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An Ayurvedic Protocol to Manage Retinitis Pigmentosa - A Case Report

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ABSTRACT

Introduction: Retinitis pigmentosa (RP) is a clinically and genetically heterogeneous group of inherited retinal disorders that almost invariably occur in both eyes and often result in blindness in the middle-age and advanced age groups. According to Ayurveda, the cardinal symptoms of night blindness and diminished vision seen in RP may be correlated with *Kapha-Vidagdha Drishtti*, a *Drishitigata Roga* or disease of vision.

Case: A 38-year-old male presenting with blurring of vision since 2017 and diminished night vision since childhood is presented here.

Intervention: The patient underwent two courses of in-patient *Ayurvedic* management consisting of *Panchakarma* (bio-purification) therapy, oral medicines, and external therapies for the eyes and head.

Results: Assessment showed improvement in both unaided distant visual acuity (DVA) and visual field analysis.

Conclusion: The main aim of management was to preserve and give a better quality of vision for the patient. The results indicate the potential of *Ayurvedic* treatments to manage and maintain vision in retinitis pigmentosa.

Key Words: Case report, Retinitis pigmentosa, *Kriyakalpa*, *Panchakarma therapy*

INTRODUCTION

Retinitis pigmentosa is a genetically pre-determined retinal dystrophy characterized by progressive degeneration of rod photoreceptors, cone photoreceptors, and retinal pigment epithelium in that order. Inflammation, implied by the term is not a part of its pathophysiology. The prevalence of RP amounts to one case in every 4000 persons.¹ A search on RP in PubMed amounted to 7000 references and was characterized by desirability for both experimental and clinical research.² Occurrence may be either isolated or either autosomal dominant, autosomal recessive, or X-linked by inheritance. Apart from genetic predisposition, there are no other known risk factors.³ RP's primary symptom is night blindness, with advanced cases presenting with a ring-like scotoma in the visual field that gradually progresses to "tunnel" vision. As there is no definite cure for RP in allopathic medicine, alternative management options may be explored.

METHODOLOGY

The efficacy of an *Ayurvedic* treatment protocol to manage a case of RP was assessed in this report. It was prepared according to the Case Report (CARE) guidelines to ensure transparency and effectiveness in reporting⁴. Although institutional ethical clearance was not required for this study, written informed consent was obtained from the patient before detailing his case.

CASE PRESENTATION

A 38-year-old non-diabetic and non-hypertensive male presented to the OPD of Sreedhareeyam Ayurvedic Eye Hospital and Research Center, with blurring of vision since 2017 and difficulty in night vision since childhood. He was born to non-consanguineous parents and his mother had a full-term, normal delivery (FTND) with no postpartum complications.

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He started to gradually develop difficulty in night vision around the age of 3, for which he was prescribed vitamin A tablets. He developed pain in distant vision around the age of 7, for which he was diagnosed with myopia and prescribed corrective spectacles. The glass power progressively increased over time, for which he was prescribed cylindrical lenses in 2014. In 2018, he was diagnosed with retinitis pigmentosa after a complete ophthalmic and genetic examination. He was advised to protect his eyes from ultraviolet radiation, avoid smoking, and take plenty of fruits, vegetables, and foods rich in omega-3 fatty acids. Genetic counseling was also recommended. He had his first consultation at Sreedhareeyam Eye Hospital in September 2018.

His sister also suffered from night blindness. His bowel, appetite, and micturition were normal and his sleep was sound. He occasionally consumes alcohol. Review of systems and vital signs were normal. He weighed 90kg and was 172cm tall. His *Dasavidha Pariksha* (ten parameters of examination)⁵ findings are listed in **Table 1**.

Unaided distant visual acuity (DVA) was LogMAR 0.602 in both eyes (OU). Aided DVA was LogMAR 0.477 in the right eye (OD) and LogMAR 0.301 in the left eye (OS), which was improvable to LogMAR 0.301 OU with a cylindrical lens of 1 diopter OD and 1.25 diopter OS. Near vision was N6 OU. Anterior segment examination was normal OU. Direct and consensual pupillary reflexes were normal OU.

Posterior segment examination by direct ophthalmoscopy showed a slightly cloudy foveal reflex OU, pale optic disc OU, normal macula OU, and some bony corpuscles in the peripheral retina OU. Visual field analysis OU showed marked constriction in the peripheral visual fields (**Figures 1 and 2**). The findings were suggestive of RP.

The intervention adopted reflected the treatment for *Timira* and *Kacha* according to *Vagbhata*, viz., administrations of *Snehana* (therapeutic oleation), *Asra-visravana* (blood-letting), *Reka* (purgation), *Nasya* (medication through the nasal route), *Anjana* (collyrium), *Murdha-basti* (retention of oil over the head region), *Basti Kriya* (therapeutic enema), *Tarpana* (lubrication of the eye), *Lepa* (anointment), and *Seka* (ocular therapy by streaming).⁶

The patient's first round of treatment was from 25/09/2018 - 15/10/2018, and his second round of treatment was from 12/08/2019 - 22/08/2019. Oral medicines such as *Kvatha* (decoction), *Ghrta* (clarified butter), and tablets (**Table 2**); *Panchakarma* therapies such as *Snehapana* (therapeutic oleation), *Svedana* (sudation therapy), *Virecana* (therapeutic purgation), and *Marsa Nasya* (high dose medication through the nose) (**Table 3**); and external therapies for the eye (*Netra Kriyakalpa*) and head such as *Netradhara* (ocular therapy by streaming), *Hasta Pada Abhyanga* (therapeutic massage over the hands and feet), *Pratimarsa Nasya* (low-dose medi-

cation through the nasal route), *Anjana*, *Sirodhara* (therapeutic streaming over the head), *Ascyotana* (eye drops), *Siro-veshtanam* (application of paste over the head on a Cora cloth), *Bandhana* (bandaging), *Mukha Dhanya Pinda Sveda* (facial sudation by applying poultice made from sour grains), *Drishti Prasadana* (massage over the eyelids using ghee), and *Netra Tarpana* (lubrication of the eye) (**Table 4**) were prescribed during the two courses of treatment.

During *Snehapana*, the patient was advised to observe strict rest and abstain from consuming oily and fried foods. A total of 5 *Vegas* (urges) were noted between 6:30am and 11:30am during *Virecana*, after which, *Peya* (thin gruel of rice) was administered as *Samsarjana Krama* (post-therapy dietetic regimen for revival).

All medicines, except Septillin tablet, were manufactured at Sreedhareeyam Farmherbs India, Pvt. Ltd., the hospital's GMP-certified drug manufacturing unit. Septillin Tablet was manufactured by The Himalaya Company, based in Bengaluru, Karnataka, India.

RESULT

DVA was LogMAR 0.477 OU, which was improvable to LogMAR 0.176 OU with cylindrical lenses of -1.25D OD and -0.5D OS after the first course of treatment on October 15th, 2018. NVA was maintained at N6 OU. The same visual acuity was maintained at admission to, and at discharge after, the second course of treatment. Refraction at discharge after the second course of treatment demonstrated LogMAR 0 OU with cylinder lenses of -1.25D OD and -0.5D OS. Fundus examination by ophthalmoscopy showed no further progression in the attenuated blood vessels and bony corpuscles. Visual field analysis showed markedly wider peripheral visual fields OU (**Figures 3 and 4**).

A timeline of events for this case is provided in **Table 5**.

DISCUSSION

Ayurveda explains that genetic diseases, which are a result of abnormalities in the *Bija* (sperm or ovum) brought about by improper activities of the parents and divine providence, increase all the *Doshas* and the resultant condition, as well as all hereditary conditions, is *Asadhya* (incurable).¹² Hereditary defects in an organ happen when it is vitiated due to the part of the *Bija* responsible for the formation of that organ becoming vitiated itself.¹³ In this patient, a genetic defect resulting in retinitis pigmentosa occurred despite a normal pregnancy and delivery course.

Kapha Vidagdha Drishti occurs when the person perceives objects as white due to the *Doshas* lodging in the first and

second *Patalas* (layers of the eyeball). When the *Doshas* advance to the 3rd *Patala*, the person sees during the day and not at night because of *Kapha Dosh*a.¹⁴

Snehapana was done as a *Samana Cikitsa* (pacifying treatment) for this patient, with 30mL of ghee administered each day so as to not increase *Kapha* further. *Avipattikara Yoga* was selected for *Virecana* as it is apt for all *Pitta (Dosha)* responsible for regulating body temperature and metabolic activities) conditions. The ingredients of *Jivantiyadi Taila* pacified *Vata* and *Pitta*. *Saptamrta Lauha* is *Tridosha Prasamana* (pacifies the *Tridosha*), *Rakta Prasadana* (enhancing the quality of blood tissue), *Rasayana* (rejuvenative), and *Cakshushya (Dravya or intervention good for eyesight)*. *Asvagandha* is *Kapha-Vata Samana* (pacifies *Kapha* and *Vata*), *Balya* (strength, stamina, and immunity promoter), *Rakta Prasadana*, and *Rasayana*. These medicines enhanced blood quality, relieved *Tridosha*, and prolonged the retinal dystrophy by revitalizing the tissue. *Bharngyadi Kvatha* is *Vata-Kapha Samana*, *Dipana*, and *Srotosodhana* (cleansing the structural or functional channels). *Dasamula Katutraya Kvatha* is *Vata-Kapha Samana*, *Dipana*, and *Lekhana* (therapeutic scraping). *Sudarsanam Tablet*, the tablet form of the original *Curna*, is *Tridosha Prasamana*, *Amapacana* (enhancing digestion). The combined effect of these three medicines helped to enhance digestion, reduce *Dosh*as, and make available essential nutrients by clearing the channels. Local external treatments enabled efficient absorption and transport of the medicines to the target tissue, the retina, by obviating the blood-aqueous, blood-vitreous, and blood-retinal barriers.

Siroveshtanam is a variant of *Sirolepa* in which the paste is applied to the head in a Cora cloth and tied in the following manner: One end is placed over the right ear, the cloth is wrapped over the forehead and towards the left ear, taken over the back of the head toward the occiput, and brought over the head towards the right ear. *Drishtiprasadanam* is a procedure in which lukewarm *Sneha* is taken and massaged over the forehead and eyelids while applying pressure to the forehead, inner and outer canthus, and the supraorbital notch. *Kasyapam Kvatha* and *Saptamrta Kvatha* are indicated in all *Netra Rogas* (eye diseases). *Timiranjana*, *Nakulanjana*, and *Nayanamrtam* are *Sita Virya* (potency of coldness) and *Ropana* (healing) by nature. *Sasanka Taila* is *Sita Virya* by nature, and pacifies *Pitta Dosha*. *Vinayakanjana* is *Ropana* and is indicated in all *Netra Roga*. *Jatavedha Ghrta* and *Ananta Ghrta* are excellent for *Netra Tarpana* (lubrication of the eye).

CONCLUSION

The main challenge, in this case, was maintenance of vision and prolonging the dystrophy. However, positive results were obtained in both fields after two courses of *Ayurvedic* treatment. Repeated courses of treatment may aid to at least

maintain vision and prolonging further progression of the disease. The results obtained in this case may be validated and analyzed by large-scale studies and trials.

Abbreviations:

RP: retinitis pigmentosa

DVA: distant visual acuity

NVA: near visual acuity

OD: oculus dexter

OS: oculus sinister

OU: oculus uterque

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Table 1: Dasavidha Pariksha

Parameter	Findings
Prakrti (somatic constitution)	Kapha-Vata
Vikrti (pathological factors)	Dosha (humor): Sannipata (three Doshas) Dushya: (tissues): Rasa (lymph)
Sara (essence of tissues)	Rakta (blood)
Samhanana (compactness)	Madhyama (medium)
Pramana (measurement)	Sama (equal)
Sattva (psyche)	Madhyama
Satmya (homologation)	Madhyama
Ahara Sakti (power of intake and digestion of food)	Pravara (optimum)
Vyayama Sakti (power of physical strength)	Madhyama
Vayah (age)	Madhyama

Table 2: Oral Medicines

Si. No.	Medicine	Dosage	Anupana	Time	Duration
1	Netraraksha Kvatha*	60mL	Warm water	Twice a day before food	25/09/2018 - 03/10/2018, 05/10/2018 - 15/10/2018 16/08/2019 - 26/08/2019
2	Saptamrta Lauha ⁷	1 tablet	Netraraksha Kvatha*	Twice a day before food	25/09/2018 - 03/10/2018, 05/10/2018 - 15/10/2018
3	Asvagandha Tablet	1 tablet	Warm water	Twice a day after food	25/09/2018 - 03/10/2018, 05/10/2018 - 15/10/2018
4	Saptamrta Kvatha*	60mL	Warm water	Twice a day before food	06/10/2018 - 15/10/2018
5	Bharngyadi Kvatha	60mL	Warm water	Twice a day before food	13/08/2019 - 15/08/2019
6	Dasamula Katutrayam Kvatha	60mL	Warm water	Twice a day before food	13/08/2019 - 15/08/2019
7	Sudarsanam Gutika ⁸	2 tablets	Warm water	Twice a day after food	13/08/2019 - 26/08/2019
8	Septillin Tablet [^]	1 tablet	Warm water	Twice a day after food	13/08/2019 - 26/08/2019

Table 3: Panchakarma Procedures

Treatment	Medicine	Procedure	Duration
Snehapana	Vainateya Ghrta*	30mL of ghee was administered at 6am in the morning on an empty stomach.	27/09/2018 - 02/10/2018
Svedana	Satapaka Taila*	A full-body massage was done using the oil. The patient was asked to take bath with hot water.	03/10/2018
Virecana	Trvrt Lehya ^o and Triphala Kvatha	20g of Lehya and 60mL of Kvatha were administered in the morning. The urges were recorded	04/10/2018
Marsa Nasya	Jivantyadi Taila*	Abhyanga was done with Kshirabala Taila. Then, 8 drops of Jivantyadi Taila were instilled into each nostril.	05/10/2018 - 07/10/2018 19/08/2019

Table 4: External Therapies

Therapy	Medicine	Procedure	Time	Duration
Netra Dhara ^o	Kasyapam Kvatha*	30mL of the decoction was poured over the eyes with the patient being asked to blink.	Morning and Afternoon	27/09/2018 - 03/10/2018, 05/10/2018 - 06/10/2018 12/08/2019 - 18/08/2019
Anjana ^o	Timiranjana* Nakulanjana* Nayanamrta*	1 drop of the medicine were instilled into the eye at the inner canthus, and the patient was asked to roll the eyes around while closed.	Morning and Afternoon	25/09/2018 - 03/10/2018 27/09/2018 - 06/10/2018 12/08/2019 - 18/08/2019 12/08/2019 - 18/08/2019
Hasta Pada Abhyanga	Dhanvantara Taila ¹⁰ Kshirabala Taila	30mL of oil was taken and slightly heated. This was then applied to the hands and feet and massaged.	Morning	26/09/2018 13/08/2019 - 16/08/2019
Sirodhara	Kshirabala Taila Sasanka Taila*	A thin stream of oil was poured through a coconut shell with a hole in the center over the patient's head.	Morning	27/09/2018 - 02/10/2018 17/08/2019 - 22/08/2019
Siroveshtanam ^o	Bala, Vidari, Kacchuradi Churna in Balasvagandhadi Taila	A paste was prepared from the ingredients and smeared over a Cora cloth. This was applied over the right ear, around the forehead, over the left ear, and over the occiput.	Morning	13/08/2019 - 15/08/2019
Mukha Dhanya Pinda Sveda		Lukewarm grains were made into a poultice and gently applied over the face.	Morning	20/08/2019 - 22/08/2019
Pratimarsa Nasya	Anutaila ^u	3 drops of lukewarm oil were instilled into each nostril after massage over the face.	Morning	27/09/2018 - 02/10/2018 16/08/2019 - 18/08/2019
Drshthiprasadana ^o	Kshirabala 101 Avartana Taila	5 drops of oil were taken and massage was done over the forehead, upper eyelid, and lower eyelid	Morning	17/08/2019 - 19/08/2019
Tarpana	Ananta Ghrta* and Jata-vedha Ghrta*	A circular fence was constructed around the orbits using Masha flour and water. The medicine, made lukewarm, was poured into the cavities. The patient was asked to blink frequently.	Afternoon	07/10/2018 - 15/10/2018 20/08/2019 - 26/08/2019
Ascyotana and Bandhana		One drop of medicine was instilled into the inner canthus. Afterward, Malati Pushpa was applied to the eyes and bandaging was done for one hour.	Morning	20/08/2019

*Patented medicines of Sreedhareeyam Ayurvedic Eye Hospital and Research Center

[^]Patented medicine of Himalaya Drug Company^oTreatment protocols of Sreedhareeyam Ayurvedic Eye Hospital and Research Center

Table 5: Timeline of Events

Date	Event
1983	The patient gradually develops night blindness, for which he is prescribed vitamin A tablets
1990	Develops difficulty in distant vision, is diagnosed with myopia, and is prescribed corrective glasses
2018	Diagnosed with retinitis pigmentosa
September 25 th , 2018	First consultation with Sreedhareeyam; advised inpatient management. Uncorrected DVA: LogMAR 0.602 OU Aided DVA: LogMAR 0.477 OD and LogMAR 0.301 OS Refraction: LogMAR 0.301 OU with a -1D cylinder OD and -1.25D cylinder OS. NVA: N6 OU Visual Fields: Constricted peripheral fields OU Oral medicines, viz., Netraraksha Kvatha*, Saptamrta Lauha, and Asvagandha Tablet are started. Anjana^ with Timiranjana* is started.
September 26 th , 2018	Hasta Pada Abhyanga with Dhanvantara Taila is done.
September 27 th , 2018	Snehapana with a fixed dose of 30mL of Vainateya Ghrta* is started Anjana^with Nakulanjana is started. Netra Dhara^with Kasyapam Kvatha is started. Pratimarsa Nasya with Anutaila is started. Sirodhara with Kshirabala Taila and Sasanka Taila* is started.
October 3 rd , 2018	Svedana is done by Sarvanga Abhyanga (full-body massage) with Satapaka Taila and hot-water bath. Anjana^ with Timiranjana*and Netra Dhara^ are stopped. Pratimarsa Nasya is stopped. Sirodhara is stopped. Oral medicines are stopped.
October 4 th , 2018	Virecana is induced with Triphala Kvatha and Trvrt Lehya; a total of 5 urges are recorded
October 5 th , 2018	Oral medicines are restarted. Netra Dhara^is restarted. Saptamrta Kvatha* is started.
October 6 th , 2018	Netra Dhara is stopped. Anjana with Nakulanjana* is stopped.
October 7 th , 2018	Tarpana with Ananta Ghrta* and Jatavedha Ghrta* is started.
October 15 th , 2018	All treatments are stopped. Patient is discharged with instructions for regular follow-up. Unaided DVA: 6/18 Snellen (LogMAR 0.477) OU Aided DVA: 6/9 OU Refraction: 6/6 OU with cylinder lenses of -1.25D OD and -0.5D OS. NVA: N6 OU.
August 13 th , 2019	Patient reports for the second course of treatment. Unaided DVA: LogMAR 0.477 OU Aided DVA: LogMAR 0.176 OU Refraction: LogMAR 0 OU with cylinder lenses of -1.25D OD and -0.5D OS. NVA: N6 OU Oral medicines, viz., Bharngyadi Kvatha, Dasamula Katutrayam Kvatha, Sudarsanam Gutika, and Septilin Tablet, are started. Netra Dhara^with Kasyapam Kvatha is started. Anjana^with Nakulanjana* and Nayanamrtam*are started. Hasta Pada Abhyanga with Kshirabala Taila is started. Siroveshtana^ with Bala, Vidari, and Kaccuradi Churna in Balasvagandhadi Taila is started.
August 15 th , 2019	Bharngyadi Kvatha and Dasamula Katutrayam Kvatha are stopped. Siroveshtana^is stopped.
August 16 th , 2019	Netraraksha Kvatha* is started. Pratimarsa Nasya is started. Hasta Pada Abhyanga is stopped.
August 17 th , 2019	Drishti Prasadana^ with Kshirabala 101 Avartana Taila is started.
August 18 th , 2019	Anjana^ and Pratimarsa Nasya are stopped.

Table 5: (Continued)

Date	Event
August 19 th , 2019	Drishti Prasadana is stopped.
August 20 th , 2019	Ascyotana with Ananta Ghrta* and Jatavedha Ghrta* is done, with Bandhana for 1 hour with jasmine flowers. Tarpana with Ananta Ghrta* and Jatavedha Ghrta* is started.
August 26 th , 2019	All treatments and oral medicines are stopped. Unaided DVA: 6/18 Snellen (LogMAR 0.477) OU Aided DVA: LogMAR 0.176 OU Refraction: LogMAR 0 OU with cylinder lenses of -1.25D OD and -0.5D OS. NVA: N6 OU Visual Fields: Widened peripheral fields OU

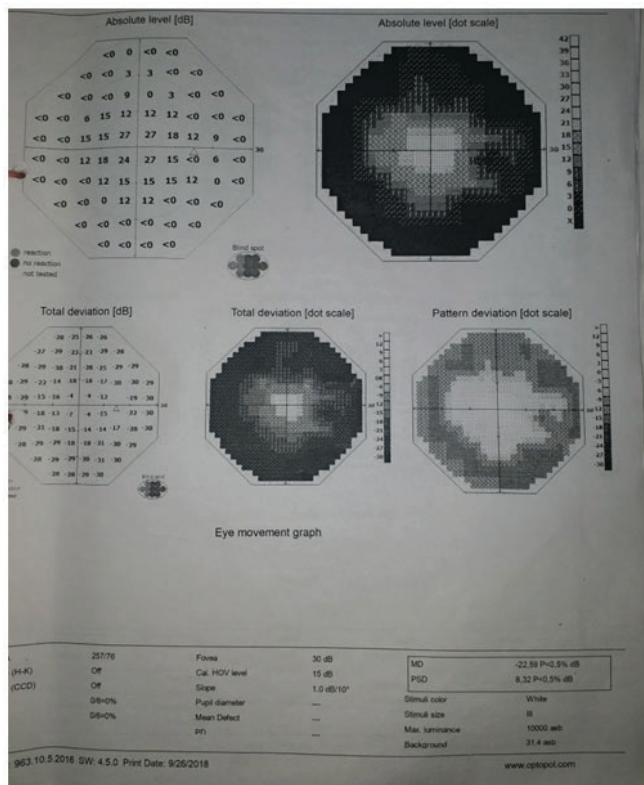


Figure 1: Visual field analysis OD at Admission before the First Course of Treatment.

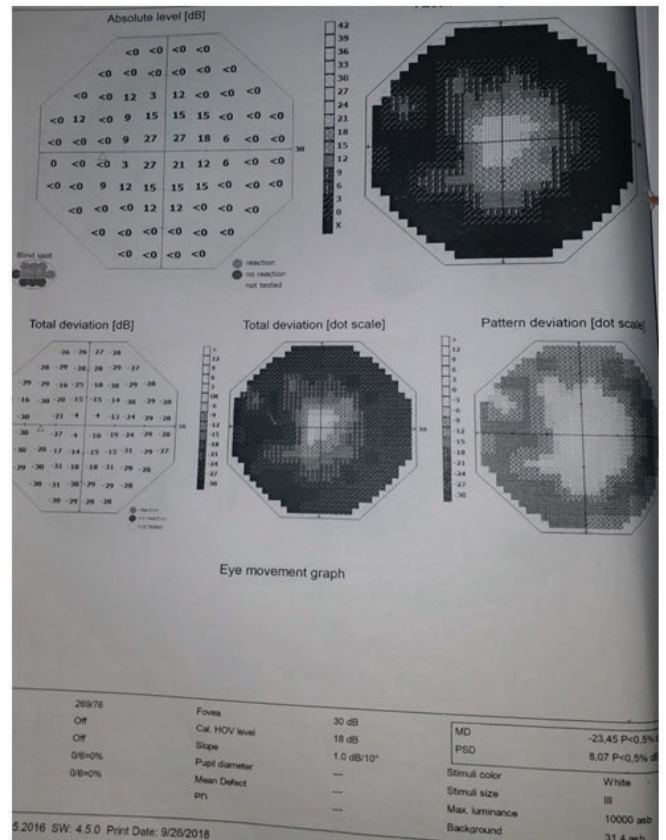


Figure 2: Visual field analysis OS at Admission before the First Course of Treatment.

