



Review Article

EFFICACY OF RASAUSHADHIS IN SHALAKYA TANTRA

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ABSTRACT

Shalakyta tantra also called as *Uttamanga* as it deals with vital sense organs located above the *Jatru* (clavicle). In Ayurvedic system of medicine Rasa shastra is one of the branch deals with *Rasa aushadis* preparations which are very much useful and effective, various special processing techniques such as *Sodhana*, *Marana* etc have been done for removing the toxic effects and utilising them for therapeutic purpose. Some of the *Kriyakalpa* procedures which are prepared with *Rasa aushadhi* are like *Anjana* (*Samudraphena varti*, *Sukhavathi varti*), *Bidalaka* (*Gairikadi bidalaka*, *Manashiladi bidalaka*) etc and oral medication include *Saptamruta lauha*, *Shirashoolavajra ras*, *Sutasekar ras*, *Laxmivilas ras*, *Kaphaketu ras* etc are indicated. *Rasa aushadis* are gently absorbable and digestible thus provide quick action and potent response in various *Urdhavajatrugata vikaras*. *Rasa Aushadis* act as *Rasayana* therapy helps to attain longevity, immunity, sharpness of sense organs etc.

INTRODUCTION

अल्पमात्रोपयोगित्वादरुचेप्रसङ्गतः ।

क्षिप्रमारोग्यदायित्वादौषधेभ्योऽधिको रसः ॥ (R. Sa. San. 1/4)

- ❖ *Rasa Aushadhis* does not cause any complications like nausea, as we use it in smaller dosage^[1] as the drugs are used in *Kajjali* form.
- ❖ The process of *Sodhana* includes both physical as well as chemical purification of the drug^[2].
- ❖ The process of subjecting the metallic and mineral drugs for different pharmaceutical procedures using wide range of herbal formulation (*Swarasa*, *Kwatha* etc) and later subjecting them to intense heat to obtain them in the form of *Bhasma* is called as *Marana* (incineration)^[3].
- ❖ *Rasa aushadis* helps in quick action in body and also in human body and *Panchaendriyas* (sense organs).
- ❖ Due to its *Vyavayi*, *Vikasi* and *Kshipra guna* helps in entering minute *Srotas*, absorption and reaching towards target site.

- ❖ It also results in active pharmacodynamic and pharmacokinetic properties.
- ❖ All the *Rasaushadhis* contains *Deepana-pacana*, *Rasayana* properties as *Padarasa* is *Dravya rupa* and *Rasayana* is *Guna rupa*.
- ❖ As all the *Rasaushadhis* enters into the cellular levels help in correcting the deformities, degenerations of the each and every cell.
- ❖ It is also observed that herbomineral complexes are more stable and interactive compared to plane herbs. It also results in faster therapeutic action and has a longer shelf life.

Parada (Mercuric Oxide)

The mercury does, the *Rasana* or *Aswadana* (engulf) of *Abhrakadi rasa dravya* and *Swarnadi dhatu* it is called as *Rasa*. Since its judicious therapeutic use slows down aging process (*Jara*), heals many diseases (*Ruja*) and delays death (*Mrtyu*) it is called as *Rasa*".

Parada acts as *Yogavahi* (synergistic action) and also has *Rasayana* (rejuvenating) effect. Due to its nano particle size helps in absorption, non-irritability, toxicity is reduced and increases cell acceptance. Mercuric sulphate is used as catalyst and it improves the drug action.

Indication and Yogas: *Ras Candrika vati* – *Pinasa*, *Parvati ras* – *Timira*, *Bhairav ras* – All type of *Karna rogas* (Ear disorders)

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Amayika prayogas (RT-8/73)

Half Masa (500 mgs) of *Sudha gandhaka* taken along with luke warm milk in morning for 6 months attains *Divya-dristi* (sharp eyesight)

Maharasa^[4]

S.No	Rasa	Properties	Karma	Indications and Yogas	Dosage
1	<i>Abhraka</i> (Mica)	<i>Madhura rasa, snigdha guna, sita virya</i>	<i>Deepana, balya, Rucikara, Tridoshaghna, chakshusya, medhya, Ayushkara, Krimighna</i>	<i>Kasa, Swasa, Pinasa - Swasakasachintamani ras, Mahalaxmi vilas ras</i>	1-2 Ratti (125-250mg)
2	<i>Makshika</i> (Copper pyrite)	<i>Madhura-tikta rasa</i>	<i>Rasayana, Chakshusya, Tridoshaghna</i>	<i>Netrasani ras – Naktandhya, Saptamrita ras – All type of Mukha rogas (Mouth disorders), Swasa Chintamani ras – Swasa roga</i>	½-2 Ratti (62-250mgs)
3	<i>Vimala</i> (Iron pyrite)	<i>Madhura-tikta rasa</i>	<i>Rasayana, Chakshusya, Tridoshaghna</i>	<i>Timira - Vimala varti</i>	½-2 Ratti (62-250mgs)
4	<i>Sasyaka</i> (copper sulphate)	<i>Madhura-Kasaya rasa, Laghu guna, Sita virya</i>	<i>Lekhana, Bhedana, Krimighna, Visadosa Nashaka, Kapha-Pittahara</i>	<i>Chaladanta (Gandusha yoga), Indralupta (lepa) (A.H Utt), Sasyaka Anjana- drshtiprasadak (A.H Utt)</i>	1/8 -1/4 Ratti (15 to 30 mgs)
5	<i>Kharpara</i> (Zinc oxide)	<i>Sita virya</i>	<i>Yogavahi, Balya</i>	<i>Kasa - Laxmivilas ras, Vasantamalati ras</i>	1/2 – 2 Ratti (65-250 mgs)

Abhraka bhasma containing K, Mg, Fe, Na etc because of its small particle size it can be absorbed easily into micro-channels of the eye very quickly and helps in cell rejuvenation.

Makshika (Cu,Fe, S) and *Vimala* (Fe,S) contains copper, sulphur and iron in it so the sulphur is responsible for the antibacterial and possible antifungal action^[5] Fe is helpful in supplying O₂ to the tissues improve mental and physical health.

Iron serves as a cofactor for the RPE-specific 65 k Da protein (RPE65), an enzyme required for the retinoid metabolic pathway, which is critical for the maintenance of light capturing chromophore levels in photoreceptors and thus phototransduction and visual adaption^[6].

Tuttha contains copper sulphate that is copper produces collagen which is a part of connective tissue and maintains cell membrane healthy.

Kharpara (Zno)

- The physiological functions for zinc have been studied predominantly in retina and retinal pigment epithelium where zinc is believed to interact with taurine and vitamin A modify photoreceptor plasma membranes, regulate the light-rhodopsin reaction, modulate synaptic transmission and serve as an anti-oxidant^[7].
- Zinc oxide eyedrops are used in Angular bacterial conjunctivitis as it stops proteolytic ferment and thus help in reducing the maceration^[8].

Amayika prayogas (RT-10/75,21/99)

- *Abhraka bhasma + Triphala churna* and honey improves eyesight
- *Kharpara bhasma* along with *Vamsalochana* cures the diseases of *Kasa, Swasa* and *Ksaya roga*

Uparasa^[9]

These group of drugs used as adjuvant in the processing of *rasa* and *Maharasa*, most of the them act as supportive drugs.

S.No	Uparasa	Properties	Karma	Indications and Yogas	Dosage
1	<i>Gandhaka</i> (sulphur)	<i>Madhura rasa, Usna Virya, Katu Vipaka</i>	<i>Drishtivardhaka, Rasayana, Krimighna</i>	<i>Timira (myopia)- Gandhaka kalpa, Gandaka rasayana, Swasakutar ras – Shirashula</i>	1-8 Ratti (125-1000mgs)
2	<i>Gairika</i>	<i>Madhura and</i>	<i>Raktapittahara,</i>	<i>Dantaroga - Irimedadi taila,</i>	2 – 4 Ratti (250

	(Haematite)	<i>Kasaya rasa, Snigdha Guna, Sita virya</i>	<i>Vranaropana, Tridoshaghna, Balya and Netrayam</i>	<i>Gairikadi varti - Nasarsha, Kshatasukra, Gairikadi anjana - Ratryandha</i>	- 500 mgs)
3	<i>Kasisa (Green vitriol)</i>	<i>Amla, Tikta, Kasaya rasa, Snigdha guna, Usna virya</i>	<i>Vata-kaphahara, Kesaranjaka (hair dye), Netrya (used in eye diseases), Rakta prasada, Balya and having Sankocaka property</i>	<i>Kasisa bhasma - Dantaruja (Dharana), Talupaka (gharshan), Kasisadi anjana - Puyalasa</i>	½ -2 Ratti (62 mgs - 250 mgs)
4	<i>Sphatika (potash alum)</i>	<i>Katu, Tikta, Kasaya rasa, Snigdha guna, Usna virya</i>	<i>Vranaropaka, Sonitasthapana, Kanthya (useful in diseases of throat), Kesya (good for hair growth)</i>	<i>Arditavata - Samirpannaga rasa, Sphatika anjan - Timira (A.H Utt)</i>	2 to 4 Ratti (250 to 500 ms)
5	<i>Manashila (Arsenic trisulphide)</i>	<i>Katu, Tikta rasa, Snigdha guna, Usna virya</i>	<i>Rasayana, Lekhana</i>	<i>Kasa, Swasa, Ksaya roga - Swasakuthar ras, Manashiladi anjana- Timira, Arma</i>	1/32 Ratti (3.9 mgs) to 1/16 ratti (7.8 mgs)

Gandhka bhasma has glutathione amino acid in it, it also contains anti-fungal, anti-bacterial, anti-viral properties. It also prevents neurological diseases by repairing oxidative damage and restoring cell membranes elasticity in eye. It also plays a major role in electron transport system.

Gairika bhasma (Iron oxide) and *Kasisa bhasma* (ferrous sulphate) it is used in fortify food and treat iron-deficiency anaemia prevents premature greying of hair, as it contains iron provides nourishment to the cells and tissues.

Kasisa bhasma is having antibiotic properties helps in treating dacryocystitis.

Sphatika bhasma contains potassium double sulphate of aluminium used as an astringent and antiseptic, reduces nasal bleeding and abrasions.

Anjana - Srotoanjana – It possess *Sita virya, Madhura* and *Kasaya ras, Snigdha* and *Grahi guna, Lekhana karma* it is useful in *Netrarogas*.

Souviranjan – It possess *Sita, Snigdha* and *Grahi guna* and useful in *Netra roga*. It can be applied daily.

Pushpanjana – It possess *Sita, Snigdha guna* it useful in *Netrabhisyanada*.

Amayika prayogas (RT-11/205,121,22/57)

- *Sphatika + Saindhava lavana* equal quantity used as *Dantadhavana* to prevent bleeding gums (stomatitis).
- 1 part of *Saindhava lavana*, 2 parts of *Marica*, 3 parts of *Sudha manashila*, 4 parts of *Sankha bhasma* triturated and used as *Anjana* in all type of *Netra rogas*.
- *Timiraharanjana*- 4 tola of *Sudha souviranjan* and 3 *Masa* of *Karpura* is triturated and used as *Anjana* in *Timira*.

Sadharana Rasa^[10]

S.No	Sadharan Rasa	Properties	Karma	Indications and Yogas	Dosage
1	<i>Gouripashan (Arseneous trioxide)</i>	<i>Katu rasa, Ushna Virya, Snigdha Guna, Katu Vipaka</i>	<i>Kshara guna</i>	<i>Ardhavabhedahara yoga, Samirpannaga ras-Ardita vata</i>	1/120- 1/30 Ratti (1-4mg)
2	<i>Hingula (Cinnaber)</i>	<i>Tikta-katu-Kasaya rasa, Laghu ruksha Tikshna guna, Usna virya, Katu vipaka</i>	<i>Netrayam, Deepana, Amapacana, Balya, Medhya</i>	<i>Tribhuvankirti ras, Vasantakusumakara ras- Pramehajanya netra roga</i>	½ - 1 Ratti (62- 125mgs)
3	<i>Mriddarasrnga (Litharge)</i>	<i>Guru guna</i>	<i>Pacifies Kapha dosa, Kesaranjaka</i>	<i>Hair-dye (External application)</i>	-
4	<i>Navasadar (NH₄CL)</i>	<i>Snigdha, Suksma, Laghu guna, Usna virya, Tridoshaghna</i>	<i>Amapachana, Deepana, Kapha Vishleshan</i>	<i>Swasa roga</i>	1-5 Ratti (125- 625mgs)

Arsenic trioxide helps in DNA fragmentation characteristic of apoptosis in NB4 human promyelocytic leukemia cell. It is suspected that arsenic trioxide induces cancer cells to undergo apoptosis.

Ammonium chloride is a salt that helps maintain pH and exerts a mild diuretic effect. It also acts as an expectorant by irritating the mucous membranes and alleviating cough.

Suddha mriddarshrungi possesses *Seetha guna* & mitigates vitiated *Vata kapha dosha*. It's application **Dhatuvarga**^[11]

over the scalp helps in healthy hair growth, stops greying of hair. It can be used in many types of skin diseases.

Amayika prayogas (RT-11/53,14/14)

- *Sudha Gouripashan* along with *Vasa sattva* or *Vyaghri churna* cures *Swasa roga*.
- *Sudha navasadar* + *Yasthimadhu churna* + *Vacha churna* along with *Kantakari kwatha* helps in *Kapha vishleshan*.

S.No	Dhatuvarga	Properties	Karma	Indications and Yogas	Dosage
1	Swarna (Gold)	Madhura, Katu, Tikta, Kasaya Rasa Guru, Snigdha, Sara Guna, Sita Virya	Tridoshaghna, Netrayam, Balya, Rasayana, Smriti prada, Buddhiprada	Amlapitta - Swarnasutasekar ras, Pramehajanya netra roga- Vasantakusumakar ras, Swasakasa Chintamani ras, Brihat vat Chintamani ras- Ardita vat	1/8 -1/4 Ratti (15.6 - 31.2mgs)
2	Rajat (silver)	Madhura, Amla, Kasaya rasa, Guru, Snigdha, Sara guna, Sita virya, Madhura vipaka	Lekhana, balya, vayasthapana, chakshushya, Medhya, pacifies Vatakapha dosha, Pramehadi rogahara	Vasantakusumakar ras- Kasa, Swasa, Brihat vat Chintamani ras – Ardita vata	¼-1 Ratti (31- 25mgs)
3	Tamra (copper)	Madhura, Amla, Tikta, Kasaya rasa, Snigdha guna, Usna virya, Katu vipaka	Lekhana, Netramayeshu uttamam	Tamradi Anjana – Puyalasa, lakshmivilas ras, Shiro vajra ras – All types of Shiro rogas	6 Ratti
4	Loha (iron)	Tikta, Kasaya, Alpa lavana ras, Laghu guna, Sita virya	Lekhana, Balya	Timira - Saptamruta loha, Navayasa louha, Nayanamrita ras – All type of Netra rogas, Candrakanta ras – Suryavarta, Chinatmani ras – Karnanada, Badhirya	¼-1 Ratti (31- 25mgs)
5	Vanga (Tin)	Laghu, Sita, Ruksha Guna	Rasayana, Chakshushya, Medhya, Amapachana	Lakshmivilas ras	1-2 Ratti (125- 250mgs)
6	Yasada (Zinc)	Katu and Kasaya rasa, Sita guna	Kapha-Pittahara, Balya, Netrarogahara, Kasa, Swasarogaghna	Isotone eyedrops – Macular degenerations, DR (Pramehajanya netra roga)	½-1 Ratti (62- 125mgs)

Swarna, Rajata, Loha, Vanga bhasma having *Rasayana* properties (antioxidant) and catalase activity, strengthens immune system and increase the quality of the component. These also improves the metabolic process, bitranformation and quality of body tissue.

Swarna bhasma has anti-oxidant, Rejuvenating, anti-depressant, anxiolytic effect, it also heals injured neurons by increasing neurotrophin, transforming growth factor beta-3.

Rajata bhasma having antimicrobial effect, provides physical strength and increases intellect and good for eye.

Loha bhasma plays crucial roles in hemopoiesis, control of infection and cell mediated immunity.

Yasada bhasma (Zno) slows down the onset of macular degeneration in diseases like ARMD, protects tissues and strengthens eye cells helps in absorption of Vit-A in retina.

Amayika prayogas (RT-15/92,16/56,17/92, 18/47, 19/28)

- *Swarna bhasma*+ *Shati churna* cures *Swasa roga*.
- *Rajat bhasma*+ *Ela chu* + *Sarkara* taken orally cures *Ardhavabhedaka*.

- *Tamra bhasma*+ *Rajata bhasma* + *Swarna makshika bhasma* taken orally cures *Suryavarta*.
- *Vanga bhasma* along with *Guduci satva* and honey is given orally to cure *Prameha janya netraroga*.
- 1 *Ratti* of *Yasada bhasma* mixed with *Purana go ghruta* taken orally improves eyesight.

Sudhavarga^[12]

Sudhavarga contains both *Pranija dravya* (Animal product) like *Samudraphena*, *Sankha* and *Khanija dravyas* like *Godanti*, All the drugs included in *Sudha varga* contain calcium as a main ingredient.

S.No	<i>Sudhavarga</i>	Properties	Karma	Indications and Yogas	Dosage
1	<i>Sankha</i> (conch shell)	<i>Sitala, Ksariya</i>	<i>Balya, Grahi, ropana</i>	<i>Amlapitta, Agnimandya, Kaphaketu ras - (Karna roga)</i>	2 <i>Ratti</i> (250mgs)
2	<i>Godanti</i> (gypsum)	<i>Sita guna</i>	<i>Balya, Deepana</i>	<i>Godanti mishran- shirashula</i>	1-3 <i>Ratti</i> (125 - 375mgs)
3	<i>Samudraphena</i> (cuttle fish bone)	<i>Sita virya, Sara guna</i>	<i>Lekhana, Pacana, Chakshusya</i>	<i>Karnasrava, Samudraphenadi varti - Avranashukla (cha chi)</i>	2 <i>Ratti</i> (500mgs)

Sankha Bhasma having calcium carbonate compound it acts as antacid, helps in treating peptic ulcers.

Godanti bhasma due to its *Sita guna* pacifies *Pitta dosa* and stops bleeding. It is useful in headaches due to its vasoconstriction properties.

Samudraphena is having *Sita, Sara* and *Ropana* (healing) *Guna* helps in healing of corneal cell membrane thus helps in correcting cellular level deformities and degenerations.

Amayika prayogas (R.T 12/17,118,120)

- Fine powder of *Suddha samudhraphena bhasma*, *Pippali* and *Saindhava lavana* is indicated in *Avranashukla* (corneal opacity) - *Anjana* form.

- 1 part of *Sudha samudraphena bhasma* is added with *Sudha tuttha* and *Haritaki chu* this mixture is triturated and used as *Anjana* in *Pothaki roga*.

- Fine powder of the *Samudraphena bhasma* is blown into the ear, cures *Karna srava*.

Kshara Varga^[13]

In *Rasa shastra* the *Kshara* plays its own role in different pharmaceutical procedures such as *Sodhana, Marana* etc because of its Alkalinity in nature these substances help in corrosion of unwanted material from desired product, *Kshara* are known for their cleansing property.

S.No	<i>Kshara Varga</i>	Properties	Karma	Indications and Yogas	Dosage
1	<i>Yavakshara</i> (potassium carbonate)	<i>Laghu snigdha and Lekhana Usna guna</i>	<i>Medohara, Sothahara, Kaphavatahara and Dipana-Pacana, Ksharana</i>	<i>Kshara taila - Karnanada, badhirya, Adhimamsa (A H Utt) Nasa arsha- (Gadanigraha), Grihadhoomadi taila, Sikhari taila</i>	3- 10 <i>Ratti</i> (375mgs - 1.2gms)
2	<i>Tankana</i> (borax)	<i>Katu rasa, Usna virya, Tikсна-Ruksa-Sara guna</i>	<i>Balya, Agni Diptikara</i>	<i>Pancamrita ras - Pinasa, Swasakutar ras - Kasa, Swasa, Tribhuvankirti ras, Swarnasutasekar ras, Shirashula and Mukha roga (Mukhapaka), Dantaroga</i>	1-2 <i>Ratti</i> (125- 250mgs)
3	<i>Sarjakshara</i> (sodium bicarbonate)	<i>Katu rasa, Tikсна guna, Usna virya</i>	<i>Deepana-Pacana,</i>	<i>Kasa, Swasa roga, Karnasrava</i>	3-12 <i>Ratti</i> (375mgs- 1.5gms)

Yavakshara-It is having Antibiotic property and contains various amino acids like histidine, tryptophan etc helps in arresting the further growth and inflammatory processes and analgesic property.

Tankan-Boric acid was claimed to have a *Kapha nisaraka*, mucolytic effect, bacteriostatic effect and antiseptic agent which helps in the removal of growth of pathogens.

Kshara are alkaline substances which are of two kinds Natural (*Prakritik*) and Artificial (*Kritima*).

Natural are minerals and contains calcium, potassium, and sodium where as artificial are those prepared by the ashes of certain plants like *Yava, Apamarga* etc both these are caustic alkalis possessing the property of destroying the tissue by penetrating deeper and breaks the abnormal growth of the tissues like masses, tumours etc.

Amayika prayogas (R.T 13/32,57,85)

- *Yavakshara* in suitable dose added along with *Dasamula kwatha* and *Saindhava lavana* cures *Kasa*, *Swasa rogas*.
- *Sarjakshara* is added with *Nimbuswarasa* and the solution is instilled into the infected ear to cure *Karnasrava* associated with burning sensation and pain.
- Fine powder of *Sudha Tankan bhasma* along with *Bola churna* gently applied over gums cures *Dantavestak*.

DISCUSSION

- ❖ *Rasaushadhis* have high bio-availability, quick action with a minimal dosage and has high efficacy with a minimal side effect (only if taken in proper purified form).
- ❖ The drug act as co-enzyme, *Yogavahi* (catalyst), *Rasibhava* (fast action) and reaches the target site within a short duration.
- ❖ The Nanoparticles enter the *Srotos* (minute channels), penetrate deeper tissues by crossing the BBB and eliminates the toxic substances.
- ❖ Mostly, *Rasaushadhis* having *Rasayana* (rejuvenation) and good appetizers and digestive (*Deepana-pacana*) properties, provides physical and mental strength, regulates body metabolism, *Jara nivartaka* (delays ageing), *Vyadhi nivartaka* (prevents disease), *Deergha ayuhkara* (provides longevity).
- ❖ Many rasa preparations/formulations like
 - a) *Shirashoolavajra ras* is effective in treating *Ardhavabhedaka* (migraine), *Shirashoola* (headache)
 - b) *Kasisadi Anjana* is effective in *Puyalasa* (Dacrocystitis)
 - c) *Saptamruta loha*, *Gandhaka kalpa* having *Dristiprasadaka* properties
 - d) *Malla sindur ras* helps to cure *Dusta pratisyaya*, *Kasa*, *Swasa rogas*
 - e) *Rasa mankiya ras* – *Kasa*, *Swasa*, *Putikarna*

Thus, these herbo-mineral drugs with a smaller dosage not only acts on target site but also prevent it from reoccurrence.

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CONCLUSION

The present topic was taken up to analyse that *rasa Aushadhis* are effective in treating the *Urdhavajatrugata vikaras* by the above discussion it is concluded that nanoparticles are important formulations in many diseases and considered as pillar for Ayurveda system. As these drugs, increases the quality of life, best immune-modulator, Rejuvenators, Anti-oxidant, Free radical scavenging, Analgesic and Anti-inflammatory. Herbo-mineral drugs have a unique action which helps in treating many challenging disorders.

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