Int. J. Ayur. Pharma Research, 2014; 2(6): 48-53 **ISSN: 2322 - 0910**

International Journal of Ayurveda and Pharma Research

Research Article

AN INSIGHT TO RETINITIS PIGMENTOSA AND MANAGEMENT BY AYURVEDIC THERAPIES

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Received on: 28/09/2014 Revised on: 09/10/2014 Accepted on: 18/10/2014

ABSTRACT

Retinitis pigmentosa (RP) is a hereditary group of degenerative eye diseases caused by genetic mutations affecting retina that lead to severe vision loss and blindness. In Ayurveda, the conditions like *Kapha vidagdha drushti, Hraswajadya* and *Dhoomadarshi* which has night blindness as the cardinal feature can be simulated to different stages of RP. Certain authenticated therapies are explained in our ancient literature which are time tested such as *Tarpana*(Nourishing eye bath therapy), *Putapaka* (eye bath therapy), *Anjana* (Collyrium), *Nasya* (Processed liquid instillation through nostrils by drops or powders), *Sirodhara* (application of continuous stream of oil over the head), *Vasti* (Medicated enema) etc. through which considerable results are achieved. The drugs and procedures described in Ayurveda have probable mode of action in crossing the blood retinal barrier, a protective measure of cells surrounding the retina. The extent of benefit in alleviating the clinical features of RP happens possibly because of the phytonutrients present in the formulations applied through various procedures crossing the blood retinal barrier. To validate the management protocol explained in classics, a retrospective study was conducted on five patients selected from the OPD/IPD of Dept of Shalakya Tantra of Sri Kalabyraveshwaraswamy Ayurvedic Medical College, Hospital & Research centre, Vijayanagar(SKAMC,H & RC). The results assessed statistically proved significant in certain parameters indicating a beneficial effect in reducing the subjective symptoms of Retinitis pigmentosa.

KEYWORDS: Retinitis pigmentosa, Rod, Cone, *Kaphavidagdha drushti, Hraswa jadya, Dhoomadarshi, Ayurvedic* management.

INTRODUCTION

Retinitis pigmentosa (*RP*) is a diffuse retinal dystrophy predominantly affecting the rod system more than cones. [1] It occurs in 5/1000 persons of the world population. [2] At the beginning, there is degeneration of the rods and cones along with the pigment epithelium and migration of the pigment into the retina mainly around the blood vessels. Later on, the ganglion cells and their axons also degenerate and they are replaced by neuroglial tissue. The blood vessels become attenuated and the disc assumes a waxy yellow appearance and is often termed as 'consecutive optic atrophy'.[3] Many experiments have been conducted and still going on in the management to improve the vision in dim light and arrest the further progression, but promising result is yet to be found.

Visual symptoms of retinitis pigmentosa include night blindness, impaired dark adaptation and tubular vision. In most cases, patients show an early night blindness and loss of peripheral field of vision, but central vision is generally preserved until the late stages of the disease. The classic clinical triad of retinitis pigmentosa are (a) arteriolar attenuation (b) retinal bone spicule pigmentation and (c) waxy disc pallor. [4]

There may be other ocular and systemic associations also. The ocular associations are namely myopia, primary open angle glaucoma, microphthalmos, keratoconus, vitreous changes and subcapsular cataract. The systemic associations include obesity, mental deficiency, dwarfism, ataxia, deafness etc. [5]

The types of RP based on inheritance are autosomal recessive (16%), autosomal dominant (22%), X-linked (9%) and other are isolated (without any family history-common).[6] In general, the long term prognosis of retinitis pigmentosa is poor, with eventual loss of central vision due to direct involvement of the fovea.[7]

It usually appears in the childhood and progresses slowly, often resulting in blindness in advanced middle age. As per existing available data, no effective approach for prevention, stabilization or reversal is there for the majority of RP cases apart from daily administration of *Vitamin A*. [8]

In *Susruta Samhitha*, one of the oldest text books of *Ayurveda* has described seventysix *Netra* (eye) diseases[9] and their detailed treatment comprising of both medicinal and surgical methods. Among these, diseases like *Kaphavidagdha drushti, Hraswajadya* and *Dhoomadarshi*[10] which closely resemble RP in their symptamatology and different stages. There is a special mention of *Kriyakalpas* (Ocular therapeutics), designed to improve the visual functionalities and treating the diseases of eye. *Ayurveda* rely its treatment efficacy on the basis of *Tridosha* (roughly translated as three humors) and the drugs used in eye diseases are mainly *Chakshushya, Drishti prasadaka, Pitta rechaka* which helps to tackle the condition of RP and reduce the symptoms to a greater extent and these *Kriya kalpas* are based on *Dosha* afflicting and condition of the disease.

Aims & Objectives

- To compile various suitable therapies available in *Ayurveda* for retinitis pigmentosa.
- To evaluate the efficacy of suitable therapies for Retinitis pigmentosa.

Materials & Methods

A) Study design

Patients attending the OPD and IPD of PG Dept of *Shalakyatantra* of SKAMC H & RC Bangalore with history of clinical signs & symptoms of Retinitis pigmentosa (RP), were screened as per the inclusion & exclusion criteria and accordingly registered for this study. All the details about the disease conditions and various suitable therapies for Retinitis pigmentosa before and after the treatment were recorded in case proforma as per the protocol.

Diagnosis

- The diagnosis of the disease is done on both modern and *Ayurvedic* basis, from the symptoms and ocular examination.
- Routine blood investigations, fasting blood sugar, serum cholesterol and routine urine investigations were done to rule out any systemic diseases.

Medicaments Used

The medicaments used in managing the condition are *Mahatriphaladya ghrita, Jeevantyadi ghrita, Ksheerabala taila, Mahamasha taila, Saptamruta loha, Tapyadi loha, Vasaguduchyadi kashaya, Chakshushya kashaya vasti, Kanadi anjana- Kanadi putapaka and Avipattikara churna*

Purchased Medicines

- *Jeevantyadi ghrita, Mahatriphaladya ghrita, Avipattikara choorna* (Pentacare company)
- *Saptamruta loha, Tapyadi Loha* (Dhoodhpapeswar company)
- *Ksheerabala taila, Mahamasha taila & Vasaguduchyadi kasaya* (Arya Vaidyasala Kottakkal)

Prepared medicines

- Kanadi putapaka, Kanadi anjana are prepared in *Kriyakalpa* section of Dpt. of *Shalakyatantra* SKAMCH & RC, Bangalore.
- *Vasti dravya* is made ready in Panchakarma section of SKAMCH & RC, Bangalore.

Initially after the patient has been enrolled for study, they have to undergo *Snehana*, *Swedana* for three days, followed by V*irechana* one day as *Sodhana karma,* this is

followed by *Chakshushya kasaya vasti* for three days. After that, first three patients were administered by *Jeevantyadi ghrita* (30days) orally, and rest two patients on *Mahatriphaladya ghrita* (30 days). Later all five patients to follow the *Shamana ausaodhis* as mentioned in the table from 15 to 30 days depending on the clinical diagnosis based on the pre-defined protocol as mentioned in the table no-1. After that *Kriyakalpas* are to be started in an order *Anjana, Tarpana and Putapaka*. After a week gap, *Moordha taila to be given as Shirodhara* for each patient for 7days. After that, the patients will be kept under follow up after a month.

Table 1: Procedures and Medicaments used in the Retinitis pigmentosa

Procedures & Medicaments		**Patient1**	**Patient2**	**Patient3**	**Patient4**	**Patient5**
Shodhana						
Snehana	*Mahatriphaladya ghrita*	3 days	3 days	3 days	3 days	3 days
Virechana	*Avipattikara choorna*	1 day	1 day	1 day	1 day	1 day
Vasti	*Chakshushya kasaya*	3 days	3 days	3 days	3 days	3 days
Shamana						
Jeevantyadi ghrita		30days	30days	30days		
Mahatriphaladya ghrita					30 days	30 days
Vasaguduchyadi kashaya		15days	15days	15days	15 days	15 days
Saptamrutha Loha		30days	30days	30days	30 days	30 days
Tapyadi Loha		30days	30days	30days	30 days	30 days
Kriyakalpa						
Tarpana	*Mahatriphaladya ghrita*				7 days	7 days
	Jeevantyadi ghrita	7 days	7 days	7 days		
Putapaka	*Kanadi yoga*	3 days	3 days	3 days	3 days	3 days
Anjana	*Kanadi anjana*	15 days	15 days	15 days	15 days	15 days
Moordha Taila						
Shirodhara	*Ksheerabala taila*	7 days	7 days	7 days	7 days	7 days

Inclusion criteria

The patients following these criteria are considered to be enrolled in the study

a. The patients of age 10-40 years were selected irrespective of sex, occupation, religion and socioeconomic status.

b. Patients clinically diagnosed as retinitis pigmentosa.

Exclusion criteria

The following criteria have been noted for exclusion from the study.

a. Complete loss of vision

b. Associated with complicated Cataract, Glaucoma, Corneal opacities, Iridocyclitis.

c. Systemic diseases like Diabetes Mellitus, Systemic Hypertension, & hyper cholestremia

d. Known cases of renal diseases, and any Liver disorders

Assessment criteria

The Symptomatic changes were assessed by using suitable scoring pattern ranging from 0-3.

Observations & Results

Out of all 5 subjects enrolled for the present study have noted with features that includes blurred vision, night blindness, photophobia, field vision defect, floaters and colour blindness.

No family history was noted for retinitis pigmentosa. Among the 5-subjects selected, 80% were male, 20% were female. In terms of consanguinity, it was present in 40% and absent in 60% of subjects; 60% were vegetarians and 40% were non-vegetarians; 60% were Hindu and 40% were Muslim (Table No. 2)

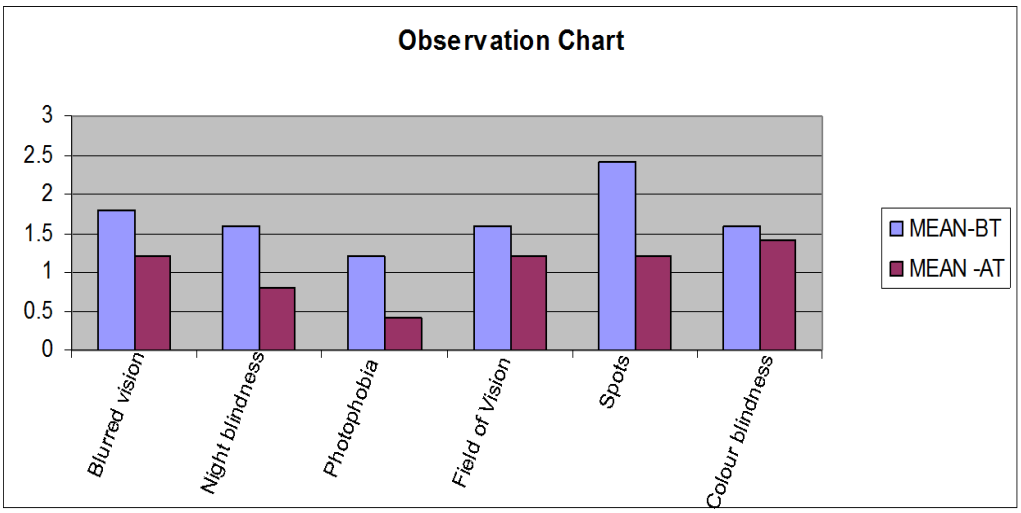
Table 2: Demographic data

	Age Group							
Variables	**10-15**	**15-20**	**20-25**	**25-30**	**30-35**	**35-40**	**TOTAL**	**%**
SEX								
Male	1	0	1	1	1	0	4	80
Female	0	0	0	0	0	1	1	20
CONSANGUINITY								
Present	1	0	0	0	0	1	2	40
Absent	0	0	1	1	1	0	3	60
DIET								
Vegetarian	0	0	1	1	0	1	3	60
Mixed	1	0	0	0	1	0	2	40
FAMILY HISTORY	0	0	0	0	0	0	0	0
RELIGION								
Hindu	1	0	1	0	1	0	3	60
Muslim	0	0	0	1	0	1	2	40

It has been observed that, the symptoms like blurred vision with pre-treatment mean score 1.8 has been improved to mean 1.2. Same way, night blindness which usually makes life of a patient miserable has been noted to be reduced dramatically from the pre to post treatment by almost 50%. There were remarked reduction in photophobia, and improvement in field of vision between pre & post treatment. There was marked improvement was noted in floaters or spots post treatment. But the changes in colour blindness were not remarkable. On applying statistical test before and after the treatment blurred vision, night blindness, photophobia and floaters proved highly significant, ($p<0.01$), Visual field was significant $p<0.05$) and changes in colour blindness was insignificant ($p>0.05$).

Table-3: Mean of before treatment and after treatment

S. No.	Parameters	Before treatment (mean)	Before after treatment (mean)
1	Blurred vision	1.8	1.2
2	Night blindness	1.6	0.8
3	Photophobia	1.2	0.4
4	Field of Vision	1.6	1.2
5	Spots/Floaters	2.4	1.2
6	Colour blindness	1.6	1.4



(Graph-1-Pre & Post treatment)

Table 5: Statistical analysis Pre & Post Treatment

Variables	Mean	SD	SE	Paired 't'	P
Blurred vision	0.6	0.3	0.1341	4.4742	<0.01
Night blindness	0.8	0.2	0.0894	8.9485	<0.001
Photophobia	0.8	0.2	00894	8.9485	<0.001
Field vision	0.4	0.3	0.1341	2.9828	<0.05
Spots/Floaters	1.2	0.2	0.0894	13.4228	<0.001
Colour blindness	0.2	0.2	0.0894	2.2371	<0.10

DISCUSSION

a) *Jeevantyaadi ghrita*[11]

Jeevantyaadi ghrita was selected for the present study which is specially mentioned by *Sushruta acharya* in *Drushtiroga chikitsa*. The ingredients are *Jeevanti* (*Leptadenia reticulata* W & A.), *Padmaka* (*Nelumbo nucifera* Gaertn.), *Ashwagandha* (*Withania somnifera* (Linn) Dunal., *Pippali* (*Piper longum* Linn.), *Lodhra* (*Symplocos Racemosus* Roxb.), *Saindhava Lavana*, *Shatahva* (*Anethum sowa* Roxb. Ex Flem.), *Madhuyashti* (*Glycyrrhiza glabra* Linn.), *Draksha* (*Vitis vinifera* Linn.), *Sita* (*Cynodon Dactylon* Linn), *Devadaru* (*Cedrus deodara* Roxb. Lowd), *Haritaki* (*Terminalia chebula* Retz.), *Vibhitaki* (*Terminalia bellirica* Gaertn. Roxb.), *Amalaki* (*Phyllanthus emblica* Linn.), *Goghrita* (*Butyrum deparatu*), *Godugdha* (Cow milk). This drug contains *Madhura rasa, Laghu guna, Sheeta veerya, Madhura vipaka.*

b) *Mahatriphaladya ghrita:*[12]

The major constituents are *Haritaki* (*Terminalia chebula* Retz.), *Vibhitaki* (*Terminalia bellirica* Gaertn.Roxb) and *Amalaki* (*Phyllanthus emblica* Linn) are *Tridoshahara, Rasayana and Chakshushya.* It acts as antioxidant and immunomodulator.

The *Goghrita* especially having *Chakshushya, Vrishya*, *Agnivardhaka, Madhura vipaka, Sheeta veerya* and *Tridoshashamaka* properties.

c) *Vasaguduchyadi kashaya*[13]

The major constituents are *Vasa* (*Adhatoda vasica* Nees), *Guduchi* (*Tinospora cordifolia*), *Nimba* (*Azadirachta indica*), *etc. which are Pitta-Kapha shamaka and Chakshushya.*

***d*) *Saptamruta loha*[14]**

It contains *Haritaki* (*Terminalia chebula* Retz.), *Vibhitaki* (*Terminalia bellirica* Gaertn. Roxb.) *Amalaki* (*Phyllanthus emblica* Linn.) and *Loha bhasma* (Purified Iron powder). Since it is *Drushtiprasadaka* and *Rasayana,* it is helpful to preserve the eyesight and effective in night blindness.

e) *Tapyadi loha*[15]

Haritaki (*Terminalia chebula* Retz.), *Vibhitaki* (*Terminalia bellirica* Gaertn. Roxb.) *Amalaki* (*Phyllanthus emblica* Linn.), *Chitrakamoola* (*Plumbago Zeylanica*), *Vidanga* (*Emblica Ribes*), *Mustha* (*Cyprus Rotundus*), *Darvi* (*Cedrus Deodar*) etc are the ingredients. It is *Raktapushtikara* and indirectly *Chakshushya*.

f) Kanadi anjana & Kanadi putapaka[16]

Both contains *Pippali (Piper longum* Linn.) and goats liver, prepared as per *Anjana* and *Putapakakalpana vidhi*.

g) *Ksheerabala taila*[17]

Bala (*Sida rhombifolia* Linn), milk and sesame oil are the ingredients, which is *Brumhana* and pacifies *Vata* and *Pitta.*

h) *Mahamasha taila*[18]

It contains *Masha* (*Phasleolus Mungo*), *Dashamula* (a group of ten drugs) etc. It is *Vatashamaka* and give strength to eye through Nasya.

i) *Avipattikara choorna*[19]

It contains *Haritaki* (*Terminalia chebula* Retz.), *Vibhitaki* (*Terminalia bellirica* Gaertn. Roxb.) *Amalaki* (*Phyllanthus emblica* Linn.), *Pippali* (*Pipper longum* Linn.), *Trivrut* (*Operculina turpethum*), *Vidanga* (*Embelica ribes*) etc. It is *Agnivardhaka* and *Pitta rechaka* and pacifies *Doshas* in eye.

j) *Chakshushya vasti*[20]

Bala (*Sida rhombifolia* Linn.), Patola (*Trichosanthes dioica*), *Eranda* (*Ricinus communis*) etc. are the ingredients. The

formulation given as *Vasti* is said as which strengthen the eyes.

CONCLUSION

The study confirmed that *Ayurvedic* treatment was safe and effective to significant extent in reducing subjective symptoms of Retinitis pigmentosa thereby improving the quality of life of the patients. The drugs and procedures used are probably has got a rejuvenating action which improve the eye structurally and functionally as a whole, especially that of retina.

REFERENCES

1. Jack J Kanski. Clinical ophthalmology A Systematic approach. 5th edition, London. Butterworth Heinemann. 2003. Pg.491
2. Ibid
3. Ramanjit Sihota & Radhika Tandon. Parsons' Diseases of the Eye. 21st edition. New Delhi. Elsevier- A division of Reed Elsevier India Pvt. Ltd. 2011. Pg.321
4. Jack J Kanski. Clinical ophthalmology A Systematic approach. 5th edition, London. Butterworth Heinemann. 2003. Pg.491
5. A K Khurana & Aruj K Khurana. Comprehensive Ophthalmology. 4th edition. New Delhi. New Age International Pvt. Ltd, Publishers. 2007. Pg269
6. Jack J Kanski. Clinical ophthalmology A Systematic approach. 5th edition, London. Butterworth Heinemann. 2003. Pg.491
7. Jack J Kanski. Clinical ophthalmology A Systematic approach. 5th edition, London. Butterworth Heinemann. 2003. Pg.492
8. Ibid
9. Susruta, Susruta Samhita, Nibandhasamgrahatika of Dalhana and Nyaya Chandrikatika of Gayadasa, Chowkhamba Krishnadas Academy Varanasi, Edition – 2009, Uthara tantra Pg. 597
10. Susruta, Susruta Samhita, Nibandhasamgraha tika of Dalhana and Nyaya Chandrikatika of Gayadasa, Chowkhamba Krishnadas Academy Varanasi, Edition – 2009, Uthara tantra Pg. 608, 609
11. Susruta, Susruta Samhita, Nibandhasamgraha tika of Dalhana and Nyaya Chandrikatika of Gayadasa, Edition 2009. Chowkhamba Krishnadas Academy Varanasi, Uthara tantra. Pg.630
12. Govindadas Sen. Bhaishajyaratnavali. Edition1997. Mumbai. Khemraj Shrikrishnadas Prakashan.1997. Pg-1191
13. Ramnivas Sharma & Surendra Sharma. Shasrayogam. Edition 2013. New Delhi. Chaukhambha Sanskrit Pratishtan Pg291
14. Govindadas sen. Bhaishajyaratnavali. Edition1997. Mumbai. Khemraj Shrikrishnadas Prakashan.1997. Pg1187
15. Vaidya ramraksha patak. Ayurvedasara sangraha. edition2011. Kolkatta. Shri Baidyanath Ayurved Bhavan Ltd. 2011. pg.412
16. Susruta, Susruta Samhita, Nibandhasamgraha tika of Dalhana and Nyaya Chandrikatika of Gayadasa, Edition 2009. Chowkhamba Krishnadas Academy Varanasi, Uthara tantra. Pg.626
17. Ramnivas Sharma & Surendra Sharma. Shasrayogam. Edition 2013. New Delhi. Chaukhambha Sanskrit Pratishtan Pg.75
18. Govindadas sen. Bhaishajyaratnavali. Edition1997. Mumbai. Khemraj Shrikrishnadas Prakashan.1997. Pg.663
19. Govindadas sen. Bhaishajyaratnavali. Edition1997. Mumbai. Khemraj Shrikrishnadas Prakashan.1997. Pg.1083
20. Agnivesha, Charaka samhitha- Chakrapanitika- Ayurveda dipikavyakhya, Edition2006. New delhi. Chaukhambha publications. 2006. Pg. 695

Cite this article as:
Renu V T, Mamatha K V, Hamsaveni V, Baidyanath Mishra. An Insight to Retinitis Pigmentosa and Management by Ayurvedic Therapies. Int. J. Ayur. Pharma Research. 2014;2(6):48-53.

Source of support: Nil, Conflict of interest: None

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