

ROLE OF AYURVEDA IN MANAGING RETINITIS PIGMENTOSA**Dr. Shrawan Kumar Sahu^{1*}, Dr. Ashok Kumar Sinha²**¹Research Officer (Ayurveda), Central Ayurveda Research Institute, New Delhi.²Research Officer (Ayurveda), Regional Ayurveda Research Institute, Patna, Bihar.

Article Received on 05 Sept. 2026,
Article Revised on 25 Sept. 2026,
Article Published on 01 Oct. 2026,

<https://doi.org/10.5281/zenodo.23118460>

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How to cite this Article: Dr. Shrawan Kumar Sahu^{1*}, Dr. Ashok Kumar Sinha². (2026). Role of Ayurveda in Managing Retinitis Pigmentosa. World Journal of Pharmaceutical Research, 15(19), 998–1007.

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ABSTRACT

Retinitis pigmentosa represents a heterogeneous group of inherited retinal disorders marked by progressive degeneration of photoreceptors and/or retinal pigment epithelium and resulting in progressive visual loss. It initiates with nyctalopia and/or delayed dark adaptation and ends with legal or complete blindness by developing “tunnel vision” i.e. loss of peripheral vision. Depending on the geographic location, the prevalence of Retinitis pigmentosa in patients ranges from 1:9000 to 1:750. Regions with high rates of consanguinity invites higher incidences of RP. No satisfactory treatment of Retinitis pigmentosa is available today, although the therapeutic advancements in the forms of gene therapy, cell replacement, pharmacotherapy, neurotrophic factors, and retinal prosthesis certainly assure the emergence of potential therapies which

may bring about halting or slowing down of photoreceptor degeneration, or even restoring visual function up to some extent. But these are having their own limitations. Ayurveda, the most ancient Indian healing system, has the potential to deal with this intricate diasthesis in an effective manner. This article delineates how the adoption of Ayurvedic medicines and procedures is capable of bringing about great improvement in quality of life of patients with Retinitis pigmentosa along with restoring their vision.

KEYWORDS: Ayurveda, Doshandha, Kapha Vidagda Drishti, Kriyakalpa Nakulandhya, Retinitis pigmentosa.

INTRODUCTION

First introduced by F.C. Donders, a Dutch physician in 1857, after following a few previous reports of the disorder including potentially the first fundus drawing by Van Trigt in 1853(through an ophthalmoscope), Retinitis pigmentosa (RP) is a misnomer and refers to a hereditary condition without inflammation.^[1,2,3,4] The disorder brings about a visual impairment, which overpoweringly impacts not only the quality of life of the sufferers but also that of their caretakers.^[5] While non-syndromic RP is mostly limited to the eye, RP occurring as part of a syndrome as exemplified by Usher syndrome, Bardet-Biedl syndrome etc. goes by the name of syndromic (or systemic) RP.^[6]

Depending on the geographic location, the prevalence of RP in patients ranges from 1:9000 to 1:750, whereas in the Western population it has been estimated to be around 1 in 3000–5000 individuals.^[1,2,7] Regions with high rates of consanguinity invite higher incidences of RP.^[7,8]

Retinitis pigmentosa (RP) represents a heterogeneous group of inherited retinal disorders marked by progressive degeneration of photoreceptors and/or retinal pigment epithelium (RPE) and resulting in progressive visual loss i.e. loss of night vision in adolescence, peripheral vision in young adulthood and central vision in later life. In other words, RP initiates with nyctalopia and/or delayed dark adaptation and ends with legal or complete blindness by developing “tunnel vision” (loss of peripheral vision).

Noticable fundus changes depicting the progression of RP primarily encompasses a triad of attenuation of retinal blood vessels, optic disk pallor and the dispersion of bone spicule-like pigments.^[9] RP can be inherited in an autosomal dominant, autosomal recessive or X-linked manner.^[10]

Additional visual disturbances may be resulted in owing to an increased risk of other ocular complications of RP like cystoid macular edema, cataract etc.^[11,12] Significant visual impairment impacting a patient’s physical and mental health often occurs at an early age when RP gets combined with a patient’s physical and mental health.^[13]

Although RP was not considered a treatable disease entity, the therapeutic advancements in the forms of gene therapy, cell replacement, pharmacotherapy, neurotrophic factors, and retinal prosthesis certainly assure the emergence of potential therapies which may bring about

halting or slowing down of photoreceptor degeneration, or even restoring visual function up to some extent.^[14] Rapidly developing genomic medicine is not suitable or applicable for every patient with RP. For its effective application, identification of the causative gene and photoreceptor viability are not an easy task. Personalized therapy tailored to one's genetic condition and disease stage is very much needed. Availability of a therapy which may be universally applied regardless of the underlying genetic cause is yet to be achieved.^[15]

AYURVEDIC PERSPECTIVE

Owing to the differences in the conceptualization of a disease, the exact correlation of RP in Ayurveda cannot be ascertained. Progressive loss of vision, which starts with nyctalopia, is central to the diagnosis of RP. Hence, those diseases delineated in Ayurveda wherein night blindness is the main symptom, should be taken into account for the consideration towards seeking equivalence with RP. *Kapha Vidagda Drishti*, *Ushna Vidhagdha Drishti*, *Nakulandhya*, *Hriswajadya* and *Doshandha* are such diseases. These all are Drishtigata Rogas and most of the Ayurvedic scholars suppose Drishti as the structural and functional unit of eye covering the visual pathway, on the basis of its size, shape, composition, appearance, and nature described by the ancient Ayurvedic pioneers. While Ayurvedic texts consider *Shleshmavidagdha Drishti* as *Sadhya Vyadhi* (curable), *Nakulandhya* is assumed to be *Asadhya Vyadhi* (non-curable). Taking these facts into consideration; RP needs to be managed meticulously.

In *kapha vidagda Drishti*, the predominance of *Kapha Dosha* results into nyctalopia. In daytime due to pacification of *Kapha Dosha* by sunlight, the affected person is able to visualise the objects before itself. Acharya Vagbhat has explained the disorder in the name of *Doshandh*.^[16] In *Ushna Vidhagdha Drishti*, sudden immersion of one exhausted with the heat of the sun or fire in cold water brings about blurring/diminution of vision in daytime and inability to see in night owing to upward travel of that very heat in association with deranged *Vata*, *Pitta*, *Kapha* and *Rakta Dosha*.^[17] *Nakulandhya* is an eye disorder wherein the pupil of sufferer resembles variegated colors like that of a mongoose and perceives objects in mixed/different shapes in daytime and unable to see in night.^[18] *Hraswajadya* is mentioned as a type of night blindness according to Acharya Vaidya, others assume it to be a day blindness disease.

Keeping the gravity of the disease into the consideration, its management should incorporate three tier holistic approaches comprising of Symptomatic improvement, Progression arrest

and Rejuvenation of damaged or degenerated nerve cells. The dedicated study of Ayurvedic text/classics suggests that the required holistic approach may be carried out in following way

1. Preparatory phase: Before starting the treatment, Deepana–Pachana with medicines like Ajamodadi Churna (3-5 gm. BD with lukewarm water) may be given for three days.

2. Treatment phase: The patient may be given three months treatment in following phased manner.

a. Procedures: For the first 5-7 days, **Snehana** (therapeutic oleation) should be carried out and be followed by Sarwaang Abhyanga Svedana (whole body sudation process) for 2 days. It may be followed by **Virechana** (Therapeutic purgation) with medicine like Trivritta. Afterwards, **Nasya** (Trans nasal medication) with Mahatriphala Ghrita/Anu Taila and **Tarpana** (Medicated lipid administration) with Mahatiktatak /Patoladya/Mahatriphala Ghrita for 6 days. Subsequently, Shirodhara with Ksheerabala Taila and Matravasti (therapeutic enema) with Ksheerabala/ Madhuyashtyadi Taila should be executed for next 5 days.

b. Palliative medicines(Shamana Aushadhiyaan)

- i. Mahatriphaladi/Jeevantiyadi Ghrita 1 tsp with milk twice a day before food
- ii. (Muktashukti bhasm 125 mg + Saptamrit Lauh 500 mg + Amalaka rasayan 3 gm) with Lukewarm water twice a day after food.

The role of the above mentioned treatment modalities have also been substantiated by significant case/clinical studies carried out at different Institutes/centres of Ayurveda. Some of these are presented below.

1. A case study is noticable wherein a 23 years old diagnosed case of Atypical Retinitis Pigmentosa with gradual diminished vision in evening hours, delayed dark adaption of 5-6 minutes and pain in eyes, was benefitted by the adoption of Ayurvedic medicines and therapeutic procedures at SJIIM hospital for 17 days.^[19] He was working in a welding shop and had a history of consanguineous marriage. Here, the following management resulted into improvement of visual acuity from 6/60 to 6/24 and decrease in duration of dark adaptation from 5-6 minutes to 1-2 minutes along with great enhancement in quality of life of the sufferer.

- 3-days Shiro Udvartana with Rasna choorna for 10-15 minutes followed by Shiro Abhyanga (15 minutes) with Ksheerabala Taila.
- 7 days- Nasya with Gandha Taila followed by Tarpana with Patoladi Ghrita.
- 7 days-Taila-Dhara with Ksheerbala Taila.

2. Another interesting case is that of a 28 years old male patient with progressive diminution of vision, deteriorating night vision and deranged colour vision leading to difficulty in performing his daily activities, who got improvement in his distant vision in right eye from 6/60 to 6/24 and that in left eye from 6/36 to 6/24. His visual acuity for near objects was enhanced from N36 to N12 in right eye and that from N24p to N12p in left eye.^[20] Here following treatment protocol was adopted.

There were carried out Deepana and Pachana with Chitrakadi vati for 3 days, Snehapana with Mahatriphaladhya ghrita for 3 days, Sarvanga Abhyanga with Dhanwantaram taila followed by Vaspa Sweda for 3 days, Virechana karma with Trivrit lehya on 10th day followed by proper Samsarjana karma. These were followed by Nasyakarma for 7 days with Bringaraja taila and Padabhyanga with Dhanwantaram taila, Tarpana with Mahatriphaladhya ghrita for 5 days and Kanadi Putapaka for 5 days. From 44th to 91st day Anjana karma with Kanadi anjana followed by Netra prakshalana with Triphala kashaya was carried out in the morning. Triphala churna with Honey and Ghee at night (after meal) and Amalaki Payasa - 30ml twice a day (before meal) were given internally during the course.

3. A case study is mention worthy wherein adoption of a 22-days protocol resulted into significant visual improvement (from 6/60 to 6/9).^[21] It comprised of internal administration of Jeevantyadhi Ghrita (Snehapana), whole body massage with sesame oil (Sarvanga Abhyanga), therapeutic purgation (Virechana karma) and oral administration of Avipattikar Choorna in the first stage of seven days. Trans-nasal administration (Marsha Nasya) of Anu Taila, rhythmic pouring of ksheerabala taila over forehead (Shirodhara), collyrium application on eyelids (Anjana) and eye wash with clear water (Netra Prakshalana) were performed during the eight days of the second stage. The last seven days of third stage witnessed the procedures of Tarpana (Medicated lipid administration) with Jeevanthyadhi Ghrita. The patient, after undergoing these procedures, was instructed to take Pathyaaksadhatryadi Kashaya and Triphala Choorna as oral medications for six months.

4. A small study was conducted on five patients selected from the OPD/IPD of Dept of Shalaky Tantra of Sri Kalabyraveshwara Swamy Ayurvedic Medical College, Hospital & Research centre, Vijayanagar to evaluate the efficacy of Ayurvedic therapies and medicines. Here 5 selected patients were made to undergo Snehana, Swedana for three days, followed by Virechana one day as Sodhana karma. It was followed by Chakshushya kasayavasti for three days. After that, patients were administered Jeevantyadi Ghrita/ Mahatriphaladya Ghrita

(30days) orally. Later on they were prescribed vision friendly Shamana ausaodhisas like Ksheerabala taila, Mahamasha taila, Saptamruta loha, Tapyadi loha, Vasaguduchyadi kashaya for 15 to 30 days. After that Kriyakalpa procedure namely Anjana, Tarpana and Putapaka were carried out. After a gap of one week, Moordha taila was introduced as Shirodhara for each patient for 7days. After that, the patients were kept under follow up for a month. On statistical analysis; significant improvement was witnessed in blurred vision, night blindness, photophobia, field vision and spots/floaters, the symptoms of Retinitis pigmentosa.^[22]

5. This case with unremarkable family history and wearing spectacles since 10 years for myopia was diagnosed as a case of Retinitis Pigmentosa at Ambedkar Hospital, New Delhi. No improvement with the conventional treatment being provided there and continuously deteriorating vision impelled him to report at Regional Ayurveda Research Institute for Metabolic Disorders (RARIMD) Bengaluru, for alternative therapy. The Ayurvedic procedures and medicines given at the Ayurvedic Institute resulted into improvement of his visual acuity from 6/60P to 6/18P in right eye and that from 6/36P to 6/18 in left eye, along with a far better quality of life.^[23]

The adopted protocol included 4 sittings of 2 weeks therapy with an interval of 4 weeks. Each sitting was preceded by an oral intake of Avipattikara churna for 1 week to ensure mild purgation (Nitya Virechan) in order to create an environment suitable for the therapy to be introduced. The therapy comprised of Nasya with Ksheerabala taila, Tarpana with Triphala Ghrita, Snehana putapaka, Seka with Triphala and Yashti, Bidalaka with Triphala and Yashti and Anjana with Vinayaka anjana (Anubhuta Yoga). Triphala churna with honey and ghee in unequal amount and 1 Ashwagandha tablet at night (after meal) were the Pharmacological Intervention during the course.

6. A case study of Patanjali Ayurveda hospital, Haridwar deserves its inclusion in this series wherein a non-hypertensive and non-diabetic male patient of RP aged 34 years witnessed an improvement in his visual acuity from HMCF in the left eye to 6/18P (with pin 6/12P) and from 3/60 to 5/60 in right eye and became capable of observing his daily routine works independently which was not possible before the treatment taken.^[24] Here, oral medicine given to the patient was a combination of Muktaashukti bhasm 125 mg, Saptamrit lauh 250 mg, Amalaka rasayan 3 gm, Giloy sat 125 mg and Yashad bhasm 50 mg with Lukewarm water twice a day before food. Mahatriphaladi ghrit and Patoladi ghrit 1-1 tsp with milk twice

a day after food were also given to him. Shankh prakshalan (with Lukewarm water and saindhav lavana), Netra parisheka (with Triphala, Daruharidra, Manjishtha, Giloy, Tulsi), Nasya with Anu taila, Tarpana (with Patoladi ghrita) and Putapaka with Panchtikta Dravyas) in classical way were the carried out therapeutic procedures.

7. A 38-year-old male with retinitis pigmentosa elicited improvement in his vision as depicted by visual acuity and visual field analysis after undergoing two courses of in-patient Ayurvedic management comprising of bio-purification therapy (Panchakarma), local eye therapies (Kriyakalpa) and oral Ayurvedic medicines.^[25] The intervention was adopted on the line of treatment of Timira and Kacha as per the eminent scholar of his time viz. Acharya Vagbhata who propounded the remedial measures like therapeutic oleation (Snehana), blood-letting (Asra-visravana), therapeutic purgation (Reka), transnasal medication (Nasya), collyrium (Anjana), retention of oil over scalp (Murdha-basti), therapeutic enema (Basti Kriya), medicated lipid administration (Tarpana), ointment (Lepa) and ocular therapy by streaming (Seka).

DISCUSSION

The utility of vision in one's personal life and that too of a patient of RP, cannot be overemphasized. The vision, which is crucial for discerning and interacting with the world, on its impairment compromises the quality of life of sufferers. Ayurvedic medicines and procedures are effective options for preserving and restoring vision in patients with ophthalmic disorders. They have got interesting mode of action behind their potency.

Grita pana, Sneha virechana/Sneha basti brings about improvement in the acuteness of Alochaka Pitta. The Medicated Ghrita brings about pacification of Vata and Pitta Doshas by its Sheeta (cooling), Snigdha (unctuous), and Brimhana (nourishing) properties. In view of contemporary pharmacological perspective, owing to the lipophilic nature of *Ghrita used in Tarpana procedure*, active components of the medicine gets access efficiently to cross the corneal barrier. As compared to standard liquid drops, suspended particles of medicated *Ghrita* stay in contact with the ocular surface for longer duration and achieve a high therapeutic concentration and result into visual improvement.

The medicinal compounds in Anjana are inherently capable of crossing the blood-aqueous, blood-vitreous, and blood-retinal barriers, allowing them to effectively target and treat

disorders in the posterior segment of the eye. This capability enhances the therapeutic potential of Anjana, making it a vital treatment option.

With these procedures it is possible to arrest the degeneration process. The active ingredients of the medicines provide nourishment to retina thus restoring the vision. The intake of eye-friendly food and drinks for longer duration may lead to improvement in vision.

CONCLUSION

The current healing system is not in a position to address many degenerative, metabolic and other types of disease, owing to which a number of masses are facing unbearable miseries in their lives. The whole world is necessitating complementary and alternative medicine/therapy for the sake of diminution of their agony and acquisition of better quality of life. Many studies have been carried out for managing RP, a disease of this kind and significant benefit has been found to be achieved adopting Ayurveda. Robust multicentric RCT like studies of ample sample size should be carried out for establishing a promising remedy from complementary and alternative medicine/therapy for RP like disorders.

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