



AYURVEDIC VIEW ON RETINITIS PIGMENTOSA

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ABSTRACT

Retinitis pigmentosa (RP) denotes a clinically and genetically heterogeneous group of hereditary disorders in which there is progressive loss of photoreceptor and pigment epithelial function. It appears in the childhood and progresses 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*, *Dhumadarshi*, *Nakulandhya* and *Hruswjadya* can be stimulated to different stages of RP. In *Kaphavidagdha drushti* the patient will be able to visualize in a better way because of *Kaphalpata*, when *Doshas* affect all three *Patalas*. In case of *Dhumadarshi* aggravated *Pitta* causes *Dushti* of *Drushti*, where patient will get a smoky view of all objects. In case of *Nakulandhyata*, because of *Tridosha Sanchaya* in *Drushti*, it resembles *Drushti* of *Nakula* and there is visualization of objects in abnormal colours during day time. In *Hraswajadya*, in day time patient can visualize things with great difficulty and visualizing all objects smaller than their normal size. Based on *Rogi* and *Roga Bala Pramana*, *Nasya*, *Seka*, *Anjana*, *Aalepa*, *Putpaka*, *Tarpana*, *Basti*, *Shirobasti*, *Ghritpana* 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 result in treating RP.

KEYWORDS: Retinitis Pigmentosa, Kaphavidagdha Drushti, Dhumadarshi, Nakulandhya, 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'. In Sushruta Samhita, one of the oldest text books of Ayurveda has described seventy six *Netra rogas* and their detailed treatment comprising of both medicinal and surgical methods. Among these, diseases like *Kaphavidagdha drushti*, *Dhumadarshi*, *Nakulandhya* and *Hruswjadya* closely resembles RP in their symptomatology and different stages.

Inheritance: The age of onset, rate of progression, visual loss and associated ocular features are frequently related to the mode of inheritance. Sporadic disorder (without family history) occurs due to mutation of

multiple gene (>50%) including rhodopsin gene (40%), inherited disorder includes: Autosomal recessive (AR) which is most common (25%), intermediate severity, Autosomal dominant (AD) which is next common (25%), least severe and X-linked, least common (10%), most severe.^[2]

Prevalance and Demography: It occurs in 1 person per 5000 of the world population. It appears in 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 the eyes are equally affected.^[3]

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.^[4]

Clinical Features: It can be studied under the following headings: visual symptoms, fundus changes, visual field changes, electrophysical changes.^[5]

(A) Visual symptoms: Night blindness- It is the characteristic feature and may present several years before the visible changes in the retina appear. It occurs due to degeneration of the rods. 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 - occurs in advanced cases.

(B) Fundus changes: Retinal pigmentary changes - These are typically perivascular and resemble 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 (narrowed) and may become thread-like in late stages. 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 oedema, atrophic or cellophane maculopathy.

(C) 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.

(D) Electrophysiological changes: The electroretinogram (ERG) and particularly the electro-oculogram in such cases are markedly subnormal or completely extinguished early in the disease before subjective symptoms or the objective signs (fundus changes) appear. Electro-retinogram (ERG) is subnormal or abolished. Electro-oculogram (EOG) shows absence of light peak.

Association of RP: OCULAR ASSOCIATION - These include myopia, primary open angle glaucoma, microphthalmos, conical cornea and posterior subcapsular cataract.

Systemic Association: These are in the form of following syndromes: Laurence-Moon-Biedl syndrome, Cockayne's syndrome, Refsum's syndrome.^[6]

Atypical Forms of RP: Retinitis pigmentosa sine pigmento, sectorial retinitis pigmentosa, pericentric retinitis pigmentosa, retinitis punctata albescens.

Treatment: Regular follow up is essential to detect treatable vision-threatening complications, provide support and maintain contact in case of therapeutic complications, provide support and maintain contact in case of therapeutic innovation. No specific treatment is yet commercially available, but modalities such as gene therapy and retinal prostheses show promise for future.^[7]

In general, the long term prognosis of RP is poor, with eventual loss of central vision due to direct involvement

of the fovea. Measures to stop progression, without any breakthrough include: vasodilators, placental extracts, transplantation of rectus muscles into suprachoroidal space, light exclusion therapy, ultrasonic therapy and acupuncture therapy. Recently vitamin A and E have been recommended to check its progression. 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 carried out as per his socio-economic background.

Prophylaxis- Genetic counselling for no consanguineous marriages may help to reduce the incidence of disease. Further, affected individuals should be advised not to produce children.^[8]

Ayurvedic View

Kaphavidagdha Drushti

The patient of *Kapha vidagdha drushti* sees all objects as white. When the *Doshas* affect all the three *Patalas* there manifests *Naktandhyata* means patient will not see at night. As eyes are favoured by sun in day time and amount of *Kapha* is less patient will have normal sight.^[9]

Nidan: Getting into cold water or doing cold water bath as soon after exposure to heat, exposure to sunlight.^[10]

Samprapti: *Tridosha prakopa* associated with *Rakta* leads to *Urdhwa Gamana* of *Ushnata* taking *Ashrya* in *Netra*.^[11]

Lakshana: *Netradaha*, *Netra ushnata*, *Shuklabhag* becomes *Malapoorna* i.e. *Aviladarshana*, complete loss of vision during night and blurred vision in daytime.^[12]

Chikitsa: All *Kaphahara* measures are advised to manage this disease.^[13]

Khsudranjana: *Kana pippali yoga:* liver of *godha* partially split and filled with *Pippali* and roasted on fire used internally and also as collyrium cures *Naktandhyata*. In similar ways goat's liver can be used instead of *godha*.

The flower of *Agastya* are to be taken internally to relieve night blindness according to *Sushtuta Samhita*.

A *Gutikanjana* composed of old jiggery, *Kasisa*, *Pippali* and *Katphala* which is mixed with cow dung will relieve night blindness if applied with *Marica*.

Other yogas include

- *Karanjikadi varti*
- *Ksauadra jati varti*
- *Dwi haridra rasanjana varti*
- *Kauntyadi varti*
- *Kananjana*
- *Dasanga haritaki*
- *Triphala ghris*
- *Dasamrita haritaki*

- *Nripavallbha haritaki*

Dhumadarsi: When *Drishti* is affected due to grief, fever, exertion, or headache patient will see everything as covered by smoke and sharpness of the form sense will be reduced. There is blurred vision only during day time and not in the night, as *Pitta* is reduced at night time, then vision may be regained.^[14]

Chikitsa^[15]

- *Ghritpana* of old preserved ghee
- *Snigdha virechana*
- Cold application to the body and head
- *Anjana* prepared from cow dung, milk and ghee
- *Swarnagairikadi anjana*
- If not responding, *Siravyadha* should be done

Nakulandhya – It is *Tridoshas Asadhya vyadhi*. In this case due to accumulations of *Doshas*, it resembles the eye of a mangoose (*nakula*) and visualizes objects in abnormal colors during day time.^[16]

Chikitsa: Acharya Sushruta called it as *Asadhya vyadhi* but Acharya Yogratnakar advised a *Kwath* specially for *Nakulandhya* : equal quantities of *Vacha*, *Trivritta*, *Rakt chandan*, *Guduchi*, *Kirat tikta*, *Nimbi*, *Haridra* and *Vasa* should be boiled in water as per *Kwatha vidhi*. This decoction should be taken orally after digestion of the food, it will cure *Nakulandhya Roga*.^[17]

Hraswajadya: It is *Pittaja Asadhya vyadhi*. A condition in which patient will see objects during the day with difficulty. Visualizing all objects smaller than their normal size and hence the name *Hraswajadya*.^[18] Acharya Vagbhata has described *Hriswa* as a disease producing *Hriswa darsini* (visualizing everything as small in size) and *Pittena sa hrswa* (eye becoming small in size due to *Pitta*).

CONCLUSION

According to Dalhana, *Naktandhyata* is of four stages: *Kaphavidagdhyata drushti*, *Dhumadarshi*, *Nakulandhyata*, *Hraswajadya* and hence retinitis pigmentosa can be stimulated to different stages of RP. There is special mention of *Kriyakalpas*, 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 *Kriyakalpas* are based on *Dosha* afflicting and condition of the disease. *Nasya*, *Seka*, *Anjana*, *Alepa*, *Tarpana*, *Putpka*, *Shirobasti*, *Ghritpana* helps in improving the vision and extent of peripheral vision. These therapeutics acts as prophylactic in arresting or delaying the progression of disease based on *Balapramana* of the *Rogi* and *Roga*. 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 patient.

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