

**Review Article****A CRITICAL REVIEW OF RASAUSHADIES IN THE MANAGEMENT OF NETRA ROGAS (EYE DISEASES)****Padmavathi T Rathod<sup>1\*</sup>, Mamatha KV<sup>2</sup>, Gopal<sup>3</sup>, Sujathamma K<sup>4</sup>**<sup>1</sup>PG Scholar, <sup>2</sup>Reader & Guide, <sup>4</sup>Professor and HOD, Department of Shalakyta Tantra, SKAMCH & RC, Bengaluru, Karnataka, India.<sup>3</sup>Lecturer, Department of Rasa Sastra and Bhaishajya kalpana, SKAMCH & RC, Bengaluru, Karnataka, India.**ABSTRACT**

In Ayurveda *chikitsa paddhati*, *Rasa oushadhis* has been considered more useful and effective as they are more advantageous due to their unique benefits over the other preparations. Medicines described to manage different diseases in our classical texts contain different sources like plants, marine, animals, minerals and metals. All these are formulated in such a way that it suits well to our body. This clearly states that there were usage of herbomineral preparations in therapeutics which includes for *Netrarogas* also. These preparations are significant in many chronic and challenging eye disorders of this era which lacks curative rate and has high recurrences.

To deal such challenging disorders of the Eye whether chronic or newly existing, essential to review and re-establish the importance of *Rasa oushadhis* which are explained by our *Acharyas* pertaining to *Netra rogas*, with regard to its route of administration and posology. For this Review work, information were compiled from different texts according to *Rasadravayas* mentioned as *Chakshushya* and to treat *Netra rogas* i.e., *Maharasa, Uparasa, Sadharanrasa, Dhatu, Ratna, Sudha varga*. Further the different *Yogas* of *Netra Roga* containing *Rasadravayas* as one of the ingredients is compiled as an attempt to establish *Rasaushadhi* - the need of the hour for *Netra Rogas*.

**KEYWORDS:** *Netra Rogas, Rasaushadhis*, Different Classical Texts, compilations Indications.**INTRODUCTION**

Acharya Sushruta has explained 76 *Netra rogas* among them *Saadya* are 52, *Yaapya* 7. These *Netra rogas*<sup>[1]</sup> can be equated to different pathological conditions of the Eye (Eg: Cataract, Diabetic retinopathy and Retinitis Pigmentosa) and relevant treatments can be adopted. It is well reported there are many such diseases of the eye which are chronic, progressive with complications and ultimately leading to blindness. Although much technical advances in medical testing and treatment have increased the quality of vision, it has its own limitations associated with adverse effects, high recurrence rate and realization of relative costs.

Approximately global blindness increases to 1-2 million/Year, in that 60% are treatable and 20% are preventable. The leading causes of the preventable blindness are Cataract, Refractive Errors, Corneal opacity, Diabetic Retinopathy, Macular degeneration, Retinitis pigmentosa. All these conditions can be assessed as per Ayurveda and appropriate treatments can provide successive results.

At this point of time different herbomineral preparations, will be one of the preferences to deal with such complicated & chronic nature of the disease, as *Rasaushadhis* are claimed to be quick in action with better efficacy. In this article an prompt attempt is made to compile different *Rasayogas* used for different eye diseases.

The use of herbo-mineral preparations in healthcare is a unique contribution of *Ayurveda*, through *Rasashastra*. *Rasashastra* is an offshoot of *Ayurveda* that was mainly developed in the Medieval period. It is understood that the term *Rasa* denotes *Parada, Maharasa, Uparasa, Sadharana Rasas, Dhatus, Ratnas, Sudhavarga* and others. The formulations which consist of such *Rasa dravyas* as one of the constituent are called as *Rasa yoga* or *Rasaushadhis*. It is obvious that the use of *Rasa*, which are subsequently used after appropriate *Samskaras* like *Shodhana, Bhavana* and *Marana* are considered pharmaceutically most suitable forms. Ash of a substance obtained by calcinations is called *Bhasmas*. Documentation of the classical preparation of *Rasa Yogas* & latest researches talks about their history of its usage and importance in present day practice.

**Benefits of *Rasaushadhis***<sup>[2]</sup>

The important benefits of *Rasoushadhis* are that they work in smaller doses, Tastes neutral, Can be administered at any time, helps in speedy recovery, medicines does *Deepana* & *Pachana* and thus no preparation is required. In Bhaishajya Ratnavali, Govindadas sen quotes that, consideration of the *Dosha* involvement, condition of the disease, gender of the patient, the place, time of treatment is not required. These talks about the edge of the *Rasaushadhis*.

**Table 1: Rasadravyas that are Chakshushya and Beneficial in Netra Rogas**

Maharasa <sup>[3]</sup>	Uparasa <sup>[4]</sup>	Sadharana rasa <sup>[5]</sup>	Dhatu Varga <sup>[6]</sup>	Ratnas <sup>[7]</sup>	Sudhavarga <sup>[8]</sup>
Abhraka Makshika Vimala Sasyaka Rasaka	Gandhaka Gairika Kasisa Kankshi Anjana	Navasadhara Kapardha Girisindhura Hingula	Swarna Rajata Vanga Kansya Tamra Yashada Vartalo Loha	Mukta Pravala Vajra Vaidhurya	Godanti Shankha Samudraphena

- **Abhraka (Mica):** possesses *Madhura rasa, Snigdha guna, Shita virya, Deepana, Balya, Tridoshagna, Chakshushya (Netrya)* qualities <sup>[9]</sup> and thus used in all the *Netra Rogas*.
- **Maksika (Copper pyrite or Chalcopyrite: Cu<sub>2</sub>S<sub>1</sub>Fe<sub>2</sub>S<sub>3</sub>)** Contains *Madhura tikata rasa, Tridoshagna, Chakshushya* and *Rasayana* properties. <sup>[10]</sup> Thus it is mainly indicated in *Raktaja* and *Pittaja vyadhis* like *Sukra, Arma, Kacha*.
- **Vimala (Iron pyrite: FeS<sub>2</sub>)** Contains *Madhura tikata rasa, Tridoshagna, Chakshushya* and *Rasayana* properties. <sup>[11]</sup> There are no *Yogas* with *Vimala* in *Netraprakarana*, but it is a *Chakshushya* and has the similar properties of *Swarnamakshika* and thus can be substituted for the same.
- **Sasyaka/Tuttha (Copper sulphate: CuSO<sub>4</sub>)** has *Kashaya, Madhura rasa, Laghu guna, Lekhana, Krimighna, Visha dosha nashaka* and *Kapha pittahara* properties. <sup>[12]</sup> Thus its usage is found in *Pitta, Kapha* and *Rakta Pradhana Vyadhis* like *Sirotpata, Timira, Netrakandu, Arma* and *Pillaroga* both *Sukra Roga (Savrana and Avranasukra)* and *Naktandhya*.
- **Kharpara/Rasaka (Zinc oxide: ZnO)** possess *Shita virya, Kaphapittahara, Tridoshagna* and *Chakshushya* properties<sup>[13]</sup> helps to consider in treating *Netra Rogas*.
- **Gandhaka (Sulphur: S)** is said to be *Drishtivitaratitara (Drishtivardhaka)* and has *Madhura rasa, Ushna veerya, Rasayana* and *Krimighna karma*.<sup>[14]</sup> There by it can be advocated in infective disorders.
- **Gairika (Hematite: Fe<sub>2</sub>O<sub>3</sub>)** has *Kashaya Rasa* helpful in *Kapha, shita virya, Snigdha Guna, Raktapittahara, Vrana ropana karma* and *Madhura rasa* and *Snigdha guna* to combat *Vata*.<sup>[15]</sup> Thus it has vast benefits in *Tridoshaja vyadhis* and in *Netra rogas* where *Vrana chikitsa* is needed.
- **Kasisa (Green vitriol, Ferrous sulphate: FeSO<sub>4</sub>)** is mainly a *Kashaya, Amla, Tikta rasa, Guru snigdha guna, Ushna virya, Vata kapha hara Rasa*. <sup>[16]</sup> Thus it is mainly helpful in *Kaphajavyadhis* and the conditions of other associated *Doshas* like *Krimigranthi, Arma, kacha, Timira vartmagatarogas*. *Pratisarana* is indicated in *Vartmagatarogas*.
- **Sphatika/Spatika (Potash alum: K<sub>2</sub>SO<sub>4</sub>, Al<sub>2</sub>(SO<sub>4</sub>)<sub>3</sub>, 24H<sub>2</sub>O)** has *Kashaya,, Katu, and Tikta rasa, Snigdha guna, Ushna virya, Vrana ropaka, Sonisthapana gunas*.<sup>[17]</sup> This is a most important *Rasa* used abundantly in *Ayurveda ophthalmology* practice. Apart from the mentioned *Yogas* here many *yoga* can be modulated with *Spatika* as an ingredient.
- **Anjana (Stibunites:Sb<sub>2</sub>S<sub>3</sub>)** are of 5 types. They are *Souviranjana, Rasanjana, Srotoanjana, Pushpanjana, Nilanjana*. All are having *Netrya* property. *Rasanjana* constitutes *Madhura rasa, Shita Virya, Kaphapittahara* property. *Soveeranjana* is *Grahi, Snigdha guna shita virya* and *Raktapittahara*. *Srotoanjana* is *Guru snigdha, Grahi, Shita virya, lekhanas*.<sup>[18]</sup> Among its varieties *Souveeranjana* and *Rasanjana* are helpful in *Kaphajavyadhis* due to its properties, thus helpful in *Naktandya, Netrakandu, Kacha, Prakilnavartma, Timira*.
- **Manashila (Arsenic disulphide:As<sub>2</sub>S<sub>2</sub>)** *Manashila* possess *Katu, Tikta rasa, Snigdha guna, Ushna virya* and *Rasayana* qualities.<sup>[19]</sup> Though it is not mentioned as *Chakshushya* or *Drishti vardhaka*, it is used in some *Netrayogas*.
- Among the *Sadharana rasa* no preparations for *Netrarogas* are available. But some are stated as *Chakshushya* and thus can be considered in *Netra Rogas* accordingly in customized treatments based on the pathology. They are *Navasadara* (Ammonium chloride; NH<sub>4</sub>CL), *Kapardha* (Marine shell or Cowrie), *Girisindhura* (Mercuric oxide; Hgo) and *Hingula* (Cinnabar; Hgs)
- **Suvarna (Aurum; Au)** Is having *Kashaya, Tikta, Madhura, Katu rasa, Shita guru, Snigdha, and Picchila guna, Chakshushya, Tridosha shamaka* properties.<sup>[20]</sup> There is one *Yoga* available in *Astanagahridaya* which is indicated in *Timira*, where many diseases of eye in allied texts fall under this category.
- **Rajata (Silver:Ag):** *Rajata* constitutes *Kashaya, Amla, Madhura rasa, Shita guru, Snigdha, and Sara guna, Chakshushya, Tridosha shamaka* properties and is mainly *Vatakaphahara*.<sup>[21]</sup> It is used in the condition where *Ruja* is associated.
- **Tamra (Copper: Cu):** Constitutes *Kashaya, Tikta, Madhura, Amla rasa, Shita, Laghu, Snigdha* and *Sara guna, Ushna virya, Katu Vipaka, Netrya, Vata-kaphahara, Pittakaphahara* properties. <sup>[22]</sup> Also being *Sravahara*, specifically it is helpful in *Kapha, Rakta* and *Pittajavyadhi*. It is also indicated in *Kaphaja vyadhis* in association with *Rakta* like *Ajaka, Timira, Pistika, Praklinnavartma*. In all these disorders *Anjanaprayoga* is advised.
- **Loha (Iron:Fe):** *Loha* possess *Madhura tikta rasa, Shita viya, Guru guna, Lekhana balya Kaphapittahara* property. <sup>[23]</sup>
- **Vanga (Tin:Sn):** Is said to be *Chakshushya* due to its specific properties.<sup>[24]</sup> It can be used in secondary eye diseases like *Diabetic retinopathy*.

- **Yashada (Zinc:Zn):** Is having *Tikta, Kashaya, Katu rasa, Shita guna, Chakshushya, Pittahara* properties.<sup>[25]</sup>
- **Kamsya (White copper; bronze):** Kamsya does *Netra prasadana* and posses *Tikta rasa, Ushna veerya, Lekhana, Sara, Rooksha, Visada, Deepana Kapha pitta hara* and *Vataghna* properties.<sup>[26]</sup>
- **Vartalooha (bronze; Cu Sn):** Is having *Amla, Katu rasa, Shita, Ruksha guna, Shita virya, Kaphapittahara* and *Netra roga nashana* properties.<sup>[27]</sup>
- **Mukta (Pearl:CaCO<sub>3</sub>):** As it is having *Madhura rasa, Laghuguna, Sheetaveerya, Deepana, Balya, Kaphapittahara* property<sup>[28]</sup> it is helpful in *Shuktika* and in chronic disorders of the eye.
- **Pravala (Vidhruma) (Coral:CaCO<sub>3</sub>):** There is one yoga *Prabodhananjana* quoted by Sharangadhara mainly indicated in *Tandra*. Though there are no *Yogas* on *Netra prakarana*, it can be used in *Rakta pittaja netra vyadhis*.
- **Vajra (Diamond:C):** It is having *Shadrasa, Snigdha guna, Tridosha shamaka netrya* properties.<sup>[29]</sup> Though there is no preparation containing *Vajra*, it can be used in degenerative and auto immune prevalent diseases of Eye.
- **Vaidhurya Cat's eye: (BeO Al<sub>2</sub>O<sub>3</sub>):** It is having *Madhura rasa, Shita guna, Shita virya, Netrya pittagna* properties.<sup>[30]</sup>
- **Shankha (Conch Shell:CaCO<sub>3</sub>):** It is having *Kashaya, Katu rasa, Laghu* and *Shita guna, Shita virya, Netrapushpa hara* properties.<sup>[31]</sup> *Chandradoyavarti* is the one product available in market containing *Shanka*, indicated for *Timira, Patala rogas, Kandu* and *Ratrandhya* which are *Kaphaja* in nature.
- **Samudraphena (Cattle fish bone: CaCO<sub>3</sub>):** Is *Chakshushya* and the *rasa* which does *Lekhana, Deepana, Pachana* and *Kapha nashana*.<sup>[32]</sup> *Yogas* related to this are mainly available in *Charaka samhita*, which are *Sukhavati varti, Churnnanajana* and the most important *Drishtiprada varti* indicated in all the visual disturbances is commonly prepared yoga. For *Lekhana putapaka, Samudraphena* is also a chief ingredient.

#### Netra Yogas Containing Rasadravyas An Ingredient

**Table 2: Charaka Samhitha Chikithsa Sthana** <sup>[33]</sup>

S.No.	Yoga	Indications	Reference
1.	<i>Gairikadi bidalaka</i>	<i>Kaphaja Netraroga</i>	<i>Ch.Sa.Chi.26/235pp. 659</i>
2.	<i>Manahshiladi bidalaka</i>	<i>Kaphaja netraroga</i>	<i>Ch.Sa.Chi.26/235pp. 659</i>
3.	<i>Souviradi choornajana</i>	<i>Timira</i>	<i>Ch.Sa.Chi.26/250-251pp. 661</i>
4.	<i>Sumanah korakadi varti</i>	<i>Raktaja, Pittaja Netrarogas</i>	<i>Ch.Sa.Chi.26/241; pp.660</i>
5.	<i>Sukavathivarti</i>	<i>Timira, Patalagata Roga, Kacha, Arma, Shukra, Kandu, Arbuda</i>	<i>Ch.Sa.Chi.26/252-253; pp.661</i>
6.	<i>Choornajana</i>	<i>Arjuna, Netrakandu, Kacha, Kaphaja, Netraroga</i>	<i>Ch.Sa.Chi.26/246-247; pp.660</i>
7.	<i>Drushtipradha varti</i>	<i>Andhatva</i>	<i>Ch.Sa.Chi.26/254-255; pp.661</i>
8.	<i>Samudraphenadivarti</i>	<i>Shukra</i>	<i>Ch.Sa.Chi.26/242; pp. 660</i>
9.	<i>Shankadivati</i>	<i>Sarva Netraroga</i>	<i>Ch.Sa.Chi.26/246; pp. 660</i>

**Table 3: Sushruta Samhitauttara Sthana (Su.Sa.Ut.)** <sup>[34]</sup>

1.	<i>Anjana</i>	<i>Sirotpata</i>	<i>Su.Sa.Ut.12/16; pp.616</i>
2.	<i>Pratisarana</i>	<i>Krimigranthi</i>	<i>Su.Sa.Ut.14/8; pp.621</i>
3.	<i>Anjana</i>	<i>Sirotpata</i>	<i>Su.Sa.Ut. 12/15; pp.616</i>
4.	<i>Anjana</i>	<i>Pittavidagda Drushti</i>	<i>Su.Sa.Ut.15/12; pp.621</i>
5.	<i>Anjana</i>	<i>Pittavidagda Drushti</i>	<i>Su.Sa.Ut. 15/18; pp.621</i>
6.	<i>Anjana</i>	<i>Drishtigata rogas</i>	<i>Su.Sa.Ut. 15/27; pp.622</i>
7.	<i>Anjana</i>	<i>Siroharsha</i>	<i>Su.Sa.Ut12/17; pp.617</i>
8.	<i>Anjana</i>	<i>Praklinna Vartma</i>	<i>Su.Sa.Ut 12/48; pp.619</i>
9.	<i>Anjana</i>	<i>Drishtigata rogas</i>	<i>Su.Sa.Ut 15/18, pp. 621</i>
10.	<i>Anjana</i>	<i>Praklinna vartma</i>	<i>Su.Sa.Ut.11/16; pp.615</i>
11.	<i>Anjana</i>	<i>Ajaka</i>	<i>Su.Sa.Ut.12/41; pp.617</i>
12.	<i>Anjana</i>	<i>Ajaka</i>	<i>Su.Sa.Ut.12/46; pp.619</i>
13.	<i>Anjana</i>	<i>Praklinna vartma</i>	<i>Su.Sa.Ut.12/50; pp.619</i>
14.	<i>Anjana</i>	<i>Ajaka</i>	<i>Su.Sa.Ut. 12/40-41; pp.617</i>

**Table 4: Astanga Hridayauttara Sthana (Ah. Hr.Ut.)** <sup>[35]</sup>

1.	<i>Bhaskara choorna</i>	<i>Kacha, Arma, Naktandhya, Raktaraji</i>	<i>Ah. Hr.Ut. 13/28-30; pp.820</i>
2.	<i>Sasyaka anjana</i>	<i>Improves The Vision</i>	<i>Ah. Hr.Ut. 13/33; pp.820</i>
3.	<i>Pratisarana Anjana</i>	<i>Timira</i>	<i>Ah. Hr.Ut. 13/34; pp.820</i>
4.	<i>Bhujanganjana</i>	<i>Timira</i>	<i>Ah. Hr.Ut. 13/31-32;pp.820</i>
5.	<i>Gairikadi varti</i>	<i>Arshas, Kshatashukra</i>	<i>Ah. Hr.Ut. 11/32; pp.814</i>



6.	<i>Gairikadi Anjana</i>	<i>Ratryandha</i>	<i>Ah. Hr.Ut. 13/84; pp.824</i>
7.	<i>Sphatikanjana</i>	<i>Timira</i>	<i>Ah. Hr.Ut 13/66; pp.823</i>
8.	<i>Sphatikanjana</i>	<i>Sirotpata</i>	<i>Ah. Hr.Ut. 11/12; pp.812</i>
9.	<i>Srotoanjandaianjana</i>	<i>Andhatva</i>	<i>Ah. Hr.Ut.13/36; pp.821</i>
10.	<i>Srotoanjandaianjana</i>	<i>Andhatva</i>	<i>Ah. Hr.Ut.13/41; pp.821</i>
11.	<i>Manahashiladi anjana</i>	<i>Timira, Pilla, Shukra, Arma</i>	<i>Ah. Hr.Ut. 11/24; pp.813</i>
12.	<i>Churnanjanana</i>	<i>Timira</i>	<i>Ah. Hr.Ut. 13/20-22; pp.820</i>
13.	<i>Tamradianjana</i>	<i>Puyalasa</i>	<i>Ah. Hr.Ut. 11/5; pp.812</i>
14.	<i>Tamradianjana</i>	<i>Timira</i>	<i>Ah. Hr.Ut. 13/74; pp.823</i>
15.	<i>Tamradianjana</i>	<i>Sarvashukra roga</i>	<i>Ah. Hr.Ut. 12/34-35; pp.820</i>
16.	<i>Lohanjana</i>	<i>Timira, Arma, Raktaraji, Kandhu, Kacha</i>	<i>Ah. Hr.Ut. 13/23-24; pp.824</i>
17.	<i>Yashadadi anjana</i>	<i>Timira</i>	<i>Ah. Hr.Ut. 13/28-29; pp.824</i>

**Table 5: Ashtanga Sangraha Uttara Sthana (Ah. Sa.Ut.)<sup>[36]</sup>**

1.	<i>Loha Tripala Choorna</i>	<i>Timira</i>	<i>Ah. Sa.Ut.16 /17; pp.139</i>
2.	<i>Tapyadi Choorna</i>	<i>Timira</i>	<i>Ah. Sa.Ut.16 /20; pp.139</i>
3.	<i>Swarnadii Choorna</i>	<i>Timira</i>	<i>Ah. Sa.Ut.16 /19; pp.139</i>
4.	<i>Churnajana</i>	<i>Timira</i>	<i>Ah. Sa.Ut.16 /25; pp.140</i>
5.	<i>Churnajana</i>	<i>Timira</i>	<i>Ah. Sa.Ut.16 /25-26; pp.140</i>
6.	<i>Bhaskara Choorna</i>	<i>Timira, Kacha, Arma, Naktandha, Raktaraji</i>	<i>Ah. Sa.Ut.16 /27-28; pp.140</i>
7.	<i>Sukhavati Varti</i>	<i>Timira, Kacha, Shukraka</i>	<i>Ah. Sa.Ut.16 /30-31; pp.140</i>
8.	<i>Drstiprada Varti</i>	<i>Bhagna Chakshu</i>	<i>Ah. Sa.Ut.16 /32-33; pp.140</i>
9.	<i>Pratyanjana</i>	<i>Timira</i>	<i>Ah. Sa.Ut.16 /44; pp.142</i>
10.	<i>Anjana</i>	<i>Timira</i>	<i>Ah. Sa.Ut.16 /53; pp.143</i>
11.	<i>Vimalavarti</i>	<i>Timira</i>	<i>Ah. Sa.Ut.16 /58; pp.143</i>
12.	<i>Kokila Varti</i>	<i>Timira</i>	<i>Ah. Sa.Ut.16 /59; pp.144</i>
13.	<i>Varti</i>	<i>Sukra, Pilla</i>	<i>Ah. Sa.Ut.16 /61; pp.144</i>
14.	<i>Anjana</i>	<i>Nishandhya, Timira</i>	<i>Ah. Sa.Ut.16 /59; pp.144</i>
15.	<i>Varti</i>	<i>Timira</i>	<i>Ah. Sa.Ut.16/80-81; pp.147</i>
16.	<i>Shirovaktralepa</i>	<i>Linganasha</i>	<i>Ah. Sa.Ut.17 /14; pp.152</i>
17.	<i>Bidalaka</i>	<i>Linganasha</i>	<i>Ah. Sa.Ut.19 /3-4; pp.161</i>
18.	<i>Ashchotana</i>	<i>Linganasha</i>	<i>Ah. Sa.Ut.19 /8; pp.162</i>
19.	<i>Anjana</i>	<i>Linganasha</i>	<i>Ah. Sa.Ut.19 /23; pp.165</i>
20.	<i>Anjana</i>	<i>Vatakshiroga, Vedana, Raga, Shopha, Timira</i>	<i>Ah. Sa.Ut.19 /24; pp.165</i>
21.	<i>Anjana</i>	<i>Vedana, Pittaja Roga</i>	<i>Ah. Sa.Ut.19 /34; pp.167</i>
22.	<i>Churnajana</i>	<i>Netra Daha Raga</i>	<i>Ah. Sa.Ut.19 /35; pp.167</i>
23.	<i>Kumarivarti</i>	<i>Kaphaja Netra Roga</i>	<i>Ah. Sa.Ut.19 /46; pp.169</i>
24.	<i>Churnajana</i>	<i>Pothaki, Bahalavartma, Kaphotklishta, Abhishyandha</i>	<i>Ah. Sa.Ut.19 /46; pp.169</i>
25.	<i>Varti</i>	<i>Kaphaja Netra Roga</i>	<i>Ah. Sa.Ut.19 /46; pp.169</i>
26.	<i>Kandhachitra Varti</i>	<i>Sarvakshi Roga</i>	<i>Ah. Sa.Ut.19 /49; pp.169</i>
27.	<i>Anjana</i>	<i>Netra Kundha</i>	<i>Ah. Sa.Ut.19 /50; pp.170</i>
28.	<i>Seka</i>	<i>Abhishyandha</i>	<i>Ah. Sa.Ut.19 /63; pp.172</i>
29.	<i>Bidalaka</i>	<i>Netra Raga, Daha, Gharshna</i>	<i>Ah. Sa.Ut.19 /65-66; pp.172</i>
30.	<i>Varti</i>	<i>Kaphaja Netra Roga</i>	<i>Ah. Sa.Ut.19 /71; pp.173</i>
31.	<i>Abhya Anjana</i>	<i>Netra Daha, Raga, Ashru</i>	<i>Ah. Sa.Ut.20 /7; pp.175</i>

**Table 6: Bhavaprakasha (Bh. Pr)<sup>[37]</sup>**

1.	<i>Mahanjana</i>	<i>Sarvanetramaya</i>	<i>Bh. Pr. 63/220-222; pp.634</i>
2.	<i>Ropanirasakriya anjana</i>	<i>Pushpa</i>	<i>Bh. Pr. 63/208-211; pp.633</i>
3.	<i>Bidalaka</i>	<i>Sarvanetra Amaya</i>	<i>Bh. Pr.63/162; pp.629</i>
4.	<i>RopaniRasakriya anjana</i>	<i>Praklinna vartma, Netrasrava</i>	<i>Bh. Pr. 63/207-211; pp.633</i>
5.	<i>Bidalaka</i>	<i>Sarvanetra Amaya</i>	<i>Bh. Pr. 63/162; pp. 629</i>
6.	<i>Shonanjana</i>	<i>Timira, Patala, Pushpa</i>	<i>Bh. Pr. 63/223-224; pp.635</i>
7.	<i>Anjana</i>	<i>Naktandhya</i>	<i>Bh. Pr.63/201; pp.633</i>
8.	<i>Lekhani vatti</i>	<i>Timira, Ratrandhya, Kacha, Arbudha,</i>	<i>Bh. Pr. 63/202; pp.633</i>
9.	<i>Lekhana choorna</i>	<i>Pushpa</i>	<i>Bh. Pr. 63/219; pp.634</i>

**Table 7: Sharangadhara Samhitha Uttara Khanda (Sh.Sa.Ut.)<sup>[38]</sup>**

1.	<i>Rasanjana varti</i>	<i>Naktandhya</i>	<i>Sh.Sa.Ut.13/85; pp. 267</i>
2.	<i>Prabodhanjana</i>	<i>Tandra</i>	<i>Sh.Sa.Ut.13/89; pp.267</i>
3.	<i>Chandrodaya varti</i>	<i>Timira, Patala, Kandu, Arbudha, Kacha, Patala, Ratrandhya</i>	<i>Sh.Sa.Ut.13/75-77; pp.266</i>

4.	Lekhana Putapaka	Kaphaja netra roga	Sh.Sa.Ut.13/59; pp.265
5.	Samudraphenadivarti	Shukra	Sh.Sa.Ut13/79; pp.266

**Table 8: Bhaishajya Ratnavali (B. R.)<sup>[39]</sup>**

1.	Tutthadi drava	Savrana, Avrana Shukra	B. R. Netraroga Adikara 64/69; pp.991
2.	Saindhavadi lepa	Sarvanetra roga	B. R. Netra roghadikara64/10; pp. 982
3.	Savrana shukra harivarti	Savrana shukla	B. R. Netraroghadikara64/66; pp. 989
4.	Anjana	Savrana shukra	B.R.Netrarogadhikara 64/65; pp.989
5.	Kasisadi anjana	Shirotpaata	B. R. Netrarogadhikara 64/63; pp.989
6.	Anjana	Siroharsha	B. R. Netraroghadikara 64/64; pp. 989
7.	Anjana	Savrana shukra	B. R. Netrarogadhikara 64/65; pp. 989

**Table 9: Yogaratnakara<sup>[40]</sup>**

1.	Shashikalavarti	Timira Roga, Netrakandhu, Srava, Arma, Pillaroga	Yogaratanakara, Netraroga chikitsa-248; pp.783
2.	Anjana	Netrakandu, kacha, Kaphaja netraroga	Yogaratanakara, Netraroga chikitsa-244-246; pp.782
3.	Nayanamrita	To improve the Vision	Yogaratanakara, Netraroga chikitsa-187-188; pp.777
4.	Shilarasadi anjana	Kacha, Netrashukra, Arma, Timira	Yogaratanakara, Netraroga chikitsa-248; pp.783
5.	Nadijadi gutikanjana	Ratrandhya, Divandhya	Yogaratanakara, Netraroga chikitsa-253; pp.783
6.	Nepaladi vrtmyanjana	Kaphaja timira	Yogaratanakara, Netra roga chikitsa-153; pp.773
7.	Muktamaha anjana	Netraroga	Yogaratanakara, Netraroga chikitsa-174-176; pp.776
8.	Shankadivati	Timira, Arbhuda	Yogaratanakara, Shankadivati 1-2; pp.755

**Table 10: Chakradatta<sup>[41]</sup>**

1.	Shrinagarjuna varti	Timira, Patala, Pillaroga	Chakradatta, 59/125-129; pp.576
2.	Tuttakavarti	Shukra	Chakradatta, 59/72; pp.569
3.	Manjishtadi choorna anjana	Kandu, Kleda, Pillaroga, Arma, Ruja	Chakradatta 59/229; pp.588
4.	Gairikadi gutikanjana	Netra ruja	Chakradatta 59/22; pp.563
5.	Durvadi lepa (Pratisarana)	Savrana Shukra	Chakradatta 59/158; pp.579
6.	Saindhavadi gutikanjana	Sarvanetra roga	Chakradatta 59/10; pp.562
7.	Kasisadi rasakriya	Arma, Kacha, Timira, Arjuna, Vartmaroga	Chakradatta 59/203; pp.585
8.	Anjana	Drishtigata rogas	Chakradatta 59/167; pp.580
9.	Katakadyanjana	Kshatashukra ruja	Chakradatta 59/69; pp.569
10.	Saindhavadi varti	Shukra, Pishtika	Chakradatta59/79; pp.570
11.	Triphaladya Anjana	Andhatva	Chakradatta 59/115; pp.575
12.	Pippalyadi gutikanjana	Arma, Timira, Kacha, Shukra, Arjuna, Ajaka, Other Netra Rogas	Chakradatta 59/201-202; pp.585
13.	Kokiladivarti	Timira	Chakradatta 59/131; pp. 660
14.	Pravala anjana	Shuktika	Chakradatta 59/205; pp.585
15.	Meshashringadivarti	Timira	Chakradatta 59/162-163; pp.580
16.	Shankadivarti	Timira	Chakradatta 59/136-137; pp.277
17.	Chandrodaya varti	Timira, Patala, Kandru, Arbudha, Kacha, Patala, Ratrandhya	Chakradatta 59/110; pp.574
18.	Shankhadyanjana	Netra shukra, Timira	Chakradatta 59/82; pp.571
19.	Sukavathivarti	Timira, Patalagata Roga, Kacha, Arma, Shukra, Kandru, Arbuda	Chakradatta 59/109; pp.574

**Charaka Samhitha Chikithsa Sthana (Ch.Sa.Chi.)<sup>[42]</sup>**

**Bhaishajya Ratnavali (B. R.)<sup>[43]</sup>**

**Table 11: Other Important Rasa Yogas For Netra are mentioned in different contexts**

Yogas	Indication	References
Lohadirasayana	Atibalendriyaa	Ca.Ci.1; 1/15-23; Rasayanadhyaya 3 <sup>rd</sup> Pada pp.21-22
Lakshmvilasa rasa	Akshi vikara	B.R.jwradhikara 5/1223-1236; pp.213-214
Vatagajendra simha	Ksinendriya	B.R.Amavatadhikara29/81-86; pp.827-828
Rajatadi loha	Netra vikara	B.R.Rajyakshmadhikara 14/87-88; pp.550
Kasturibhairava rasa	Urdhvajatrugataroga	B.R.jwradhikara 5/812-815; pp.157
Saptamrita loha	Timira	B.R.Shularogadhikara 30/130-131; pp.866
Yogendra rasa	Hatendriya	B.R.vatavyadhirogadhikara 26/160-166; pp.723
Panchamrita parpati	Netra roga	B.R.Grahanirogadhikara 8/458-460; pp.359

Rasaushadhis can be used in treating different ophthalmic pathological conditions which can manifest either as primary or secondary conditions. Rasaushadhis

are also utilized in treating the primary cause which left untreated may land up in manifesting ophthalmic disorder as secondary result. Ex. Primary cause diabetes mellitus

leading to secondary condition diabetic retinopathy. Some of the *Rasa yogas* used are, *Vasanta Kusumakara Rasa*, *Gandhaka Rasayana*, *Brihat Vata Chintamani* etc.

## DISCUSSION

- The present generation is encountering different eye diseases and the prevalence of these disorders are seemingly increasing with the changing pattern of existing diseases due to different causative factors.
- Many drugs and measures in allied sciences creates a number of inconveniences like high rate adverse effects, recurrences, permanent damages and in some cases there is no treatment options at all.
- *Rasaushadhis* will be an elixir in such conditions to enhance the bio-availability and efficacy of the drug, thereby minimizing the target time, adverse effect associated with it and the dosage.
- *Rasaushadhis* due to its unique drug action is a boon in treating certain challenging disorders.
- The *Bhasmas* used in the preparation of these *Yogas* possess different activities like immunomodulatory, Anti-oxidant, Free radical scavenging, Analgesic and Anti-inflammatory.
- The delicacy of *Rasa* allows it to slip between the minute *Srotases* and penetrate into *Gambheera dhatu* carrying its highly potent charge and the *Samskara* of *Rasas* helps in active and quick assimilation even in minute doses within the body. As coined by the contemporary authors the *Rasaushadhis* also known as *Rasa rasayana* help in better tissue nourishment and maintains the patency of *Srotas*.
- On analyzing some of the metals and minerals from the modern perspective Copper (*Tamra*) produces collagen, which is a component of the connective tissues, and it keeps cell membranes healthy. Both of which are crucial to eye health.
- **Magnesium** protects against glaucoma and has even been known to improve vision in patients who already have glaucoma. It is also important in nerve conduction, dilating blood vessels and maintaining blood flow to the eye.
- **Zinc (Yashadha)** has been shown to slow down the onset of macular degeneration. Zinc also protects tissues and strengthens eye cells, protects against swelling and helps to absorb Vitamin A in Retina.
- **Chromium** improves vision as it plays a role in muscle contraction, which helps to focus the eye.
- **SELENIUM** Known for boosting the immune system and fighting off infection, this antioxidant helps to prevent cataract and macular degeneration by reducing free radicals that can damage the eye. [44]

## CONCLUSION

1. The article was taken up to compile various *Rasaushadhis* explained in the context of *Netra vikaras* and to assess its importance in managing *Netra vikaras*.
2. With the above mentioned regard various *Rasa yogas* where compiled from different classical treatises starting from *Samhitha* period to early modern period.

3. Among the different *Rasadravyas Sasyaka*, *Anjana*, *Shankha*, *Samudraphena* and *Gairika* appeared to be more commonly used in treating *Netra vikaras*.
4. Among the compiled formulations, most of the preparations are used for external administration in the form of *Kriya kalpas* and minimally used for internal administration.
5. Again on further considering the type of *Kriyakalpa*, it is seen that following procedures are most commonly used in descending order - *Anjana Pratisarana Bidalaka & Putapaka*.
6. *Anjana* is one such unique *Kriyakalpa* when methodically performed in chronic & complicated eye diseases, a positive results can be noticed even in involvement of posterior segmental structures. This encouraging results can be due to the unique property of the medicines utilized and the procedure performed methodically.
7. Nano technology well known For its minute form and advance drug delivery system help us in better analysing and understanding the rationality behind designing the most potent dosage form that is *Bhasma* explained in Ayurvedic ancient texts.
8. Henceforth a through knowledge in classical *Rasa aushadhis* along with nano science as got a better scope in understanding and evaluating the *Rasa yogas*, thereby benefiting human race to accomplish the normal health in their fullest form which is the primary moto of *Ayurveda*.

## REFERENCES

1. Dr.Dingari lakshmana Charya. Vol 2, diseases of eye, Head and E.N.T, The Shalakyta tantra, Delhi; Chowkhamba Sanskrit pratishtan first edition, pp-52.
2. P.Himasagara Chandra Murthy, Rasasastra; Chowkhamba Sanskrit series office, Varanasi, reprint-2012 pp-41.
3. Dr.Damodar joshi, Rasasastra (English edition); Chaukhambha orientalia, Varanasi, reprint-2013, pp-152.
4. Dr.Damodar joshi, Rasasastra (English edition); Chaukhambha orientalia, Varanasi, reprint-2013, pp.197.
5. Dr.Damodar joshi, Rasasastra (English edition); Chaukhambha orientalia, Varanasi, reprint-2013, pp.234.
6. Dr.Damodar joshi, Rasasastra (English edition); Chaukhambha orientalia, Varanasi, reprint-2013, pp.89.
7. Dr.Damodar joshi, Rasasastra (English edition); Chaukhambha orientalia, Varanasi, reprint-2013, pp. 261.
8. Dr.Damodar joshi, Rasasastra (English edition); Chaukhambha orientalia, Varanasi, reprint-2013, pp. 315.
9. Dr.Damodar joshi, Rasasastra (English edition); Chaukhambha orientalia, Varanasi, reprint-2013, pp.159.
10. Dr.Damodar joshi, Rasasastra (English edition); Chaukhambha orientalia, Varanasi, reprint-2013, pp.171.



11. Dr.Damodar joshi, Rasasastra (English edition); Chaukhambha orientalia, Varanasi, reprint-2013, pp.176.
12. Dr.Damodar joshi, Rasasastra (English edition); Chowkhamba orientlia, Varanasi reprint-2013, pp.187.
13. Dr.Damodar joshi, Rasasastra (English edition); Chaukhambha orientalia, Varanasi, reprint-2013, pp.195.
14. Dr.Damodar joshi, Rasasastra (English edition); Chaukhambha orientalia, Varanasi, reprint-2013, pp.201.
15. Dr.Damodar joshi, Rasasastra (English edition); Chaukhambha orientalia, Varanasi, reprint-2013, pp.220.
16. Dr.Damodar joshi, Rasasastra (English edition); Chaukhambha Orientalia, Varanasi, reprint-2013, pp.217.
17. Dr.Damodar joshi, Rasasastra (English edition); Chaukhambha orientalia, Varanasi, reprint-2013, pp.311.
18. Dr.Damodar joshi, Rasasastra (English edition); Chaukhambha orientalia, Varanasi, reprint-2013, pp.225.
19. Dr.Damodar joshi, Rasa sastra (English edition); Chaukhambha orientalia, Varanasi, reprint-2013, pp.211.
20. Dr.Damodar joshi, Rasasastra (English edition); Chaukhambha orientalia, Varanasi, reprint-2013, pp.109.
21. Dr.Damodar joshi, Rasasastra (English edition); Chaukhambha orientalia, Varanasi, reprint-2013, pp.111.
22. Dr.Damodar joshi, Rasasastra (English edition); Chaukhambha orientalia, Varanasi, reprint-2013, pp. 115.
23. Dr.Damodar joshi, Rasasastra (English edition); Chaukhambha orientalia, Varanasi, reprint-2013, pp. 122-123.
24. Dr.Damodar joshi, Rasasastra (English edition); Chaukhambha orientalia, Varanasi, reprint-2013, pp. 139.
25. Dr.Damodar joshi, Rasasastra (English edition); Chaukhambha orientalia, Varanasi, reprint-2013, pp. 144.
26. Dr.Damodar joshi, Rasasastra (English edition); Chaukhambha orientalia, Varanasi, reprint-2013, pp. 150.
27. Dr.Damodar joshi, Rasasastra (English edition); Chaukhambha orientalia, Varanasi, reprint-2013, pp. 151.
28. Dr.Damodar joshi, Rasasastra (English edition); Chaukhambha orientalia, Varanasi, reprint-2013, pp. 323.
29. Dr.Damodar joshi, Rasasastra (English edition); Chaukhambha orientalia, Varanasi, reprint-2013, pp. 283.
30. Dr.Damodar joshi, Rasasastra (English edition); Chaukhambha orientalia, Varanasi, reprint-2013, pp. 288.
31. Dr.Damodar joshi, Rasasastra (English edition); Chaukhambha orientalia, Varanasi, reprint-2013, pp. 315.
32. P.Himasagara Chandra Murthy, Rasasastra; Chowkhamba Sanskrit series office Varanasi, reprint-2012 pp. 415
33. Acharya Vaidyadhar Shukla, Pro.Ravi Dutt Tripathi, Charaka samhitha (uttrardha) vaidyamanorama hindi commentary; Chowkhamba Sanskrit pratishthan Delhi reprint-2012.
34. Dalhana tika by Vaidya jadavji Trikamji acharya, Sushruta Samhita Uttara tantra, Chowkhamba Surbharati prakashan, Varanasi, reprint-2014.
35. Pr. Hari Sadasiva sastri paradkara bhisagacharya, Vagbhata's Ashtanga Hridaya Sutrasthana; Chowkhamba Surbharati prakashan Varanasi reprint-2014.
36. Pr.K.R.Shrikantha murthy, Ashtanga sangraha-3; English translation Chaukhambha orientalia, Varanasi, reprint-2012.
37. Dr.Bulisu Sitaram, Bhavaprakasaha-vol II Chaukhambha orientalia, Varanasi, reprint-2014.
38. Pr. K.R.Shrikantha murthy, sharangadhara smhita; Chaukhambha orientalia, Varanasi, reprint-2012.
39. Kaviraja-govindadaassena virachita Vakhyakara is Pr. Siddinandan Mishra, Bsheshaja Ratnavali Vol II Chowkhamba Surbharati prakashan Varanasi reprint-2015
40. Dr Indradev Tripatithi and Dr Dayashankar Tripathi, Yogaratnakara, Uttararatra Adhimantha Anyatovata Chikitsa, Krishnadas Acadamy, Varanasi, edition 1997.
41. Chakradatta edited by Dr.G.Prabhakara rao, Chakradatta, Chaukhambha orientalia, Varanasi, reprint-2014, pp. 824.
42. P.V.Sharma, charaka samhitha vol II, Chaukhambha orientalia, Varanasi, reprint-2014, pp.
43. Bsheshaja Ratnavali voll Kaviraja-govindadaas senavirachita Vakhyakara is Pr. Siddinandan Mishra Chowkhamba Surbharati prakashan Varanasi reprint-2015 pp.1196.
44. Nutrition and eye,the best source of eye healthy vit-E and zinc ([http://www.allaboutvision.com/nutrition/vitamin\\_e.htm](http://www.allaboutvision.com/nutrition/vitamin_e.htm))AAV Media.LLC; c. 2000-2016(cited 2016 Aug 16) Available From: <http://www.all about vision.com>.

**Cite this article as:**

Padmavathi T Rathod, Mamatha KV, Gopal, Sujathamma K. A Critical Review of Rasaoushadies in the Management of Netra Rogas (Eye Diseases). International Journal of Ayurveda and Pharma Research. 2016;4(8):74-80.

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

**\*Address for correspondence**

**Dr. Padmavathi T Rathod**

PG Scholar, Department of PG Studies in Shalaky Tantra, SKAMCH & RC, Bengaluru, Karnataka, India.

Email: [padmavathi.rathod@gmail.com](mailto:padmavathi.rathod@gmail.com)

Phone: 08970740693