ejpmr, 2017,4(3), 233-236.

SJIF Impact Factor 4.161

EUROPEAN JOURNAL OF PHARMACEUTICAL AND MEDICAL RESEARCH

www.ejpmr.com

Review Article

ISSN 2394-3211

EJPMR

AYURVEDIC VIEW ON RETINITIS PIGMENTOSA.

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Article Received on 08/01/2017 **Article Revised on 28/01/2017** **Article Accepted on 18/02/2017**

ABSTRACT

Retinitis pigmentosa (RP) defines a clinically and genetically diverse group of diffuse retinal dystrophies initially predominantly affecting the rod photoreceptor cells with subsequent degeneration of cones with a prevalence of 1:5000. It appears in the childhood and progresses slowly, often resulting in the blindness in advanced middle age. Even with all advancement and inventions in the field of ophthalmology complete curative treatment is not yet possible. In *Ayurveda,* conditions like *Kaphavidagdha drushti, Dhoomadarshi, Nakulandhyata* and *Hraswajadya* can be simulated to different stages of RP. In *Kaphavidagdha drushti* the patient will be able to visualize in a better way because of *kaphalpata,* when this *dushita kapha* enters *tritiya patala,* there manifests *Nakthandhyata*. In case of *Dhoomadarshi* aggravated *pitta* causes *dhushti* of *drushti* where the patient gets a smoky view of all objects. In case of *Nakulandhyata*, because of *tridosha sanchaya* in *drusthi*, it appears like that of *drushti* of *nakula* and there appears multicoloured objects during daytime. In *Hraswajadya* there will be complete loss of vision during night time and in day time patient can visualize things with great difficulty. Based on *rogi* and *roga bala pramana*, *nasya, seka, anjana, alepa, putapaka*, *tarpana, basti, shirobasti, ghritapana* helps in improving the vision and extent of peripheral vision and acts as a prophylactic in arresting or delaying the progression of disease. The chemical constituents and other phytonutrients of the drugs used to treat this condition and systematic procedure of certain therapies has the ability to cross the retinal barriers and there by giving good results in treating RP.

KEYWORDS: *Retinitis pigmentosa, Kaphavidagdha drushti, Dhoomadarshi, Nakulandhyata, Hraswajadya.*

INTRODUCTION

Retinitis pigmentosa defines a clinically and genetically diverse group of diffuse retinal dystrophies initially predominantly affecting the rod photoreceptors with subsequent degeneration of cones.[1] 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'.[2] In *Sushruta Samhita*, one of the oldest text books of *Ayurveda* has described seventysix *Netra rogas* and their detailed treatment comprising of both medicinal and surgical methods. Among these, diseases like *Kaphavidagdha drushti*, *Dhoomadarshi*, *Nakulandhyata*, *Hraswajadya* closely resemble RP in their symptomatology and different stages.[3]

INHERITANCE: The age of onset, rate of progression, eventual visual loss and associated ocular features are frequently related to the mode of inheritance. Sporadic disorder(without any family history) occurs due to mutation of multiple gene(>50%) including rhodopsin gene(40%).[4] Inherited disorder includes three varieties: Autosomal dominant(AD) which is more common(25%) having best prognosis, Autosomal reccesive(AR) which is less common(25%) having intermediate prognosis, X-linked(XL) which is least common(10%) more severe form which may result in complete blindness by the 3rd or 4th decade(10%).[5]

PREVALENCE AND DEMOGRAPHY: It occurs in 1 person per 5,000 of the world population. It appears in the childhood and progresses slowly, often resulting in blindness in advanced middle age. No race is known to be exempt or prone to it. Males are more commonly affected than females in a ratio of 3:2. Disease is almost invariably bilateral and both eyes are equally affected.[6]

PATHOGENESIS: Pathogenesis involves molecular mechanism which in turns causes gene mutation there by leading to apoptosis causing death of rod photoreceptors in early stages with subsequent degeneration of cones.[7]

CLINICAL FEATURES: It can be studied under the following headings: visual symptoms, fundus changes, visual field changes, electrophysical changes.[8]

Visual symptoms: Dark adaptation-Light threshold of the peripheral retina is increased; though the process of

dark adaptation itself is not affected until very late. Tubular vision-Loss of peripheral vision with preservation of central vision occurs in advanced cases. Night blindness-It is the characteristic and earliest feature and may present several years before the visible changes in the retina appear. It occurs due to degeneration of the rods. central vision is also lost ultimately after many years.

Fundus changes: Retinal pigmentary changes- These are typically perivascular and jet black spots resembling bone corpuscles in shape. Initially these changes are found in the equatorial region only and later spread both anteriorly and posteriorly. Retinal arterioles are attenuated and may become thread like in late stages. Thinning and atrophy of retinal pigment epithelium is seen in mid and far peripheral retina with relative sparing of RPE at the macula. Optic disc becomes pale and waxy in later stages and ultimately consecutive optic atrophy occurs. Other associated changes which may be seen are colloid bodies, choroidal sclerosis, cystoid macular odema, atrophic or cellophane maculopathy.

Visual field changes: Annular or ring-shaped scotoma is a typical feature which corresponds to the degenerated equatorial zone of retina. As the disease progresses, scotoma increases anteriorly and posteriorly and ultimately only central vision is left(tubular vision). Eventually, even this is also lost and the patient becomes blind.

Electrophysical changes: Typical electrophysiological changes appear early in the disease before the subjective symptoms or the objective signs appear. Electroretinogram(ERG) shows initially subnormal and eventually extinguished. Electro-oculargram(EOG) reveals subnormal with an absence of light peak.

ASSOCIATIONS OF RP: OCULAR ASSOCIATIONS includes Myopia, primary open angle glaucoma, microphthalmus, conical cornea(keratoconus), posterior subcapsular cataract. SYSTEMIC ASSOCIATIONS - Most of the cases of RP are isolated, but about 25% have associated systemic diseases. It includes, Laurence-moon-biedle syndrome, Cockayne's syndrome, Refsum's syndrome, Usher's syndrome, Hallgren's syndrome etc.,[9]

ATYPICAL FORMS OF RP: Cone-rod dystrophy, retinitis pigmentosa sine pigmento, sectorial retinitis pigmentosa, pericentric retinitis pigmentosa, retinitis punctata albescens.[10]

TREATMENT: In general, the long term prognosis of retinitis pigmentosa is poor, with eventual loss of central vision due to direct involvement of the fovea.[11] Measures to stop progression, without any breakthrough include: vasodilators, placental extracts, transplantation of rectus muscles into suprachoroidal space, light exclusion therapy, ultrasonic therapy and acupunture therapy. Recently vitamin A(15000 IU)has been recommended to check its progression. If it is associated with any refractive error it should be corrected. If associated with cystoid macular oedema, systemic acetazolamide-500mg. Low vision aids(LVA) in the form of magnifying glasses and night vision device may be of some help. Rehabilitation of the patient should be earned out as per his socioeconomic background. Prophylaxis: genetic counselling for non-consanguineous marriages may help to reduce the incidence of disease.[12]

KAPHAVIDAGDHA DRUSHTI

Kaphaja sadhya vyadhi, where in all the objects appear white. When the *dushita kapha* enters the *tritiya patala*, there manifest *Nakthandhyata*. In the day time, patient will be able to visualize in a better way because of *kaphalpata*. *Nakthandhyata* can also be taken as an *upadrava* of *kapha vidagdha drushti*.[13] According to *Vagbhata*, it is called as *Ushna vidagdha drushti*.

Nidana - Getting into cold water or doing cold water bath soon after exposure to heat, exposure to sunlight.

Samprapti- Tridosha prakopa associated with *rakta* leads to *urdhwa gamana* of *ushnata* taking *ashraya* in *netra*.

Lakshana- Netradaha, netra ushnata, *shuklabhaga* becomes *malapoorna i.e, aviladarshana,* complete loss of vision during night and blurred vision(better than that of night) in daytime.[14]

Chikitsa

Sarva kaphahara chikitsa, nasya, seka, anjana, lepa, tarpana, putapaka. *Kaphaja abhishyandavat chikitsa-seka, tarpana, nasya, anjana. Shastra karma* and *rakta mokshana* are contraindicated. Internally *ghrita* processed with *trivrt* is useful. *Snehapanartha-trivrtghrita, tilvakaghrita, asamskrutha purana ghirtapana* followed by *vamana*.

Anjana yogas-(a) Gairika, saindhava, krshna, godanti. (b)Stalk of *kapitta* with honey.(c) Fruits of *kapikacchu* with honey.[15]

Note: According to Dalhana, *anjana* should be done in day time in *Kaphavidagdha drushti.*[16]

NAKTHANDHYA CHIKITSA

- A collyrium composed of *srotanjana, saindhava, pippali, renuka* pasted with urine of a goat and formed into wicks is useful for the treatment of night blindness.
- *Kshudranjana.*
- *Kana pippali yoga*: Liver of *godha* partially split and filled with *pippali* and roasted on fire used internally and also as collyrium undoubtedly cures *Nakthandhya*. In similar way goat's liver can be used instead of *godha*.

- Similarly, *maricha* is mentioned in place of *pippali* by *Chakradatta*.
- Liver and spleen both cut into pieces and mixed with *ghrita* and oil, roasted on a stick and taken internally and also used as a collyrium after mixing them with mustard oil constitute a quick remedy.
- The flowers of *agastya* are to be taken internally to relieve *Nakthandhya*.[17]

Other *yogas* include

- *Karanjikadi varti*
- *Kshaudra jati rasa varti*
- *Dwi haridra rasanjana varti*
- *Kauntyadi varti*
- *Kalanusariva varti*
- *Dashanga haritaki*
- *Triphalaghrita*
- *Mahatriphalaghrita*
- *Dashamrita haritaki*
- *Nripavallabha taila and ghrita*.[18]

***DHOOMADARSHI*:** It is a *pittaja sadhya vyadhi*. *Nidanas* like *shoka, jwara, aayasa, shiroabhitapa* does *pitta prakopa* which in turn causes *dushti* of *dhrusti* there by leading to *dhoomakan pashyati* i.e.,smoky vision.[19]

CHIKITSA

- *Jeerna Sarpi pana.*
- *Pittaja abhishyanda, raktaja abhishyanda, pitta vidagdha drishti* and *pittaja visarpa chikitsa.*
- *Snigdha virechana.*
- *Sheeta pradeha.*
- *Goshakrit rasa, dugdha, ghrita-anjana.*
- *Swarna gairikadi anjana.*
- *Nasya.*
- *Tarpana.*[20]
- If not responding to the above treatment *Acharya Vagbhata* advices *siravyadha.*[21]

***NAKULANDHYATA*:** It is a *tridoshaja asadhya vyadhi*. In this case, because of *tridosha sanchaya* in *drusthi*, it appears like that of *drushti* of *nakula* and there appears multicoloured objects during daytime.[22]

HRASWAJADYA: It is a *pittaja asadhya vyadhi*. A condition in which there will be complete loss of vision during night time and in day time, patient can visualize things with great difficulty. Bigger objects appear small in this condition. *Dalhana* opines that according to some authors due to *pittalpata*, patient can visualize things in a better way during night time.[23] This is one among the types of night blindness according to sage *Videha*, whereas *Acharya Sushruta* and *Acharya Madhava* have described it as a defective vision only in day time.[24]

Yogaratnakara explains *Hraswajadya* in a different manner where a condition in which the patient visualizes during day time with great difficulty and also bigger objects appear small. But due to *pittalpata*, patient will be able to visualize all things in their normal size and shape in the night time.[25]

CONCLUSION

According to *Dalhana, Nakthandhya* is of four stages: *kaphavidagdha drushti, dhoomadarshi, nakulandhyata, hraswajadya* and hence retinitis pigmentosa can be simulated to different stages of RP. 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* 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. *Nasya, seka, anjana, alepa, tarpana, putapaka, shirobasti, ghritapana* helps in improving the vision and extent of peripheral vision. These therapies acts as prophylactic in arresting or delaying the progression of disease based on the *balapramana* of the *rogi* and *roga*. The chemical constituents and systematic procedures of certain therapies has the ability to cross the retinal barriers. The above mentioned *Ayurvedic* treatment are very safe and effective to significant extent in reducing subjective symptoms of retinitis pigmentosa thereby improving the quality of life of the patients.

REFERENCES

1. A K Khurana & Aruj K Khurana. Comprehensive Ophthalmology. 6th edition. New Delhi. Jaypee Brothers Medical Publishers(P), Ltd.pp-623, pg-287.
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. A K Khurana & Aruj K Khurana. Comprehensive Ophthalmology. 6th edition. New Delhi. Jaypee Brothers Medical Publishers(P) Ltd.pp-623, pg-287.
5. Jack J Kanski. Clinical ophthalmology A Systematic approach. 5th edition, London. Butterworth Heinemann. 2003. Pg.491.
6. A K Khurana & Aruj K Khurana. Comprehensive Ophthalmology. 6th edition. New Delhi. Jaypee Brothers Medical Publishers(P) Ltd.pp-623, pg-287.
7. A K Khurana & Aruj K Khurana. Comprehensive Ophthalmology. 6th edition. New Delhi. Jaypee Brothers Medical Publishers(P) Ltd.pp-623, pg-287
8. A K Khurana & Aruj K Khurana. Comprehensive Ophthalmology. 6th edition. New Delhi. Jaypee Brothers Medical Publishers(P) Ltd.pp-623, pg-287,288.
9. A K Khurana & Aruj K Khurana. Comprehensive Ophthalmology. 6th edition. New Delhi. Jaypee Brothers Medical Publishers(P) Ltd.pp-623, pg-288,289.
10. A K Khurana & Aruj K Khurana. Comprehensive Ophthalmology. 6th edition. New Delhi. Jaypee Brothers Medical Publishers(P) Ltd.pp-623, pg-289.

11. Jack J Kanski. Clinical ophthalmology A Systematic approach. 5th edition, London. Butterworth Heinemann. 2003. Pg.492
12. A K Khurana & Aruj K Khurana. Comprehensive Ophthalmology. 6th edition. New Delhi. Jaypee Brothers Medical Publishers(P) Ltd.pp-623, pg-289.
13. Sushrutha Samhita, with Sri Dalhanacharya teeka, edited by Narayan Ram Acharya "Kavyathirtha", Chaukhambha orientalia, Varanasi, reprint edition-2009, Uttaratantra 7th chapter, Verse-37,38, pp-824, pg-608.
14. Ashtanga Hridaya with commentaries sarvangasundari of Arunadatta and Ayurvedarasayana of Hemadri, Annotated by Dr Anna Moreswar Kunte and Krishna Ramachandra Sastri Narre, edited by Pt. Hari Sadasiva Sastri, Chaukhamba Surabharati Prakasan, Varanasi, Edition 2008, Uttarasthanam, 16th chapter, Verse 26-28, pp 956.
15 Sushrutha Samhita, with Sri Dalhanacharya teeka, edited by Narayan Ram Acharya "Kavyathirtha", Chaukhambha orientalia, Varanasi, reprint edition-2009, Uttaratantra 17th chapter, Verse-4,5,6,7, pp-824, pg-625.
16 Sushrutha Samhita, with Sri Dalhanacharya teeka, edited by Narayan Ram Acharya "Kavyathirtha", Chaukhambha orientalia, Varanasi, reprint edition-2009, Uttaratantra 17th chapter, Verse-6&7-teeka, pp-824, pg-625.
17 Sushrutha Samhita, with Sri Dalhanacharya teeka, edited by Narayan Ram Acharya "Kavyathirtha", Chaukhambha orientalia, Varanasi, reprint edition-2009, Uttaratantra 17th chapter, Verse-16-26, pp-824, pg-626, 627.
18 Professor Udayshankar-Text book of Shalakya tantra, Chaukambha orientalia, Varanasi, 1st Edition-2012, pp-744, pg-597.
19 Sushrutha Samhita, with Sri Dalhanacharya teeka, edited by Narayan Ram Acharya "Kavyathirtha", Chaukhambha orientalia, Varanasi, reprint edition-2009, Uttaratantra 7th chapter, Verse-39, pp-824, pg-609.
20 Professor Udayshankar-Text book of Shalakya tantra, Chaukambha orientalia, Varanasi, 1st Edition-2012, pp-744, pg-599.
21 Ashtanga Hridaya with commentaries sarvangasundari of Arunadatta and Ayurvedarasayana of Hemadri, Annotated by Dr Anna Moreswar Kunte and Krishna Ramachandra Sastri Narre, edited by Pt. Hari Sadasiva Sastri, Chaukhamba Surabharati Prakasan, Varanasi, Edition 2008, Uttarasthanam, 13th chapter, Verse-93, pp 956.
22 Sushrutha Samhita, with Sri Dalhanacharya teeka, edited by Narayan Ram Acharya "Kavyathirtha", Chaukhambha orientalia, Varanasi, reprint edition-2009, Uttaratantra 7th chapter, Verse-40,41, pp-824, pg-609.
23 Sushrutha Samhita, with Sri Dalhanacharya teeka, edited by Narayan Ram Acharya "Kavyathirtha", Chaukhambha orientalia, Varanasi, reprint edition-2009, Uttaratantra 7th chapter, Verse-40, pp-824, pg-609.
24 Professor Udayshankar-Text book of Shalakya tantra, Chaukambha orientalia, Varanasi, 1st Edition-2012, pp-744, pg-600.
25 Yogaratnakara with hindi commentary by Vaidya Shrilakshmipati Shastri edited by Bhisagratna Sri Brahmasankaramishra shastri, Chaukambha Sanskrit bhawan, Varanasi, Uttarakhanda, Netrarogadhikara, pg-647.