

AYURVEDIC MANAGEMENT OF PRIMARY OPEN ANGLE GLAUCOMA: A CASE STUDY

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Article Info: Received: 12 August 2026, Revised: 02 September 2026, Accepted: 22 September 2026

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DOI: <https://doi.org/10.5281/zenodo.23066376>



Citation:

¹*Dr. Rohit Kumar Jain, ²Dr. Hemlata Jain, ³Dr. Nikita Baghel. (2026). Ayurvedic Management Of Primary Open Angle Glaucoma: A Case Study. International Journal of Clinical and Pharmaceutical Innovations, 1(7), 101-104.

ABSTRACT

Glaucoma is a neurodegenerative disease in ophthalmology, which has a characteristic optic neuropathy along with raised Intraocular Pressure (IOP). Glaucoma results in the irreversible loss of vision and field defects due to the death of retinal ganglion cells. Despite the considerable drug development activity in glaucoma, there is a high failure rate in researches that focused on developing neuroprotective treatment options. A 62-year-old male patient came in the outpatient department with complaints of the progressive painful loss of vision in both eyes with a mild headache and redness along with raised IOP. It was a diagnosed case of primary open-angle glaucoma. Considering the symptomatology and after examination, the Ayurveda treatment was planned. He had given Deepana, Pachana, Sadyovirechana, Tarpana, Vidalak, Nasya, Jaloukacharana, Anjana, along with Shirodhara. There was improvement in visual acuity along with significant reduction of intra-ocular pressure. Visual field analysis showed improvement in retinal sensitivity. Thus it can be concluded that Ayurvedic approach is helpful in giving a complimentary treatment protocol for primary open angle glaucoma.

KEYWORDS: Glaucoma, Primary Open-Angle Glaucoma, Intraocular Pressure, Ayurvedic Treatment.

INTRODUCTION

Glaucoma is an eye condition that damages the optic nerve. This damage can lead to vision loss or blindness. The optic nerve sends visual information from eye to the brain and is vital for good vision. Damage to the optic nerve is often related to high intra ocular pressure in the eye. Glaucoma can happen at any age but is more common in older adults. Many forms of glaucoma have no warning signs. The effect is so gradual that may not notice a change in vision until the condition is in its later stages. The disease glaucoma can be more or less correlated with Adhimantha in Ayurveda which are having similarities in terms of their signs and symptoms. Adhimantha is an important eye disease mentioned in

Sarvagata Netrarogas by Acharya Sushruta and Vagbhat. Ayurvedic Classics mentioned Adhimantha which means Adhi (Excessive) and Manth (Churning); in which excessive pain, churning type of pain is present in the eyes. The associated symptoms are headache (Shirahshula), pain in eyes (Netra Utpatyate), Foreign body sensation (Panshupuran), Lacrimation (Strava), redness of eye (Rakt Raji) and reduced visual acuity.^[1]

Glaucoma is the second-most common cause of irreversible blindness. The global prevalence of glaucoma among people 40–80 years old is predicted to rise rapidly from 76 million in 2020 to 111.8 million in 2040 due to the aging of the population.^[2] Because of the

asymptomatic nature, the diagnosis is delayed, and most of the time patients may develop further stages, where the damaged nerve fibers and cannot be reversed.^[3] Nearly 95 million people around the world have glaucoma, about 10 million are blind in at least one eye, and many more suffer visual impairment and impact on activities of daily living due to glaucoma. At present, no treatments restore vision lost from glaucoma, so case detection and effective treatment are essential.^[4] The treatment modalities in modern are meiotic, prostaglandin analogues, carbonic anhydrase, hyperosmotic agents are used in Glaucoma, but none of them are totally effective in curing the disease.^[5] So, in present scenario, study on glaucoma, its line of treatment according to Ayurveda is essential. This article describes how glaucoma can be managed with ayurveda.

3 years back patient aged 63 year/male was diagnosed as having high intraocular pressure during routine medical check-up and he was advised to instil the eye drop Combigan one drop twice daily in each eyes. He had continued the medication for 8 months until he experienced giddiness and after that he has stopped the same without medical advice. For the last 2 years he observed gradual diminution of peripheral aspect of visual field in both eyes without any noticeable pain in eyes. For the last 1 year he has observed heaviness of head and both eyes and watering, itching and foreign body in both eyes. He made recurrent spectacle correction but there was no improvement noted in the vision. He approached Regional Ayurveda Research Institute for Life Style related Disorders, Trivandrum, Kerala for better management.

History of past illness

1. Type II Diabetes Mellitus (6yr)
2. Hypertension (6yrs)

EXAMINATION

Eye examination	Right	Left
Eyelid	Normal	Normal
Conjunctiva	Circumciliary congestion	Circumciliary congestion
Sclera	Normal	Normal
Cornea	Transparent	Transparent
Iris	Normal	Neovascularization
Pupil	Round Regular Reactive	Semidilated, fix, not reacting
Lens	Pseudophakia	Ns 2

3. Dyslipidaemia (6yrs)

Medicine history

1. Wosulin inj (28U-0-28U)
2. Tab. Glykind one tab once daily
3. Tab. Olmesartan one tab once daily
4. Tab. Atorvin one tab once daily

General examination

1. Pallor: Absent
2. Icterus: Absent
3. Cyanosis: Absent
4. Clubbing: Absent

HISTORY

History of presenting complaints

A 62-year-old male patient presented to the outpatient department with a chief complaint of the progressive painful loss of vision in both eyes accompanied by mild headache and redness, that had been persisting for over 6 months. The patient also reported experiencing raised IOP in both eyes, along with discomfort and dryness. He mentioned reduced visual acuity, particularly in the left eye more than the right eye. he had been taking various type of medication, but there was no significant reduction in IOP. he also complained of continuous pain and redness in eyes. His sleep was disturbed, bowel constipated, appetite remained normal. He was diabetic and hypertensive. There was no known family history of glaucoma. He had not undergone any surgical procedures and did not have any known drug allergies or addictions.

History of past illness

1. Type II Diabetes Mellitus (6yr)
2. Hypertension (6yrs)
3. Dyslipidaemia (1yrs)

Date	Treatment given	Observation	IOP
13/02/25	1. Trifala, mulethi, punarnava churna vidalak (daily) 2. jatamanshi kwath and dashmool kwath and Saraswat churna kwath shirodhara 10 days. Punarnavadikwath 30ml bd, gokshuradi guggul 2bd, haritaki churna 5gm at night, Chandra Prabha vati 2bd, nishakatkadi kwath 20 ml bd, syp livom 5g 10ml bd.	DV -Rt-6/18 p Lt -pl positive Ph- Rt-6/18 p Lt-pl positive	Rt-21 mmhg Lt-27 mmhg
06/03/25	madhuyasthighrita tarpan 1000 matra 2 dinantar, and vidalak with Trifala, mulethi, punarnava churna daily. Punarnavadikwath 20ml bd, guggul 2bd, haritaki	DV with PG -Rt-6/9 p Lt-pl positive	RT-14 mmhg Lt -18 mmhg

	churna 5gm at night, Chandra Prabha vati 2bd, syp diabomrita 20 ml bd, syp livom 5g 10ml bd.		
22/03/25	madhuyasthigrita tarpan 1000 matra 2 dinantar, and vidalak with Trifala, mulethi, punarnava churna (2 days continue and 1 day gap). Punarnavadikwath 20ml bd, haritaki churna 5gm at night, syp diabomrita 20 ml bd, syp livom 5g 10ml bd.	DV with PG –Rt-6/9 Lt -pl positive	Rt-14 mmhg Lt -20 mmhg

RESULT

we have observed the patient has showed improvement in following aspect-

- Vision improved as 6/9 in right eye as per Snellen's distant vision chart
- Intraocular pressure reduced in both eyes.
- Pain and redness reduced
- No heaviness of head and both eyes
- No watering from both eyes
- No foreign body sensation in both eyes.

DISCUSSION

The present case was managed by adopting the treatment principles of **Adhimantha**, considering the **Sarvadehika Doṣa–Duṣya Duṣṭi** along with the underlying etiological factors. The therapeutic approach was primarily aimed at pacifying the vitiated **Pitta** and **Vāta Doṣa**, while restoring the equilibrium of **Rasa** and **Rakta Dhātu**, which play a pivotal role in maintaining the physiological integrity of the ocular tissues.

According to Ayurvedic principles, the etiological factors (**Hetu**) initiate a cascade of pathological events (**Samprāpti**) that ultimately manifest as the characteristic signs and symptoms of the disease. In **Nija Samprāpti**, the pathological process originates in the **Koṣṭha** due to **Abhyantara Hetu**, following which the vitiated Doṣas disseminate through the **Srotas** and localize in the ocular structures. This progression is understood to occur through successive stages, namely **Śirobhishtyanda**, **Netrābhishtyanda**, and **Sthāna Saṁśraya**, eventually culminating in clinically evident ocular disorders.

When the stage of **Abhishtyanda** is neglected or inadequately managed, the aggravated Doṣas penetrate deeper into the ocular tissues, giving rise to **Adhimantha**, a severe **Sarvagata Netra Vyādhi** characterized by progressive structural damage and a significant risk of irreversible visual impairment. From this perspective, the pathogenesis of **Primary Open-Angle Glaucoma (POAG)** closely resembles the Ayurvedic concept of **Adhimantha**, wherein chronic **Doṣic** vitiation, particularly of **Vāta** and **Pitta**, leads to progressive degeneration of the optic apparatus and gradual loss of vision. Therefore, the treatment strategy in this case focused not merely on symptomatic relief but on interrupting the underlying **Samprāpti**, correcting systemic **Doṣa** imbalance, nourishing the affected **Dhātus**, and preserving visual function through a holistic Ayurvedic approach.

The treatment was initiated as **Chakshushya**, **Rasayana** and **mutral Dravya** along with **Deepana-Pachana**. **Rasayana** increases the essence of the **Rasadi dhatu** and provides nutrition to the body tissue. These medicines enhance the immunity and capability of sense organs and are having immunomodulatory action. **Chakshushya** medicines are those, which are beneficial to the eye as a sense organ and have a special affinity toward retinal and ocular tissues. This group of medicines rejuvenates the ocular tissue structurally and functionally by maintaining the homeostasis of the eye.

INTERNAL MEDICATION

1. TRIFALA- A powerful antioxidant and rashayan herb, reduce oxidative stress in retinal ganglion cells. It is a potential herbal medicine having a rich source of flavonoids and Vitamin C along with antioxidant activity. In the pathophysiology of glaucoma, **N-Methyl-D-Aspartate** plays an important role in RGC death. **Trifala** increases the activity of antioxidant enzymes such as catalase, superoxide dismutase, and glutathione peroxidase, thereby reducing the oxidative stress of RGC and helping to cease the RGC death. **Trifala** also possesses anti-inflammatory activity and reduces pain in glaucomatous conditions.

2. CHANDRAPRABHA VATI- is a herbomineral formulation that alleviates **Pitta** and **Vata**. It is **Rasayana**, **Balya** and **Mutrala**. It nourishes the major components of the body and is reported to have a good scavenger of superoxide radicals, thereby having a free radical scavenging activity. This might help to understand its possible role in glaucoma like eye diseases. **Chandraprabha Vati** have synergetic action. It has anti-inflammatory, antibacterial, antiseptic, astringent, diuretic, healing and cooling properties. It detoxicate genitourinary tract and restores its normal functions.^[6]

3. PUNARNAVA- balances the **Tri doshas** and helps to pacify the **Vata** and **Kapha doshas** and effectively removes the **ama doshas**, which are toxins from the body. It's a great diuretic which helps drain additional fluid from the eyes. This releases pressure inside the eye and protects optic nerve from damage. Regular use of **Punarnava** can also prevent fluid buildup and support eye health. **Punarnava**, showcasing strong hypoglycemic activity, can readily decrease the blood glucose level, thus minimizing the risk of glaucoma.

4. HARITAKI-For the purpose of **Koshtha shuddhi** **haritaki churna** was administered with a hot water daily at night, have mild purgative properties. The **Virechana**

karma opens the small channels and thus clears the obstruction of dosha in the body. Thus, the morbid doshas are eliminated from Rakta and normalize the activity of Vata and Pitta. Aqueous humor is a derivative of Rasa and Rakta dhatu. Virechana karma evacuates the fluid from the Rasa and Rakta dhatu, leading to a decrease in fluid volume. This can be the possible reason behind the reduction of IOP. During the treatment, the patient was advised to have Mudga yusha instead of a meal if he feels heaviness and discomfort in the stomach.^[7]

5. GOKSHURADI GUGGULU AND PUNARNAVASHTAKA KWATHA- These possess diuretic and anti-inflammatory properties, helping to manage fluid balance and reduce IOP.

6. AMALAKI CHURNA: Rich in antioxidants like Vitamin C, it is used for its neuroprotective effects.

EXTERNAL PROCEDURE

1. TARPANA - Ocular procedures involving retaining medicated ghee to deliver medicine topically, nourish the eye, and clear channels.

2. VIDALAK- Vidalaka is an external application procedure, useful in acute eye conditions or in Amavastha of the Netra Rogas. Vidalaka is applied over the skin. It rapidly penetrates the intact skin and lowered the IOP.

3. NASYA: Administration of medicated nasal drops to clear channels in the head region and balance doshas.

4. RAKTAMOKSHANA (Bloodletting): Used in cases of Pitta and Rakta vitiation to cleanse the circulatory system.

5. SHIRODHARA- Stress can exacerbate glaucoma. Ayurveda emphasizes stress reduction with shirodhara, which may indirectly benefit eye health.

Ayurvedic approaches are often used as a complementary treatment alongside modern medicine to provide comprehensive care and improve patient outcomes. The goal is to halt the progression of vision loss and preserve existing vision. The progressive neurodegeneration of the optic nerve causes irreversible vision loss in patients with glaucoma. The raised IOP is an invariable factor behind the process of neurodegeneration. Currently, there is a lack of treatment for retinal neurodegenerative diseases. Most of the treatments are focused on reduction in IOP by reducing the aqueous humor formation, increasing uveoscleral outflow, or by surgical means such as trabeculectomy, insertion of a valve, and stent. However, these modes of treatment are effective to a certain extent but unable to prevent the vision loss. Thus, there is a need to define and derive some alternative treatment protocols for the management of glaucoma. Ayurveda is richly diversified with herbomineral combinations, which are effective in such conditions. Ayurveda also considers the systemic origin of eye

diseases. The treatment plan in this patient was considered for neuroprotection and lowering of IOP with Chakshushya, mutral and Rasayana Ayurvedic formulations, which showed subjective as well as objective effects in this case. A pragmatic approach is necessary for each and every case of glaucoma considering the variability in disease progression.

FOLLOW-UP AND OUTCOME

The patient was followed up every 15 days and was evaluated clinically for changes in signs and symptoms along with changes in IOP till 3 month. On performing the confrontation test on every follow-up, improvement in his visual acuity than that of the first visit was noticed. He was maintained on the same treatment regimen for three months. No visual disturbances nor any after complications were reported by the patient during this period. IOP was checked on every 15 days, and the details are shown in table.

CONCLUSION

This evidence-based case report suggests a newer approach for a patient with POAG with Ayurvedic oral medications and local application. During the treatment, the patient showed improvement in visual acuity and peripheral vision without any adverse effects. The combination of Chakshushya, mutral Dravya and Rasayana medicines with mild purgation maintained the IOP and thereby protected the progression of vision loss. Although encouraging results were noticed in the present case, these results need to be substantiated with a long-duration clinical trial with an increased number of subjects.

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