

# Review of herbal drugs for management of Uveitis

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**Abstract:** Shalakya Tantra, a part of Astanga ayurveda deals with ocular diseases. Although modern science has developed to a great extent but still several diseases like Uveitis are puzzle to the science. Uveitis is one of eye diseases, which still doesn't has promising treatment with lesser or no side effects. So this problem makes an opportunity to other systems of medicine to make a significant contribution in treatment. Here, we are just going through some indigenous herbal drugs which can be used in Uveitis.

**IndexTerms - Shalakya Tantra, Ayurveda, Uveitis**

## Introduction:

Instead of being one of the most developed sciences, modern ophthalmology is facing several critical problems. Some of the diseases of eye are very difficult to be cured with less side effects of treatments. So the world needs not only the modern but the integrated system of medicines for better treatment and with less or no side effects. Netra roga vigyan, the major field of shalakya tantra, among astanga ayurveda is one of the developed life science. Principles of treatment of eye diseases and indigenous herbal drugs as described in ayurveda, can prove a boon to many disorders of eye like uveitis, retinitis pigmentosa, armd, diabetic retinopathy including other disorders of retina, glaucoma, optic atrophy which are the darker areas of ophthalmology. So for the sake of Humanity, the doctors are being flexible and trying to search newer effective drugs from other ancient systems of medicine. Ayurvedic drugs have greatest contribution in this regard.

Innumerable herbs are present in form of different formulations in ayurvedic texts, which are beneficial to such of disease. As we are focusing over the Uveitis, notorious in nature, not very common but very annoying to the ophthalmologists and to the patients too, because of its recurrent nature, lifelong treatment and poor outcomes. Uses of steroids and immunomodulators makes the patients annoyed and immune insufficient so that the patients become prone to several other ophthalmological and systemic problems. Indigenous drugs can create a difference in treatment of such disease. Several good individual and combinations of drugs are described in old literature which can be effective as per their activities on body found in other experiments. But its still a matter of research that how effective these drugs are for uveitis.

Uveitis has very complex symptomatology that can be correlated to the few eye diseases mentioned in our texts, like Pittaja and raktaja abhishyanda and adhimantha complex, sashopha and ashopha akshipaka. All these have more or less symptoms like that of Uveitis. Here we are focusing particularly on the drug and discussing the major properties of drug that are responsible for the cure of disease. Ayurvedic approach for treatment of Uveitis w.s.r to Pittaja and Raktaja adhimantha complex, is to treat symptoms and prevent recovery of this disease. Pittaja<sup>1</sup> and Raktaja<sup>2</sup> adhimantha are Sarvagata Netraroga and are characterized by Bandhujiva pratikash, Sparshakshama, Rakhtasrava, Nistoda, Rakhtam agni arishthavat Krishna bhag, Deeptam Rakhtaparyantam, updeha which are very similar to symptoms of uveitis<sup>34</sup> i.e. severe pain, watering, burning sensation, circumcilliary congestion, swelling of lids etc. So the herbs, which are pitta shamak and rakta shodhaka should be useful in this disease. Some of the drugs are as following:

### 1. Haritaki<sup>5</sup>

**Botanical name-** Terminalia chebula

**Family :** Combretaceae

**Description:** It is a deciduous tree, younger stems glabrescent and woody. These are 10 – 20 cm long, sub – opposite, simple; exstipulate; petiolate; laminae broadly elliptic to elliptic oblong, rarely ovate, the bases obtuse, the margins entire, the tips acute, glabrescent. Resin and a purgative principle of the nature of anthraquinone and sennoside are also present. These are single, rough, ellipsoid, 1.0-2.0 cm by 0.2 -0.7 cm and without ridges.

**Chemical constituents:** Total phyto-constituents of Terminalia chebula are hydrolysable tannins (which may vary from 20-50%) and they are responsible for pharmacological activities. Flavonol glycosides, tri-terpenoids, and coumarin conjugated compounds with gallic acid called as chebulin, and also phenolic compounds are isolated. Total eight compounds viz. Gallic acid, methyl gallate, ethyl gallate, chebulagic acid, tetra-O-galloyl-β-D-glucose, and ellagic acid, chebulinic acid and penta-O galloyl-β-D-glucose from Terminalia chebula were isolated.

### Properties :

Rasa	-	Pancha rasa except Lavana ,kassaya dominant
Guna	-	Laghu ,Ruksha

Virya	-	Ushna
Vipaka	-	Madhura
Prabhava	-	Tridoshahara

**Pharmacotherapeutic properties:** Shothahara, Vedana-sthapana, Vrana-shodhana, Vrana-ropana

**Pharmacological actions<sup>6</sup>:** Terminalia chebula extract (TCE) have been found to possess pleiotropic effects; due to which the herbal drug has been provided in number of therapeutic uses. Various pleiotropic effects such as anti-oxidant, anti-diabetic, Reno protective, hepato-protective, anticancer, anti-anaphylactic, anti-inflammatory, immune modulator and pro-kinetic have been found to be associated with the plant.

## II. VBHITAKI<sup>7</sup>:

**Botanical name-** Terminalia belerica

**Family :** Combretaceae

**Description:** It is a large deciduous tree with a buttressed trunk, a thick brownish gray bark with shallow longitudinal fissures, attaining a height of 20 - 30 meters. The leaves are crowded around the ends of the branches, alternately arranged, margins entire, elliptic to ellipticobovate, rounded tip or sub acute, midrib prominent, pubescent when young and becoming glabrous with maturity. The flowers are pale greenish yellow with an offensive odor, borne in axillary spikes longer than the petioles but shorter than leaves. The fruits are ovoid grey drupes, obscurely 5- angled, narrowed into a very short stalk.

**Chemical constituents:** Glucoside (bellericanin), Gallo-tannic acid, Coloring matter, resins and a greenish yellow oil. Ellagic acid, gallic acid, lignans (termilignan and thannilignan), 7- hydroxy 3'4' (methylenedioxy) flavone and anolignanB. Tannins, ellagic acid, ethyl gallate, galloyl glucose and chebulagic acid, phyllembin,  $\beta$ -sitosterol, mannitol, glucose, fructose and rhamnose.

**Properties :**

Rasa	:	Kasaya
Guna	:	Ruksha ,Laghu
Virya	:	Usna
Vipaka	:	Madhura
Prabhava	-	Tridoshahara

**Pharmacotherapeutic properties:** Shothahara, Vedanasthapana, Raktastambhana

**Pharmacological actions<sup>8</sup>:** Terminalia bellerica has been shown to possess multifarious medicinal properties such as analgesic activity, antibiofilm activity, anticancer activity, antidepressant activity, antidiabetic activity, antidiarrhoeal activity, anti-ulcer activity, immunomodulatory activity, anti-spasmodic and bronchodilatory activity, antifertility activity, antihypertensive activity, antifungal, antimicrobial activity, anti-inflammatory activity, antioxidant activity.

## III. AMALAKI<sup>9</sup>:

**Botanical name-** Emblica officinalis

**Family :** Euphorbeaceae

**Description:** A small to medium sized deciduous tree, 8-18 meters height with thinlight grey bark exfoliating in small thin irregular flakes, leaves are simple, subsessile, closely set along the branchlets, light green having the appearance of pinnate leaves; flowers are greenish yellow, in axillary fascicles, unisexual, males numerous on short slender pedicels, females few, subsessile, ovary 3-celled; fruits globose, fleshy, pale yellow with six obscure vertical furrows enclosing six trigonous seeds in 2-seeded 3 crustaceous cocci.

**Chemical constituents:**

Hydrolysable Tannins like Emblicanin A and B, Punigluconin, Pedunculagin, Chebulinic acid (Ellagitannin), Chebulagic acid etc, Alkaloids like Phyllantine, Phyllembin, Phyllantidine etc, Phenolic compounds, Amino acids, Carbohydrates, Vitamins like Ascorbic acid, Flavonoids -Quercetin, Kaempferol and Organic acids like Citric acid.

**Properties :**

Rasa	:	Amalaki consists of five rasa except lavana rasa
Guna	:	Laghu, Ruksha and Sheeta in character.
Virya	:	Sheeta
Vipaka	:	madhura

**Pharmacotherapeutic properties:** Daha-prashamana, Chakshusya

**Pharmacological actions<sup>10</sup>:** *Emblica officinalis* is reported to possess bioactive compounds like tannins, flavonoids, saponins, terpenoids, ascorbic acids and many other compounds which are confirmed to have diverse pharmacological activities like antimicrobial, antioxidant, anti-inflammatory, radio-protective, hepatoprotective, antitissuive, immunomodulatory, hypolipemic and many other activities. This medicinal plant is also reported to have anticancer, anti HIV-reverse transcriptase, antidiabetic, antidepressant, anti-ulcerogenic, wound healing activities and so forth.

## IV. PATOLA<sup>11</sup>:

**Botanical name:** Trichosanthes dioica / Trichosanthes cucumerina

**Family:** Cucurbitaceae

**Description:** The plant is a perennial, dioecious, and grows as a vine. Vines are pencil thick in size with dark green cordate, ovate, oblong, not lobed, rigid, leaves. Roots are tuberous with long tap root system. Flowers are tubular white with 16–19 days initiation to anthesis time for pistillate flowers and 10–14 days for staminate flowers. Stigma remains viable for approximately 14 hours and 40–70% of flowers set fruit. Based on shape, size, and striation, fruits can be grouped into four categories:

- Long, dark green with white stripes, 10–13 cm long
- Thick, dark green with very pale green stripes, 10–16 cm long
- Roundish, dark green with white stripe, 5–8 cm long

- Tapering, green and striped, 5–8 cm long

**Chemical Constituents:** The various chemical constituents present in *T. dioica* are Vitamin A, Vitamin C, Tannins, Saponins, alkaloids, mixture of noval peptides, proteins, tetra & pentacyclic triterpenes. The seed extract of *T. dioica* contain 7-oxidihydrokaro undiol-3-benzoate as the most predominant component in the highly polar fraction of the non saponifiable lipid. Two main phytosterols present in -ethyl cholest-7- $\alpha$ T. *dioica* are namely 24 -ethyl cholest-7-enol. Seeds  $\beta$ enol and 24 of *T. dioica* also contain lectin. Roots contain an amorphous saponin, hentriacontans, a phytosterol & a non-nitrogenous bitter principle.

**Properties:**

Rasa	:	Tikta , Katu
Guna	:	Laghu , Rooksha
Vipaka	:	Katu
Veerya	:	Ushna
Prabhava	:	Tridosha shamak.

**Pharmacotherapeutic properties:** Vedana- sthapana, Vrana shodhana & ropana

**Pharmacological actions**<sup>12</sup>: different parts of plant are proven to possess Antidiabetic activity Hepatoprotective activity, Antiinflammatory activity, Antifungal activity, Antibacterial activity, Antioxidant activity, Wound healing activity and immunomodulatory activity.

**V. VASA**<sup>13</sup>:

**Botanical name** : *Adhatoda vasika*

**Family** : Acathaceae

**Description**

<i>Origin</i>	4000 feet height
<i>Tree</i>	4-5 feet long
<i>Flowering season</i>	February
<i>Used part</i>	Leaf, flower

**Chemical constituent:** Vasicine ( leaves ) , Vasicinone ( leaves ) , Essential oils , Vasakin ( alcoholic extract ) , Bromhexin ( synthetic derivative )

**Properties** :

<i>Rasa</i>	Tikta, Kashaya
<i>Guna</i>	Ruksha, Laghu
<i>Virya</i>	Shita
<i>Vipaka</i>	Katu

Because of Laghu ruksha, Tikta kashaya it is kapha shamak and Shita and tikta it is pitta shamak.

**Pharmacotherapeutic properties:** Shothahara, Vedanasthapana, Jantughna, Kusthaghna

**Pharmacological action**<sup>14</sup>: Vasaka plant possesses various activities like antifungal, antiviral, hepatoprotective, antitussive, antibacterial, anti-inflammatory and antiulcer activity, thrombolytic, radiomodulation & immunomodulatory action, antitubercular, antioxidant activity.

**VI. NIMBA**<sup>15</sup>:

**Botanical name** : *Azadiracta indica*

**Family** : Meliaceae

**Description:** Neem tree belongs to the family Meliaceae which is found in abundance in tropical and semitropical regions like India, Bangladesh, Pakistan, and Nepal. It is a fast-growing tree with 20–23 m tall and trunk is straight and has a diameter around 4-5 ft. The leaves are compound, imparipinnate, with each comprising 5–15 leaflets. Its fruits are green drupes which turn golden yellow on ripening in the months of June–August.

**Chemical constituents:** The most important active constituent is azadirachtin and the others are nimbolinin, nimbin, nimbidin, nimbidol, sodium nimbinat, gedunin, salannin, and quercetin. Leaves contain ingredients such as nimbin, nimbanene, 6-desacetylnimbinene, nimbandiol, nimbolide, ascorbic acid, n-hexacosanol and amino acid, 7-desacetyl-7-benzoylazadiradione, 7-desacetyl-7-benzoylgedunin, 17-hydroxyazadiradione, nimbiol and Quercetin. seeds hold valuable constituents including gedunin and azadirachtin.

**Properties** :

<i>Rasa</i>	Tikta, Kashaya
<i>Guna</i>	Laghu
<i>Virya</i>	Shita
<i>Vipaka</i>	Katu
<i>Prabhav</i>	PittaKapha shamaka

**Pharmacotherapeutic properties:** Jantughna, Vrana pachana, Vrana-shodhana, Daha-prashamana, Kusthaghna, Vednasthapana

**Pharmacological actions**<sup>16</sup>: antibacterial, antifungal, and anti-inflammatory, anti-arthritis, antipyretic, hypoglycemic, anti-gastric ulcer, analgesic activities and immunomodulatory effects are found in various parts of Nimba.

**VII. TULSI**<sup>17</sup>:

**Botanical name** : *Ocimum sanctum*

**Family** : Labiatae

**Description:** Tulsi grows wild in the tropics and warm regions. The plant is distributed and cultivated throughout India. It is an erect, much branched, fragrant and erected plant attaining a height of about 30-60 cm when mature. Its aromatic leaves are simple, opposite,



elliptic, oblong, obtuse or acute with entire or subserrate or dentate margins, growing up to 5 cm long. The Tulsi flowers are small, purplish in elongate racemes in close whorls. The fruits are small and the seeds are reddish-yellow in colour. The plant is bitter and acrid.

**Chemical constituents:** The leaves of OS contain 0.7% volatile oil comprising about 71% eugenol and 20% methyl eugenol. The oil also contains carvacrol and sesquiterpene hydrocarbon caryophyllene. Fresh leaves and stem of OS extract yielded some phenolic compounds (antioxidants) such as cirsilineol, circimaritin, isothymusin, apigenin and rosameric acid, and appreciable quantities of eugenol. Two flavonoids, viz., orientin and vicenin from aqueous leaf extract of OS have been isolated. Ursolic acid, apigenin, luteolin, apigenin-7-O-glucuronide, luteolin-7-O-glucuronide, orientin and molludistin have also been isolated from the leaf extract. OS also contains a number of sesquiterpenes and monoterpenes viz., bornyl acetate, -pinenes, camphene,  $\beta$ - and  $\alpha$ -elemene, neral,  $\beta$ -sitosterol  $\beta$ campesterol, cholesterol, stigmasterol etc.

**Properties :**

*Rasa* Katu, Tikta,  
*Guna* Laghu, Ruksha  
*Virya* Ushna  
*Vipaka* Katu

**Pharmacotherapeutic properties:** Jantughna, Vedanahara, Shothahara, Twag doshahara, Shirovirechana

**Pharmacological actions<sup>18</sup>:** antibacterial, antifungal, and anti-inflammatory, anti-arthritic, antipyretic, hypoglycemic, antigastric ulcer, analgesic activities and immunomodulatory effects are found in various parts of Tulsi

**VIII. GUGGULU<sup>19</sup>:**

**Description:** Guggulu is an oleogum resin (oleoresin) that exudes spontaneously as a result of injury from the bark of Commiphora mukul, belongs to the family Burseraceae.

**Chemical constituents:** Chemical study of guggulu revealed that it is a complex mixture of steroids, diterpenoids, triterpenes, aliphatic esters, alcohols, carbohydrates, amino acids, cholesterol, guggulsterol, flavanoid and variety of inorganic compounds.

**Properties :**

*Rasa* Tikta, Katu  
*Guna* Laghu, Ruksha, Tikshna, Sukshma, Sara  
*Virya* Ushna  
*Vipaka* Katu

**Pharmacotherapeutic properties:** Shothahara, Vedanasthapana, Vrana shodhana & ropana, Jantughna

**Pharmacological actions<sup>20</sup>:** Guggulu has been proven to have hypocholesterolemic activity, thyroid-stimulant. It increases number of leucocytes in the blood and stimulates phagocytosis. It also possess anti-arthritic, anti-inflammatory, osteoarthritic activity, antiseptic, antibacterial and antifungal activity, anti-diabetic, used in nervous and cardiovascular diseases. Guggulu also contains activity like demulcent, liver tonic, antispasmodic, anti-suppurative, anthelmintic, muscle spasms, hypertension etc. In a recent study, C. mukul and guggulsterone also found to be effective antioxidant.

**Conclusion:** The treasury of ayurveda is filled up with various drugs as described in ancient scholarly texts. These herbs can be used for so many ailments like Uveitis which have no cure or difficultly cured in modern science. The role of above mentioned drugs have been already mentioned in the texts only we have to follow their instructions on side by side the various scientific studies are also going on that can prove their efficacy in modern terms too.

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