, Lekhana</i>
	<i>PushpAnjana</i> <sup>[16]</sup>	Zinc oxide	<i>Kshariya(alkaline)</i>	<i>Sheeta</i>	-	<i>Hidhmaghna, sarvakshiroganut, vishaghna,</i>
	<i>NeelAnjana</i> <sup>[17]</sup>	Lead sulphide	-	-	<i>Tridoshanut</i>	<i>Netrya, Rasayana</i>

**Table 4: Showing Rasadravyas of Sadharana Rasa**

<i>Sadharana Rasas</i>	<i>Kampillaka</i> <sup>[18]</sup>	<i>Mallotus philippinesis</i>	<i>Katu, ishata, Amla,</i>	<i>Ushna</i>	<i>Vatapittakaphahara Asrujit</i>	<i>Rechaka-vibhedhi(purgative), krimighna, Pachana,</i>
	<i>Gouripashana</i> <sup>[19]</sup>	<i>Arsenenious</i>	<i>Tikta</i>	<i>Ushna</i>	<i>Tridoshagna</i>	<i>Kledana(moistens)</i>

		oxide				
	<i>Navasadara</i> <sup>[20]</sup>	Ammonium chloride	<i>Lavana, Amla, kashaya</i>	<i>Sheeta</i>	<i>Tridosahara</i>	<i>Deepana, bhuktamamasajara</i> (digests consumed meat), <i>Pachana</i>
	<i>Kaparda</i> <sup>[21]</sup> – cowries	Calcium carbonate	<i>KatuTikta</i>	<i>Ushna</i>	<i>Kaphavataghna</i>	<i>Deepana, Vrushya, netrya, Rasayana, shukrala</i> (improves semen)
	<i>Hingula</i> <sup>[22]</sup> – cinnabar	Mercuric sulphide	<i>KatuTiktaKashaya</i>	<i>Ushna</i>	<i>Kaphapittahara</i>	<i>Deepana, atiRasayana, Vrushya, Balya,</i>

**Table 5: Showing Rasadravyas of Lohas**

<i>Lohas</i>	<i>Swarna</i> <sup>[23]</sup> - gold	Aurum	<i>Kashaya Tikta Madhura Katu</i>	<i>Sheeta</i>	<i>Tridoshaghna</i> (alleviates all the doshas)	<i>Balya</i> (strengthens body), <i>Rasayana</i> (rejuvenation of body), <i>Ayushkara</i> (longevity), <i>Ojovivardhana, Vishagarahara</i>
	<i>Rajata</i> <sup>[24]</sup> – silver	Argentum	<i>Kashaya Amla Madhura</i>	<i>Sheeta</i>	<i>Vatapittahara</i>	<i>Lekhana, vayasthapana</i> (delays aging), <i>Varnya</i> (improves complexion), <i>Vrshya, Balya, Medhya</i> (improves intellect), <i>Deepana</i>
	<i>Tamra</i> <sup>[25]</sup> – copper	Cuprum	<i>Kashaya Tikta Madhura Amla</i>	<i>Ushna</i>	<i>Vatakaphahara, Pittakaphahara</i> (alleviates pitta and kapha)	<i>HridviShodhana, Garahara</i> (anti-poisonous), <i>Rasayana</i> (rejuvenation of body), useful in <i>visha dosha</i>
	<i>Loha</i> <sup>[26]</sup> – iron	Ferrum	<i>Tikta Madhura Kashaya</i>	<i>Sheeta</i>	<i>Tridosahara</i>	<i>Lekhana, Balya, Vrushya, ayushya</i> (increases life span), <i>Chakshushya, yogavahi</i> (catalyst),

						<i>rudhirakrit</i> (hematinic), <i>koshtashodhi</i> (cleanse GIT), <i>Rasayana</i>
	<i>Trapu</i> <sup>[27]</sup>	Stannum	<i>Tikta Amla</i> <i>Katu kshara</i>	<i>Ushna</i>	<i>Kaphapitta hara</i>	<i>Chakshushya, Balya, Vrushya, medohara, Deepana, Pachana, Varnya, vishagna, krimigna,</i>
	<i>Riti</i> <sup>[28]</sup>	Brass	<i>Tikta</i> <i>Kashaya</i> <i>Katu Lavana</i>	<i>Ushna</i>	<i>Vatapitaa hara</i> <i>Shleshmapittahara</i>	<i>Rasayana, Vrushya, krimigna, Shodhana, vishahara, natiLekhana</i>

**Table 6: Showing Rasadravyas of Ratnas and UpaRatnas**

<i>Ratnas</i> <sup>[29]</sup>	<i>Pravala</i> – coral	Calcium carbonate	<i>Kashya</i> <i>Madhura</i> <i>Amla</i>	<i>Sheeta</i>	<i>Pittahara, Tridoshahara</i>	<i>Deepana, Pachana, kantikara, Vrushya, pushtikara</i> (nourishes body), <i>Balya, Chakshushya,</i>
<i>UpaRatna</i>	<i>Suryakanta</i> <sup>[30]</sup>	Sunstone		<i>Ushna</i>	<i>Vatashleshmahara</i>	<i>Rasayana, Medhya,</i>
	<i>Chandrakanta</i> <sup>[31]</sup>	Moon stone		<i>Sheeta</i>	<i>PittaRaktahara, asrunut</i>	<i>Tapanut</i> (reduced body temperature), <i>Dahashamaka</i> (reduces burning sensation)

- ❖ **Rasas:** *Madhura* – sweet, *Amla* – sour, *Lavana* – salty, *Katu* – pungent, *Tikta*-bitter, *Kashaya* – astringent

- ❖ **Virya:** *Ushna* – hot, *Sheeta* – cold

**Sudhavarga dravyas** : These are basically calcium compounds . they include *Sudha* (Limestone), *Shankha* (Conch), *Shukti* (Oyster), *Pravala* (Coral), *Varatika*(Cowries), *Mukta*

(Pearl), *Shrunga* (Horn), *Kukkutandatwak* (Egg Shell), *Khatika*( Chalk) etc.

#### **Utility of Rasadravyas as Oushadhi in Panchakarma:**

There are many number of *oushadhi* yogas containing *Rasadravyas* as well as different drug combinations using metals/minerals/herbal drugs which are used in *Panchakarma* treatment. It is impossible to

cover all such *yogas* and combinations. Here few important and commonly used *yogas* alone are being dealt.

**Deepana Pachana:** These are pre procedures done prior to the *Pradhana karma*. The aim of doing these are: digestion of undigested food particles, improves *agni*(metabolism), helps in *doshagati* i.e movement of *doshas* viz *vata*, *pitta*, *kapha* which are in their *prakupita avastha* from *shaakha*/extremities to *koshtha*/GIT such that they can be easily expelled from the *koshtha*.

There are many *yogas* containing *Rasadravyas* for *Deepana Pachana*. A few examples are as follows:

**Churnas:** *Chitrakadi churna*, *Lavana bhaskara churna* etc

**Bhasmas:** *Shankha bhasma*, *Abhraka bhasma*, *Swarna bhasma*, *Rajata bhasma* etc

**Khalwiya Rasayogas:** *Mahavanhivajra Rasa*, *Gaganeshwara Rasa*, *Agnikumara Rasa*, *Lokanatha Rasa*, *Agnitundi Vati*, *Sutashekhara Rasa*, *Laghusutashekhara Rasa*, *Kamadugha Rasa*, *Shankha Vati* etc

**Kupi pakwa Rasayanas:** *Rasasindura*, *Rasapushpa*, *Rasakarpoora*

**Parpati kalpas:** *Loha parpati*

**Pottali:** *Hemagarbha Pottali*,

Most of the above said individual *Rasa yogas* such as *bhasmas* or in combination with herbal drugs such as *khalwi Rasayanas* contain

*Rasa dravyas* have properties of *Deepana*, *Pachana*.

**Kajjali:** A combination of *Parada* (mercury) and *Gandhaka* (Sulphur) is used as base in most of *Khalwi*, *Parpati*, *Kupi*, *Pottali kalpas*. It is postulated that well prepared *Kajjali* in combinations with different *sahapanas* and *anupanas* (adjuvants) can be used to treat all the diseases and it acts as aphrodisiac and pacifies all three *doshas* [32]. The *Kajjali* may increase the bioavailability of other herbal drugs used in the *yogas*, thus augmenting the desired effect. It is believed that there is sustained release of *yogas* with *Kajjali* may further enhance the pharmacological action.

The selection of *yoga* depends on the nature of disease. For example, in case of *Amlapitta*, where there is increase of *Ushna* guna of *pitta*, *Kamadugha Rasa* is used whereas when there is increase of *drava* guna of *pitta*, *Sutashekhara* is used.

**Snehana:** This is also a *Purvakarma*. The objective is propulsion of *doshas* from *shaakha* to *koshtha*. This is achieved by the breakdown of *malasanghata* (accumulated mala or impurities in other sites) and controlling the movement by pacifying the *Vata dosha* [33]. *Snehana* includes both *Baahya* (external applications) and *Abhyantara Snehana* (internal administration of *sneha*)

**Abhyantara Snehapaana:**



**Shodhananga** <sup>[34]</sup>: it is intake of *acha sneha* given in maximum dose after the digestion of previous food prior to *Shodhana karma* for *utkelshana* of the *prakupita doshas*

**Shamananga** <sup>[34]</sup>: it is for mitigation of *doshas*/ for palliating the diseases, consumed when

the person is hungry and without food, given in medium dosage

**Brumhananga** <sup>[55]</sup>: it is for *brumhanartha* purpose i.e for nourishment, should be given mixed with meat soup, wine etc and consumed along with food in minimum dose.

**Table 7: Following are the types of *Snehapana* along with their *yogas* and specific *Rasadravayas* as the ingredients.**

S.no	Sneha	Rasadravaya	Indication	Type of snehapana
1	<i>Shatavari ghrta</i> <sup>[36]</sup>	<i>Adrija/ Shilajatu</i>	<i>Mutrakrichra, mutradosh a, sharkara</i>	<i>Shamanartha sneha</i>
2	<i>Modaka twagadi ghrta</i> <sup>[37]</sup>	<i>Adrija/ Shilajatu</i>	<i>Asrigdhara, daruna asthisrava</i>	<i>Shamanartha sneha</i>
3	<i>Varahyadi ghrta</i> <sup>[38]</sup>	<i>Gairika RasAnjana</i>	<i>Yoni roga</i>	<i>Shamanartha sneha</i>
4	<i>Vastiamayana taka ghrta</i> <sup>[39]</sup>	<i>Shilajatu</i>	<i>Bastigata roga Prameha</i>	<i>Shodhanartha and Shamanartha sneha</i>
5	<i>Trikantaka ghrta</i> <sup>[40]</sup>	<i>Girijatu/Shilajatu</i>	<i>Mutradosha Prameha Sharakara, ashmari</i>	<i>Shodhanartha and Shamanartha sneha</i>

**Shilajatu:**

- 1) *Shilajatu* is ingredient in *snehas* mainly used in *Prameha, Mutrarogas* i.e mainly disorders of urinary tract and in Diabetes.
- 2) *Shilajatu* is classically claimed to be *Mutrala* (diuretic), *Yogavahi* and *Rasyana* <sup>[41]</sup>.
- 3) *Shilajit* is composed mainly of humic substances, including fulvic acid, that account for around 60% to 80% of the

total nutraceutical compound plus some oligo elements including selenium of antiaging properties. Other molecules present in *shilajit* preparations are eldagic acid, some fatty acids, resins, latex, gums, albumins, triterpenes, sterols, aromatic carboxylic acids, 3,4-benzocoumarins, amino acids, polyphenols, and phenolic lipids <sup>[42]</sup>.

**Probable action:** Experimental studies reveal that *Shilajatu* may be associated with phenomenon of reducing direct sugar and lipid from gut, thereby affecting the overall metabolic syndrome along with dyslipidemia . Fulvic acid acts as a carrier molecule in the human system, helps in the transportation of nutrients into the deep tissues, and removes deep-seated toxins from the body [43]. It may have the potential of reducing cellular sensitivity towards circulating insulin and some potential of correcting dyslipidemia at hepatic level [44].

**Gairika:** in *Varahyadi ghruta* indicated in *Yoni roga*. Almost all the other ingredients in this *yoga* such as *Triphala*, *Raktachandana*, *Paatha*, *Manjishta*, *Anata*, *Dadima* etc have properties of *Pitta hara*, *Rakta shodhaka*. *Gairika* also is told to pacify *Rakta*, *pitta* and is indicated in *Asrigdhara*. Also *Gairika* is indicated in *Pitta* and *Raktajanya rogas* because of its *Swadu*, *Sheeta gunas*.

**Rasanjana:** this is a controversial drug. Few opine it is yellow oxide of mercury while others take it as solidified decoction of *Daruharidra/ berberis aristata* [45]. It is found in *Varahyadi ghruta* indicated in *Yoni roga*. It is said to be *vata*, *pitta* and, *asrak nashana*.

Both *Gairika* and *Rasanjana* are *pitta shamaka*, *Rakta shodhaka*. Hence may be used in *Yoni rogas* where *pitta* is predominant and also disorders where there is excess bleeding. They may arrest the excess bleeding and *Gairika* also acts as hematinic improving the blood volume to compensate the loss.

Apart from the above *yogas*, different *bhasmas* such as *Kasisa*, *Abhraka*, *Makshika* etc. may be added to the *sneha* and administered internally specific to specific diseases. Example: *Kasisa bhasma* used along with *sneha* in case of *Pandu*.

**Bahya Snehana:** it includes applications *sneha dravyas* externally

**Abhyanga:** it is a procedure where *sneha* is applied either *sarvanga* (throughout body) or *sthanika* (locally) in the direction of hair.

**Kavala:** gargling *sneha dravyas* in the mouth.

**Gandusha:** holding *sneha dravyas* in the mouth.

**Karnapoorana:** filling the ear with particular *sneha*

**Moordhni taila:** this includes *Shiroabhyanga* (head massage with *sneha*), *Shirodhara* (pouring of *sneha* on forehead), *Shiropichu* (application of swab soaked in *sneha* over the vertex), *ShiroBasti* (retention of *sneha* over the scalp using *charmapatta*)

**Table no. 8 Sneha kalpana containing Rasadravya**

Yoga	Type of <i>bahya sneha</i>	Indication	Rasadravyas
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<i>Kshara taila</i> <sup>[46]</sup>	<i>Karnapoorana</i>	<i>Karnaroga</i>	<i>PanchaLavana,</i> <i>RasAnjana</i>
<i>Kasisadi taila</i> <sup>[47]</sup>	<i>Abhyanga</i>	<i>Arshas</i>	<i>Kasisa</i> <i>Manashila</i> <i>Saidhava Haratala</i>
<i>Marichadi taila</i> <sup>[48]</sup>	<i>Abhyanga</i>	<i>Kushta</i>	<i>Haratala</i> <i>Manashila</i>
<i>Jatyadi ghrta</i> <sup>[49]</sup>	<i>Lepa</i>	<i>NadiVrana</i> <i>Vrana</i>	<i>Tuttha</i>
<i>Irimedadi taila</i> <sup>[50]</sup>	<i>Kavala, Gandusha</i>	<i>Dantaroga</i>	<i>Gairika</i>
<i>Bhringaraja taila</i> <sup>[51]</sup>	<i>Moordhni taila</i>	<i>Palitya</i> <i>Imdralupta</i> <i>Darunaka</i>	<i>Lohakitta</i>
<i>Vajri taila</i> <sup>[52]</sup>	<i>Abhyangartha</i>	<i>Kushta</i>	<i>Gandhaka</i> <i>Haratala</i> <i>Manashila</i> <i>Sarjakshara</i>
<i>Phenosiradi taila</i> <sup>[53]</sup>	<i>Abhyanga</i>	<i>Jwara</i>	<i>Samudraphena</i> <i>RasAnjana</i>
<i>Kushtantaka taila</i> <sup>[54]</sup>	<i>Abhyanga</i>	<i>Kushtha</i>	<i>Parada</i> <i>Gandhaka</i> <i>Trikantha ( Suryakanta,</i> <i>chandrakanata,</i> <i>ayaskanta)</i>
<i>Vranabhairava taila</i> <sup>[55]</sup>	<i>Abhyanga</i>	<i>Vrana</i>	<i>Hingula</i> <i>Haratala</i> <i>Manashila</i> <i>Tuttha dwaya</i> <i>Gandhaka sarjaRasa</i> <i>Gouripashana</i> <i>Navasara</i>
<i>Kanakaksheeri taila</i> <sup>[56]</sup>	<i>Abhyanga</i>	<i>Kushtha</i>	<i>Tuttha</i> <i>Haratala</i> <i>Kampillaka</i> <i>Sarjakshara</i> <i>Kasisa</i>
<i>Tiktekshwakadi taila</i> <sup>[57]</sup>	<i>Abhyanga</i>	<i>Kushtha</i>	<i>Kasisa, tuttha</i>

### **Rationale of using *Rasadravyas* in *tailas*:**

***Haratala, Manashila***: they are basically arsenic compounds.

- 1) Their use is mainly in treatment of *Kushtha, switra, Vrana* i.e skin diseases and wounds. Probable mode of action: They may initially cause apoptosis in diseases skin leading to death of diseases after which they induce angiogenesis i.e genesis of new blood vessels from the existing blood vessels there by remodeling and repair of damaged tissue takes place.
- 2) In *Kasisadintaila*: used in case of *arshas*. Yoga itself is claimed as *arsha shatana* i.e it destroys *arsha* with *kshariya guna* without causing damage to normal structure of *guda*. *Manashila* possess *Lekhana* property i.e scraping which may help in reduction on size of the haemorrhoids along with medicinal effects such as *bhutagni* (antimicrobial). *Haratala* is indicated in *Gudaamaya*. It can be used in *Arshas* with *Vata* and *kapha* predominance.

***Tuttha***: it is mainly used in *yogas* of *Vrana, kustha, nadvrana*. It is classically claimed to have *Lekhana, krimighna* and *twakdoshahara*. By its *Lekhana* property it scrapes the dead tissue in wounds and skin diseases. *Tuttha*

*bhasma* has good antifungal and antimicrobial action thus helps in wound healing<sup>[58]</sup>.

***Kasisa***: in *yogas* of *arsha, Kushtha*. It is considered to be *jantughna, ropana, switragna, Raktavardhana, kandughna*. It acts well in *arshas, Kushtha* with *vatakapha* predominance. Its antimicrobial activity prevents infection in both cases.

***Lohakitta***: The iron oxide. It is found in treatment of *Palitya, indralupta darunaka*. It has *Kashaya Madhura Rasa, Sheeta veerya, pittanashaka, Vrushya, dipana, Raktavridhikaram param* (best haematenic)<sup>[59]</sup> The formulation acts as natural hair dye a combination of organic substances with metals for a richer and lasting shades. Natural dyes also act as mordants because they contain tannins. Tannins create affinity between dyes and hair and thus improve color and fastness of dye<sup>[60]</sup>. Also the alkaloids, flavonoids etc. present in the other herbal drugs such as *Bhringaraja* (*Eclipta alba*) act as good source of dye, also improve hair growth and reduce hair loss<sup>[61]</sup>

***Gairika***: a component in *Irimejadi taila* indicated in *dantaroga*. *Gairika* has *Sheeta virya, Kashaya Rasa, Dahashamaka, Raktastambhaka, Vrana ropaka* properties which along with the other ingredients augment the effect of oil in treating *dantarogas* like gingivitis.

**Gandhaka:** mainly used in *yogas* of *kustha*. It is classically indicated in *kandu, Kushtha, dadru* and claimed to be *krimighna* and *Rasayana*. Sulfur has antifungal, antibacterial, and keratolytic activity. In the past, its use was widespread in dermatological disorders such as acne vulgaris, rosacea, seborrheic dermatitis, dandruff, pityriasis versicolor, scabies, and warts<sup>[62]</sup>

**Vamana:** It is a *Pradhana karma* which aims in expulsion of *utkleshita doshas* from the *urdhwa marga* /oral route<sup>[63]</sup>.

With regard to *Rasadravya* utility here it is much limited to *Mayura tuttha*. It is classically told as *Vamanakara* – induce vomiting. *Shodhita Mayura tuttha* can be used to induce *Vamana*.

**Virechana :** It is a *Pradhana karma* which aims in expulsion of vitiated *doshas* from *adho marga* /anal route<sup>[64]</sup>.

Individual *Rasa dravyas* which can be used for *Virechana*:

- 1) *Mayura tuttha*
- 2) *Kampillaka*
- 3) *Kankushta*

**Table 9: Virechana Yogas containing Rasa Dravya**

<b>Yogas</b>	<b>Rasadravyas</b>	<b>Indications : in general for Virechana in different diseases</b>
<i>Dhanwantari ghruta</i> <sup>[65]</sup>	<i>Kampillaka</i>	<i>Swasa, kasa, krimi, vataRakta, pleeha, etc</i>
<i>Triphaladi ghruta/ Bindu Ghruta</i> <sup>[66]</sup>	<i>Kampillaka</i>	<i>Twag dosha</i>
<i>Virechaka ghruta</i> <sup>[67]</sup>	<i>Kampillaka</i>	<i>Udara roga</i>
<i>Danti trivrutadi churna</i> <sup>[68]</sup>	<i>Kampillaka</i>	<i>Mudhavata</i>
<i>Mahanaracha Rasa</i> <sup>[69]</sup>	<i>Parada + Gandhaka</i> <i>Tankana</i>	<i>Aadhmana, mala vishtamabha, udavarta</i>
<i>Mahavanhi Rasa</i> <sup>[70]</sup>	<i>Parada + Gandhaka</i>	<i>Udara, mudhavata</i>
<i>Jalodarari Rasa</i> <sup>[71]</sup>	<i>Parada + Gandhaka</i> <i>Naga</i>	<i>Jalodara</i>
<i>Icchabhedi Rasa</i> <sup>[72]</sup>	<i>Hingula,</i> <i>Tankana</i>	<i>Aadhmana, mala vishtamabha</i>
<i>RajaVirechana gutika</i> <sup>[73]</sup>	<i>Parada+Gandhaka</i> <i>Gouripashana</i> <i>Tankana</i>	<i>For Virechana</i>
<i>Kampillaka yoga of lodhra</i> <sup>[74]</sup> , <i>saptala shankini</i> <sup>[75]</sup>	<i>Kampillaka</i>	<i>For Virechana</i>

**Kampillaka:** most of the *Virechana yogas* has *Kampillaka* which is claimed as *atirechaka* or drastic purgative and *krimighna/antihelminthic*. A significant purgative effect after an oral dose (120 mg/kg) in rats was assessed from resins isolated from plant. it possess significant antiinflammatory, hepatoprotective, antibacterial, antifungal, antifilarial properties due to presence of varied components in the drug such as phenols, cardenolides etc<sup>[76]</sup>.

**Shilajatu:** it is used for *Virechana* in *prameha* for its antidiabetic action.

*Parada* and *Gandhaka* forming **Kajjali** is used as base in the *yogas*. Its *yogavahi guna* helps in reaching target quickly and may help in increasing bioavailability of other drugs.

**Basti:** a *Pradhana karma* divided into *Niruha* and *Anuvasana*. This aims in removal of *prakupita dosha* from *Pakwashaya/* lower GIT.

**Lekhana Basti :** it is a type of *Niruha Basti* which has *Lekhana karma* i.e which dries up and scrape out the *Mala/* impurities from the *Dhatu/* body tissues. The *Rasa dravyas* used here are: drugs under *Ushakadi gana* (*Kasisa*

*dwaya, Tuttha, Shilajit), Saindhava Lavana. Ushakadi gana* is mainly indicated in *Mutrakrichra*(difficulty in micturition), *Ashmari* (renal calculi), *Gulma*,(benign tumors) *Medoroga* (dyslipidemia) and disorders of *Kapha dosha*. Mostly the drugs of *ushakadi gana* have *Lekhana, medohara* properties.

**Anuvasana Basti:** a type of *Basti* where *Sneha /* unctuous medications are administered through anal route.

**Uttara Basti:** it is a type of *Basti* where the medicine is administered through either *Mutrashaya marga /* urethral route or *Garbhasaya marga/* vaginal route. The fore said *snehas* indicated in disorders of *mutramarga /* urinary tract such as *Vastiamayantaka ghruta, Shatavaryadi ghruta* etc as well as those indicated in disorders of *yoni marga/* gynecological diseases such as *Varahyadi ghruta* can be used for *Uttara Basti* as well.

**Nasya:** A *Pradhana karma* aims at removal of *prakupita doshas* from *urdhwajatra* (above the clavicle i.e head and neck region) through nasal route.

**Table 10:Yogas with Rasadravyas used for Nasya:**

Yogas	Rasadravyas	Indications
<i>Unmattha Rasa</i> <sup>[77]</sup>	<i>Parada+Gandhaka</i>	<i>Tridosha prakopa, Sannipataja</i> (multiple <i>doshas</i> involved)
<i>Swasakuthara Rasa</i> <sup>[78]</sup>	<i>Parada+Gandhaka</i> <i>Manashila</i> <i>Tankana</i>	<i>Vataja, Pittaja shiro roga</i>

<i>Manshiladi</i>	<i>dhuma</i>	<i>Manashila, Haratala</i>	<i>Swasa, kasa after Vamana</i>
<i>Nasya<sup>[79]</sup></i>			

**Manashila:** has *kaphavatahara, Ushna* and *shoshana* properties. It may have anti histaminic property used in *shwasa, kasa*.

**Bahyaashrita Shodhana:** includes *lepa*

**Lepa:** includes different external applications in various parts of the body either for therapeutic (ex; in *Kushta/skin* diseases) or cosmetic (*loma shatana/* removal of hair) purposes.

In *Apamarga tanduliya adhyaya<sup>[80]</sup>*, different drug combinations have been told in *Kushta*. The *Rasadravyas* mainly used are *Haratala, Manashila, Tuttha, RasAnjana, Kampillaka, Kasisa*.

Examples for few *lepas* with *rasa dravyas*: *Sidhme lepa* containing *Manashila* and *Kasisa<sup>[81]</sup>*, *Vaipadikahara ghruta taila* containing *Kampillaka<sup>[82]</sup>*

**Lavanas in Panchkarma:** *Saindhava, Samudra, Bida, Souvarchala* and *Audhbida* are the 5 different types of salts told in *Rasashstra*. Among them *Saindhava* is predominantly told in almost all the *yogas* and also individually used in *Panchakarma* therapies.

**Mode of action:** in general *Lavana* by its *sukshma guna* it reaches micro channels of body by virtue of *Teekshna Guna*, it breaks down the morbid *Mala* and *Dosha Sanghaa* and by *Snigdha Guna* liquifies the

*Doshas*(mode of action of *Basti karma anveshana*)

**Ksharas in Panchakarma:** *Sarjakshara* (predominantly consist sodium carbonate), *Yavakshara*(prepared from barley predominantly potassium carbonate) and *Tankana*(borax) are widely used three *ksharas*. *Ksharas* in general have *teekshna, Ushna, laghu, rooksha, Deepana, Pachana* properties. They are widely used in diseases of *kapha* and *vata* predominance. The action depends on disease where n it is used.

**Utility of Rasa dravyas in instrumentation of vessels used in Panchakarma:**

There are different instruments used in different *Panchakarma* treatments such as *Kumbhi, Kumbha, sharava, daarvi, Basti netra, Basti putaka, Dhara patra, shalaka, Vamanapeetha, gokarna* etc. In this article the instruments which uses *Rasadravyas* alone are dealt in detail which are as follows:

- 1) **Basti netra<sup>[83]</sup>:** *Swarna, Tamra, Roupya, Riti, Trapu, Kamsya*
- 2) **Uttara Basti netra<sup>[84]</sup>:** *Hema, Roupya*
- 3) **Dhuma netra<sup>[85]</sup>:** *Swarna, Tamra, Roupya, Riti, Trapu, Kamsya*
- 4) **Anjana shalaaka<sup>[86]</sup>:**  
*Tamra* for *Lekhana / scraping* effect  
*Kalaloha* for *Ropana/ healing*

*Suvarna* and *Roupya* for *Prasadana* / clarifying

5) **Dharapatra**<sup>[87]</sup>: *Swarnadi uttama Loha*

6) **TakraDharapatra**<sup>[88]</sup>: *Sphatika, Rajata, Tamra, Varatika,*

#### **Discussion:**

*Rasa dravyas* have wide utility in *Panchakarma* therapies. Almost all the *Rasadravys* are used in *Panchakarma*. The utility of *rasadravyas* in *panchakarma* serves two purposes: one is treating diseases through individual drugs or combined *yogas* and the other purpose is in making of utensils required in *panchakarma* treatments.

The individual drug used in *Panchakarma* treatments are: *Tuttha / Tamra* for *Vamana*, *Kampillaka, Kankushtha* for *Virechana*. Other than these, *bhasmas* of various metals and minerals can be judiciously used in various treatments considering the *avastha* of *roga, rogi* and to get the desired effect. Example: *Abhraka bhasma* in *Snehana* in respiratory diseases, *Kasisa bhasma* through *snehapana, Basti* in diseases of blood, skin diseases and so on.

The *Rasa dravyas* in combination with herbal drugs i.e *yogas* have been advocated in various forms like *Snehana, Vamana, Virechana, Basti, lepa* etc. mostly where in *Kajjali* is used, apart from its own *vyadhiharana* properties, it may increase the bioavailability of other drugs, reach the target

quickly exhibiting the effect sooner. The selection of other *yogas* with *Rasa dravyas* is mainly based on the specific diseases. For example: *shilajit* is mainly used in cases where there is predominance of *kapha, medas* being the *dushya* such as *sthoulya, prameha, mutrarogas* because of its properties stated earlier.

The literary review of formulations used in *Panchakarma* revealed *Lavana varga* and *kshara varga* are judiciously present in almost all the *yogas* used in all the five treatments. The purpose of using them have been discussed already.

The *Rasadravys* are also used in making of vessels used in *Panchakarma*. In general, the aim of using these metals could be either because they were abundantly available in those days, inert /non-reactive to the medicines used. Also based on the desired effect, specific metals were used as seen in *Anjana*.

#### **CONCLUSION:**

Among the five *Panchakarma* therapies, the utility of *Rasadravys* excluding *Lavanas* and *ksahras* is comparatively less in *Vamana, Basti, Nasya* whereas *Rasa dravyas* individually and in compound form are judiciously used in other supportive measures like *Dipana, Pachana* and *Lepa*. The *Rasa dravyas* and their *yogas* are believed to be used as *shamana oushadhies* in general. But they are widely



useful in *panchkarma* therapies for *Shodhana* purpose also.

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**Cite this article as:** Divya Nair, Snehaligaonkar, Chaitralakshmi K.N. Utility of *rasadravyas* in *panchakarma*. *J of Ayurveda and Hol Med (JAHM)*.2019; 7(2): 66-85

Source of support: Nil

Conflict of interest: None Declared