



Research Article

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CRITICAL ANALYSIS OF CHAKSHUSHYA DRAVYAS AND ITS CLINICAL APPLICATIONS WITH SPECIAL REFERENCE TO SUSHRUTA SAMHITA

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ABSTRACT

Netra is considered as one of the very important organs in human body. *Chakshushya dravyas* are the materials which are believed to be beneficial for eyes, henceforth usages of those *Dravyas* are recommended in various contexts of *Sushruta Samhita*. In the light of this knowledge and based on *Rasadi gunas* of *Chakshushya dravyas* explained in *Ayurveda*, a critical analysis of those *dravyas* is done to find out the logic behind the labelling of 'Chakshushya dravyas'. *Triphala*, *Ksheera*, *Madhu*, *Ghrta*, *Prapoundarika*, *Saindhava*, *Yava*, *Shatavari*, *Mudga*, *Jeevanti*, *Patola* are critically analyzed. Even though most of the *Chakshushya dravyas* are predominantly *Madhura rasa dravyas*, there are *dravyas* that are *Katu* and *Kashaya rasa* predominant which are seldom told as *Chakshushya*. *Tikta rasa* is not considered as *Chakshushya* but some of the *Chakshushya dravyas* are *Tikta rasa Pradhana*. Majority of *Chakshushya dravyas* possess *Rasayana*, *Brimhana*, or *Vrishya* properties and all of them are not directly contributing to vision. There are 'Chakshushya Rasayana' *dravyas* i.e., *dravyas* which directly enhances the vision and other *dravyas* which pacifies the underlying diseases of eye and prevent the secondary manifestations.

Keywords: *Chakshushya dravya*, *Sushruta Samhita*, *Chakshushya Rasayana dravyas*.

INTRODUCTION

Ayurveda, being a life science, advocates "Swasthasya swasthya rakshanam, aaturasya vikara prashamanam". *Swasthya rakshanam* is mainly by the means of following a healthy diet and also it aids for prevention of diseases. *Ayurveda* gives instructions in each aspect of life, and it has analysed all those aspects with its basic principles. *Shalakya Tantra* which is one among the *Ashtanga Ayurveda* deals with the *Urdhwajatrugata vikaras*, among which *Ophthalmology* is an emerging branch in which the effect of *Chakshushya Dravya* is inevitable and quite

interesting. In the classical books of *Ayurveda* there is mentioning of *Chakshushya dravyas* for the healthy maintenance of eyes. Before the commencement, the work; 'Chakshu' means 'Darshanendriya' i.e., sense of vision and 'Chakshushya' means which is beneficial for 'Chakshu'. *Nayana/ Chakshu* is considered as one of the important sense organs in human body, which is composed of *Panchamahabhutas*¹, and it is the seat of *Alochakapitta*². In *Ashtanga Hridaya*, *Acharya Vagbhata* opines that *Netra* is at risk with chance of afflictions of *Kaphadosha*³. *Dalhana* mentions 'Chakshushe Hitam chakshushyam'⁴.

Table 1: *Rasa veerya doshaghnata* of the *Chakshushya dravyas*

Dravya	Rasa	Veerya	Doshaghnata	Reference
Triphala				
• Haritaki	Pancharasa (lavanavarjita)	Sheeta	Kaphapittahara	Sushruta Samhita
• Vibhitaki	Kashaya	Ushna	Tridosahara	Sushruta Samhita
• Amalaki	Lavanavarjita Pancharasa	Ushna	Tridosahara	Sushruta Samhita
Ksheerasarpi	Madhura	Sheeta	Raktapittahara	Sushruta Samhita
Ghrta	Madhura	Sheeta	Vatapittahara	Sushruta Samhita
Madhu	Madhura	Sheeta	Tridosahara	Kayyadeva nighantu
Prapoundarika	Kashaya madhura	Sheeta	Pittahara	Raja nighantu
Yava	Madhura	Sheeta	Kaphapittahara	Yogaratanakara
Shatavari	Madhura tikta	Sheeta	Vatapittahara	Kayyadeva nighantu
Mudga	Kashaya madhura	Sheeta	Kaphapittahara	Kayyadeva nighantu
Saindhava	Lavana Madhura anurasa	Sheeta	Tridosahara	Vangasena
Jeevanti	Madhura	Sheeta	Tridosahara	Kayyadeva nighantu
Lodhra	Kashaya madhura	Sheeta	Kaphapittahara	Bhavaprakasha nighantu
Patola	Tikta	Sheeta	Kaphapittahara	Yogaratanakara
Draksha	Madhura	Sheeta	Vatapittahara	Bhavaprakasha nighantu

There are ample *Dravyas* which are told to be *Netrya* and *Chakshushya* in *Brihatrayees*, *Laghutrayees* and as per various other authors. Among them a few are selected from scattered references and usage of those *Dravyas* in various contexts of *Sushruta Samhita*⁶ are being evaluated here. It includes both the vision enhancing drugs and depending on the *Doshaghna* property of those *Chakshushya Dravya*, it can be used to treat various disease conditions also. In the light of this knowledge and based on *Rasadi gunas* of *Chakshushya dravyas* explained in *Sushruta Samhita*, a critical analysis of those *dravyas* is done to find out the logic behind labelling of *Chakshushya dravyas*.

Chakshushya dravyas

Chakshushya dravyas are explained in *Ayurvedic* classical books. The reference of *Chakshushya dravyas* are found scattered.

ANALYSIS OF CHAKSHUSHYA DRAVYAS

Triphala

Triphala attributes *Chakshushya* (beneficial to eyes), *Deepana* (carminative) and *Rasayana* (rejuvenating) properties⁵. It cures *Meha* (diabetes), *Vishama jwara* (fluctuating type of fever) and *Kushtha* (skin diseases).

Chemical constituents - *Amalaki* (*Emblica officinalis*) – Corilagin and Ellagic acid, Amino acids like proline, alanine, cysteine, glutamic acid, aspartic acid, and lysine. *Vibhitaki* (*Terminalia bellerica*)- Chebulagic acid, Gallic acid, Ellagic acid and Phenyllembin. *Haritaki* (*Terminalia chebula*)- Vitamin C, Gallic acid, Chebulagic acid and Terchebin.⁶

Pharmacological action - Antibacterial, anti-inflammatory, laxative, anti-diabetic and hypolipidemic antioxidant, antipyretic.⁷

Ksheerasarpi

Ksheerasarpi (milk fat- fat obtained by churning milk) is *Utkrishta* (best) among *sneha* (fats). It has *Madhura rasa* (sweet in taste), *Ati-sheeta* (cold in potency). It has properties like *Chakshushya* (beneficial to eyes), *Sangrahi* (constipating), *Raktapittahara* (cures bleeding disorders) *Netra Roga hara* (cures eye diseases) and *Netra Prasadana* (clears the vision)⁸.

Chemical constituent - Vitamin A, fatty acids like palmitic acid and oleic acid and cholesterol.⁹

Pharmacological action - Increases serum triglyceride level.¹⁰

Ghrita

Ghrita (ghee) is *Madhura rasa* (sweet in taste), *Sheeta veerya* (cold in potency), *Anabhisya* (which does not tend the *doshas* to liquefy) and *Sneha* (unctuous) in nature. It cures *Udavarta* (flatulence), *Apasmara* (epilepsy), *Shula* (colicky pain), *Jwara* (fever), and *Anaha* (abdomen distension). It acts on *Vata* and *Pitta dosha*. It attributes *Karmas* (therapeutic actions) like *Agni deepana* (carminative), *Smrutikara* (enhance memory), *Medhakara* (improves intelligence), *Balakara* (imparts strength), *Ayushya* (increase life span), *Vrishya* (aphrodisiac), *Vaya sthapana* (prevents senile changes), *Guru* (heavy for digestion), *Chakshushya* (beneficial for eyes), *Shleshmabhivardhana* (increases *kapha dosha*), *Paapmaalakshmi prashamana* (which eradicates sin and poverty), *Visha hara* (neutralize toxins), and *Rakshoghna* (kill evil spirits)¹¹.

Chemical constituent - Vitamin A, fatty acids like palmitic acid and oleic acid, cholesterol.¹²

Pharmacological action - Increase serum triglyceride level.¹³

Madhu

Madhu (honey) is *Agni deepana* (carminative), *Varnya* (bestows complexion), *Svarya* (good for voice), *Lekhana* (scraping in action), *Vajeekarana* (enhances sexual potency), *Shodhana* (cleansing), *Ropana* (healing), *Chakshushya Prasadana* (good for eyes), *Pittashleshma medo meha prashamana* (reduces *pitta dosha* and *kapha dosha*) *Visha prashamana* (neutralises the toxins), *Tridosha prashamanam* (pacifies all the three *doshas*). *Arghyamadhu* is *Chakshushya*, *Kapha pittahara*, *Kashaya katupaka*, *Balya* and *Tikta*¹⁴.

Chemical constituents - Fructose, glucose, maltose, amino acids, riboflavin, and ascorbic acid.¹⁵

Pharmacological action - Antioxidant, antibacterial and antimicrobial.¹⁶

Prapaundarika (Nelumbo nucifera)

Prapaundarika has *Kashaya*, *Tikta*, and *Madhura rasa*, *Sheeta veerya*, *Rakta* and *Pitta Prasadana*, *Chakshushya* and *Vrana ropana*¹⁷ properties.

Chemical constituents - Robinin, nuciferin and asmilobin.¹⁸

Pharmacological action - Haemostatic activity, antimutagenic activity against some common mutagen.¹⁹

Yava (Hordeum vulgare)

Yava is *Ruksha* (dry), *Sheeta* (cold), *Guru* (heavy), *Swadu* (sweet), *Sara* (free flowing), *vid krut* (increase faeces bulk), *Vatakrut* (generates gas), *Vrishya* (aphrodisiac), *Sthairyakara* (increase strength), reduces *Mutra* (urine), *Meda* (fat), *Pitta* and *Kapha*²⁰.

Chemical constituents - Tocopherols, tocotrienols and Vitamin E.²¹

Pharmacological action - Antioxidants, Antihyperglycemic, hepatoprotective and anti-inflammatory.²²

Shatavari (Asparagus racemosus)

Shatavari is *Vata pitta hara* in nature, *Madhura tikta rasa*, increases *Medha* (memory), *Agni* (hunger), and *Bala* (strength), possess *Brimhana* (nourishing), *Vrishya* (aphrodisiac) properties and it pacifies *Mutra roga*²³.

Chemical constituents - Sarsasapogenin, sitosterol, aspergamine A Vitamin A, B, and arginine.²⁴

Pharmacological action - Increases the secretion of prolactin and ACTH, anti-cancerous activity in human epidermal carcinoma of nasopharynx.²⁵

Mudga (Vigna radiata)

Mudga is *Ruchiprada* (imparts taste), has *Kashaya* (astringent) and *Madhura* (sweet) *rasa*, *Katu* (pungent) *vipaka* (nature of end-product of digestion), *Sheeta* (cold), *laghu* (light), pacifies *Kapha*

and *Pitta*, *Drishti Prasadana* (improves vision), and *Sangrahi* (relieves constipation)²⁶

Chemical constituent - Palmitic acid, oleic acid, linolenic acid, stearic acid²⁷

Pharmacological action - Antioxidant, anti-diabetic, anti-hypertensive, and anti-inflammatory.²⁸

Saindhava

Saindhava is *Chakshushya* (good for eyes), *Hridya* (healthy for heart), *Ruchya* (improves taste), *Laghu* (light), *Agni deepana* (carminative), *Snigdha* (unctuous), *Madhura* (sweet) as *anurasa* (secondary taste), *Vrishya* (aphrodisiac) and *Sheeta*, (cold) and it is best among the salts²⁹

Chemical constituents - Sodium, iodine, lithium, magnesium, and potassium.³⁰

Pharmacological action - Anti-inflammation, facilitate cellular absorption and stabilizes blood pressure.³⁰

Jeevanti (*Leptadenia reticulata*)

Jeevanti is *Sarvadoshahara* (alleviates all doshas), *Chakshushya* (good for eyes), *Madhura* (sweet), and *Hima* (cold)³¹

Chemical constituent - Amino acids like alanine, glycine, serine, valine, flavonoids, and tannins.³²

Pharmacological actions - Antibacterial, antioxidant and antidiabetic.³³

Lodhra (*Symplocos racemosa*)

Lodhra is *Kashaya* (astringent), *madhura* (sweet) *rasa*, *Ruksha* (dry), *Vata Prakopaka*, *Kapha* and *Pitta Prashamana*, *Sandhaneeya* (conjoin) and *Chakshushya* (good for eyes).³⁴

Chemical constituents - Symposide, loturine and colluturine.³⁵

Pharmacological action - Antifibrinolytic activity and spasmolytic activity.³⁶

Patola (*Trichosanthes cucumerina*)

Patola is *Krimihara* (anti-helminthic), *Sheeta* (cold) *veerya*, *Tikta* (bitter) *rasa*, *Madhura* (sweet) *vipaka*, and *Ruchiprada* (tasty).³⁷

Chemical constituent - Nicotinic acid, riboflavin, Vitamin C, and thiamine.³⁸

Pharmacological action - Seed extracts lower blood sugar, serum cholesterol and tryglycerides.³⁹

Draksha (*Vitis vinifera*)

Draksha is best among the fruits, possesses *Madhura* (sweet) *rasa* and *Madhura vipaka*, has *Kashaya* (astringent) *rasa* as *anurasa*, *Snigdha* (unctuous), *Hima* (cold) and *Guru* (heavy) *gunas*. It is *Vrishya* (aphrodisiac), *Chakshushya* (good for eyes), *Srushta mutraavid* (helps in easy evacuation of faeces and urine),

pacifies *Vata* and *Pitta dosha* and cures *Raktapitta* (bleeding disorders)⁴⁰.

Chemical constituents - Catechin, epicatechin, ergosterol and glucose.⁴¹

Pharmacological action - Antioxidant, antifungal, hepatoprotective and wound healing.⁴²

DISCUSSION

A scrutiny through these *Chakshushya dravyas* reveals that most of them are predominantly *Madhura rasa dravyas*. *Katu rasa dravyas* are seldom told as *Chakshushya*. In *Sushruta Samhita*, *Sutra Sthana*, *Madhura rasa* is explained as an attribute to *Chakshushya* property. *Dravyas* like *Draksha*, *Dadima*, *Shali*, *Shatavari*, *Sita*, *Jeevanti*, *Yava*, *Madhu*, *Ghrta* etc. are *Madhura rasa*. *Tikta rasa* and *Kashaya rasa* is not told as *Chakshushya*, but many *Chakshushya dravyas* are *Tikta* and *Kashaya rasa* predominant, like *Shatavari* and *Lodhra* (*Kashaya rasa dravya*) which are told to be *Chakshushya*. We can find *Madhura* as *Anurasa* in these *Dravyas*. *Saindhava* is *Lavana rasa dravya* and best among salts. It also possesses *Madhura* as *Anurasa*. Many *Chakshushya dravyas* are best among its own *varga*. *Draksha* is considered as best among *Phala varga*. *Jeevanti* is best among *Shakha varga*. Likewise, *Saindhava* is the best among *Lavana varga*. Majority of *Chakshushya dravyas* possess *Rasayana*, *Brimhana*, or *Vrishya* properties. *Triphala* and *Draksha* are considered as *Rasayana*. *Sita*, *Shali*, and *Saindhava* are *Vrishya*. *Shatavari*, *Ghrta*, *Shali*, are both *Brimhana* and *Vrishya*. *Triphala* is predominantly used in *Drishtigata rogas*. *Ksheerasarpi* is used in *Pittaja abhishyanda*. *Ghrta* is used in *Anyatovata*, *Vataparyaya*, *Shushkakshipaka*, *Shleshmaja abhishyanda*, *Shleshma adhimandha*, *Rakta abhishyanda*, *Pitta abhishyanda* and *Drishtigata Roga* like *Vataja* and *Kaphaja Timira*.

Ghrta is extensively used in many of the ophthalmic conditions like *Anyatovata*, *Vataparyaya*, *Shushkakshipaka*, *Shleshmaja abhishyanda*, *Shleshma adhimandha*, *Rakta abhishyanda*, *Sirotpata Drishtigata rogas* like *Pittaja timira*, *Kaphaja timira* etc. We can see that predominantly *Ghrta* is used in *Vataja*, *Vatapittaja* and *Raktaja* conditions. *Madhu* is used in *Rakta abhishyanda*, *Sirotpata*, *Pittavidagdha*, *Kaphavidagdha*, *Drishti*, *Kaphaja timira*, *Kukunaka*, and *Pitta abhishyanda*. Usage of *Madhu* is more found in *Pittakaphaja* conditions. *Prapaundarika* is used in *Shleshma abhishyanda*, while *Yava* is advised as food in *Drishtigata rogas* and as a medicine in *Shleshma abhishyanda*. *Shatavari* is used in *Drishtigata Roga*. *Mudga* is used in *Aklinna vartma* and *Savranashukla*. Usage of *Saindhava* is specified in *Vata abhishyanda*, *Shushkakshipaka*, *Shleshma abhishyanda*, *Rakta abhishyanda*, *Siraharsha*, *Netrapaka* and *Drishtigata roga*. *Jeevanti* is used in *Drishtigata rogas*. *Patola* is used in *Pishtaka*, *Timira*. *Sita* is used in *Arjuna*, *Savranashukla* and *Pittaja timira*. *Shali* is used in *Pittaja abhishyanda* while *Dadima* is advised in *Rakta abhishyanda* and *Draksha* in *Pitta abhishyanda*.

The chemical constituents found in these *dravyas* also adds on to the effect. The contents like catechin which is an antioxidant helps to protect the delicate tissues of eyes from the effect of glaucoma, riboflavin reduces oxidative stress in eyes and prevent cataract, ascorbic acid reduce chances of developing cataract and slows down ARMD, alanine reduces ocular hypertension.

Table 2: Clinical utility of *Chakshushya dravyas* mentioned in *Sushruta Samhita*

Dravya	Vyadhi / Prakarana	Formulation	Mode of application
Triphala,	Vataja abhishanda ⁴³	Ghrita	Paana
	Timira ⁴⁴	Ghrita, kashaya	Paana
Ksheerasarpi	Pittaja abhishyanda ⁴⁵	Ghrita	Nasya
Madhu	Rakta abhishyanda ⁴⁶	Kalka	Anjana
	Sirotpata ⁴⁷	Kalka	Anjana
	Pittavidaghdha Drishti ⁴⁸	Kalka	Anjana
	Timira ⁴⁹	Kalka	Anjana
Ghrita	Anyatovata, Vatapariyaya ⁵⁰	Samskruta ghrita	Poorvabhakta paana
	Shushkakshipaka ⁵¹	Samskruta ghrita	Anjana
	Raktabhishyanda ⁵²	Samskruta ghrita	Pralepa
	Pittabhishyanda ⁵³	Samskruta ghrita	Uttamamatra paana
	Sirotpata ⁵⁴	Samskruta ghrita	Anjana
	Paatika timira ⁵⁵	Samskruta ghrita	Paana
	Vataja timira ⁵⁶	Samskruta ghrita	Anjana
Prapaundarika	Kaphaja abhishanda ⁵⁸	Kalka	Anjana
	Vataja abhishyanda ⁵⁹	Ksheerapaka	Seka, ashchyotana
Saindhava	Shushkakshipaka ⁶⁰	Kalka	Anjana
	Pishtaka ⁶¹	Kalka	Anjana
	Raktabhishanda ⁶²	Kalka	Anjana
	Netra paka ⁶³	Rasakriya	Anjana
	Pittavidaghdha Drishti ⁶⁴ Kaphavidaghdha Drishti ⁶⁵	Kalka	Anjana
Yava	Balasagradhita ⁶⁶	Kshara	Anjana
	Timira ⁶⁷	Odana	Ahara
Shatavari	Timira ⁶⁸	Payasa	Ahara
Mudga	Savranashukla ⁶⁹	Kalka	Anjana
	Aklinna varthma ⁷⁰	Kalka	Anjana
	Timira ⁷¹	Not specified	Ahara
Jeevanti	Timira ⁷²	Not specified	Ahara
Patola	Pishtaka ⁷³	Kalka	Anjana
	Timira ⁷⁴	Not specified	Ahara
Draksha	Pittaja abhishyanda ⁷⁵	Ghrita	Tarpana

The term *Chakshushya* is a general term for all *Dravyas* which benefits the eyes. But all of them don't contribute directly to improving vision. Only few drugs are directly contributing to improving vision. The *dravyas* which are told in *Drishtigata roga pratishedha adhyaya* are beneficial in improving vision by either having *Shothahara* (reducing inflammation), *Sroto Shodhaka* (clearing the channels), *Lekhana* (scraping) or *Rakta Prasadaka* properties. For example, *Mudga* and *Patola* are told in *Timira*. But *Prapaundarika*, *Dadima*, *Lodhra* are told to be beneficial in inflammatory conditions like *Abhishyanda*. In *Drishtigata roga pratishedha adhyaya* we can also observe that there is mentioning of *Prashasta ahara* which implies that *dravyas* that directly bestows vision.

CONCLUSION

Chakshushya dravyas are predominantly *Madhura rasa dravyas*. All *Chakshushya dravyas* are not directly contributing to vision. '*Rasayana- Chakshushya*' *dravyas* are *dravyas* directly improving vision. Other *dravyas* are pacifying the underlying diseases of eye and preventing secondary manifestations. Chemical constituents of majority of *Chakshushya dravyas* like riboflavin, ascorbic acid, catechin etc improves eyesight and prevent the advancement of various clinical conditions of the eye.

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