

Ayurvedic Approach in Diabetic Retinopathy

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Abstract: Diabetic retinopathy is the most common diabetic eye disease and a leading cause of blindness. Almost every patient with long history of uncontrolled diabetes suffers from diabetic retinopathy sooner or later. It affects the person in various stages and symptoms are widely different in patients. Uncontrolled blood sugar levels affect the permeability and blood flow of retinal blood vessels. The resultant is leaking blood from the vessels even with a mild mechanical jerk or even with slightly increased blood pressure. In early stages, there are small dot hemorrhages in retina or vitreous. The stage can lead to significant vision loss if there is leakage of vessels underneath macula. The resulting macular edema causes disturbance in the uniformity of the retinal surface and hence, the patient sees the distorted images. In advanced stage, proliferation and neo-vascularization result in severe and multiple hemorrhages that ultimately lead to vision loss as the degeneration progresses and become irreversible too. **Stages:** Two types, or Stages of retinopathy: Non Proliferative or Proliferative. **Treatment:** Diabetic retinopathy is caused by vitiation of Vata, Pitta & Kaphadosha. Diabetic retinopathy can be well controlled by Ayurvedic treatment as Ayurvedic herbs not only reverse the blood clots formed in retina and vitreous but also strengthen the metabolic functions so that further chances of blood leakage can be minimized. All these things are possible only if there is strict control of blood sugar level. The major Ayurvedic procedures done for Diabetic Retinopathy are –Tarpana, Pariseka, Takradhara, Anjana, Vasti, Aschyotna.

Keywords: Diabetic Retinopathy, Tarpana, Pariseka, Aschyotana, Vasti, Anjana, Takradhara

1. Introduction

Ayurveda is well recognized for its role in preventing the disease, but as such no description is available in text which clarifies the progression of *Prameha* to loss of vision. So Ayurvedic treatment purely lies on the basis to pacify the pathological changes which occurs in eye as a result of diabetes.

Diabetic Retinopathy can be compared to *Timira* according to Ayurvedic classics (**Table no.1**). Diabetic Retinopathy (DR) is one of the major complications of diabetes mellitus. Diabetic retinopathy is a chronic progressive, potentially sight-threatening disease of the retinal microvasculature associated with prolonged hyperglycaemia and other conditions linked to diabetes mellitus such as hypertension, hyperlipidaemia and proteinuria etc.¹ Almost all the patients with Type I diabetes develop retinopathy in about 15 years. In those with Type II diabetes, the risk of DR increases with the duration of diabetes, accompanying hypertension and smoking. Diabetics have a 20–25 times greater risk of blindness as compared to the normal population². Diabetic Retinopathy is 2nd leading cause of blindness in working age group (<55 years old) in industrialized countries³. Diabetic retinopathy is one among the target diseases for VISION 2020⁴.

The prevalence of DR, proliferative diabetic retinopathy (PDR), diabetic macular edema (DME), and VTDR (Vision threatening Diabetic retinopathy) among individuals with diabetes is 34.6%, 7.0%, 6.8%, and 10.2%, respectively. Estimate shows that the number of people with DR will grow from 126.6 million in 2011 to 191.0 million by 2030, and the number of people with VTDR will increase from

37.3 million to 56.3 million, if no urgent action is taken⁵. Innovative alternative therapies and comprehensive approaches are needed to reduce the risk of vision loss by prompt diagnosis and early treatment of Vision Threatening DR (VTDR).

2. Pathophysiology

Material and Methods

Blood being the site of *Pitta Dosha* is a major factor in this disease. Increased pitta level in blood causes its oozing from the blood vessels in retina and vitreous. *Vata*, being the controlling *Dosha* and responsible for neurological connections, also gets disturbed because of *Pitta* vitiation. The aim of Ayurvedic treatment for diabetic retinopathy is to pacify *Vata* and *Pitta Dosha*. There are Ayurveda procedures like *Takradhara*, *Netradhara*, *Tarpan* and many others which are potent enough to provide strength in blood vessels of retina so that there will not be any further haemorrhage. Any leakage from the blood vessels also gets reabsorbed. The nourishing Ayurveda medicines provide strength to retina and optic nerves thus clearing the vision. *Virechan* and *Vasti* with *Chakshyushya* drugs should be advocated to control *Vata*. *Sothahar* (anti-inflammatory) treatment can be instituted with *Vasti* treatment to reduce retinal/macular edema in general. *Nasya*, *Shirodhara*, *Shirolepa* and *Shiropichu* treatments can be given in different stages of diabetic retinopathy. *Nasya* with oil prepared from *Chakshyusya* drugs should be done for *Urdhwajatrugata srotassodhan*. *Kriyakalpa* is an integral part of Ayurvedic ocular therapeutics. *Pariserka*, *Aschyotan*, *Tarpan* and *Putapaka* can be given after proper evaluation.

Tarpana

In case of different stages of DR the medicines like *Patoladighrita*, *Jivantyadighrita*, *Drakshyadighrita* can be used in *Tarpan* procedure to alleviate hemorrhagic signs due to *raktapittasamak*, *ropaka* and *rasayana* properties of these drugs. *Doorvadya ghrita Tarpana* is effective in mild to severe NPDR and PDR (*Raktapittajanya*) cases.⁶

Mahatriphala Ghrita (Gupta Atridev, 2008, *Ashtanga Hridaya*, Uttarasthana, 13:13–15; P 671) can be used for *Tarpana* in PDR cases as neovascularisation is a pathological feature in PDR (*Pranavritta Vyana Janya*) and *Triphala* has anti VEGF properties⁷ in eyes owes to reduce symptoms in PDR cases.

In retinal ischemic conditions of DR due to *Dhatukshyajanya* pathology *Jivantyadi Grita Tarpana* (Gupta Atridev, 2008, *Ashtanga Hridaya*, Uttarasthana, 13:2–3; P 670) and in leucocyte activated increased blood viscosity due to *Raktavritta Vatajanya* cases *Patoladi Ghrita Tarpana* (Gupta Atridev, 2008, *Ashtanga Hridaya*, Uttarasthana, 13:7–9; P 671) can be advised.

Pariseka

Pariseka with drugs having *Tikta Kashaya Rasa* and *Chakshyusya* properties helps in healing intra retinal blood vessels and arrests bleeding due to *Sthambhana* properties. This might prevent vascular endothelial growth factor (VEGF) activation, which is primarily responsible for retinal neovascularization in PDR cases. *Triphaladi Pariseka*⁸ *Manjisthadi Pariseka* (Gupta Atridev, 2008, *Ashtanga Hridaya*, Uttarasthana, 16:13; P 686), *Chandanadi Pariseka* and *Vasakadikwatha Pariseka* (Sastri Lakshmi pati, 2013, *Yogaratanakara, Netraroga Chkitsa*, P 388) will helpful in reducing *Raktapitta* pathology in different stages of DR pathology.

Aschyotana:

Medicines like *Triphaladi ghrita*, *Doorvadi ghrita* and *Patoladi ghrita* can be used as *Aschyotana* in the dose of 3–4 drops in mild to moderate DR cases. *Triphaladi*⁹, *Prapoundarikadi* (Sastri Lakshmi pati, 2013, *Yogaratanakara, Netraroga Chkitsa*, P 391) and *Manjisthadi* (Gupta Atridev, 2008, *Ashtanga Hridaya, Uttarasthana*, 16:13; P 686) *Aschyotana* can be used in initial stages of NPDR cases.

Anjana:

Ropana and *Dristiprasadana* type of *Anjanas* might be helpful in treating and preventing DR pathogenesis in *Pakwavastha*.

Vasti:

Murdhabasti, *Tarpana*, *Alepana* etc. Again he had mentioned *Niruha* and *Anuvasana Vasti* procedure for *Vataja Timir* (Gupta Atridev, 2008, *Ashtanga Hridaya*, Uttarasthana, 13:47, 62; P 674–675). *Chakshushya Vasti*¹⁰ is especially mentioned by *Vagbhatta* for its *Chakshushya*, *Pramehahara* and *Raktapittahara* properties. *Triphaladichurna*, *Triphaladikwatha*, *Mahavasadikwatha*¹¹, *Vasakadikwath* and *Amrutadiguggulu*¹² can be advised in mild to severe NPDR and PDR cases.

3. Result

In DR pathology if analysis is done properly, it possesses all the four features of *Srotovaigunya* i.e., *Atipravritti*, *Sanga*, *Siragranthi* and *Vimargagamana*.

- 1) *Sanga* - Retinal vessels occlusion- Ischemia.
- 2) *Siragranthi* - Microaneurysms,
- 3) *Vimargagamana* - Retinal haemorrhages
- 4) *Atipravritti*- Neovascularization

4. Discussion

Few important points which must be considered to prevent progressive vision in diabetic retinopathy:

- 1) **Control Blood Sugar Level:** Diet has a vital role in your body to resolve the digestive process on a regular basis and decreasing the toxins formation. It will also improve your eye vision. It is imperative to keep your blood sugar level in an appropriate range by taking a healthy diet, regularly analysing your blood sugar levels, regular exercise and taking *Ayurvedic* medicines through consultation.
- 2) **Control your Blood Pressure:** Diabetic retinopathy is more like to occur in individuals who suffer from high blood pressure. Treating high blood pressure can affect long-term vision and blood pressure. Controlling blood pressure can lessen the risk of several complications of diabetic retinopathy.
- 3) **Consult Eye Specialist or Ayurvedic Doctor:** Screening for diabetic retinopathy with *Ayurvedic* eye specialist will not prevent diabetic eye condition. But it can aid your avoid vision loss and blindness through early detection and treatment.
- 4) **Consult an Ophthalmologist:** Pressure or pain in the eye, floaters or new vision loss can be symptoms of severe damage to your retina. The sooner the condition can be treated, the more effective the treatment of diabetic retinopathy will be.
- 5) **Never Smoke:** Smoking can increase health issues faced by people with diabetes i.e. disease of the small blood vessels. Smoking accelerates the development of diabetic retinopathy which can lead to vision loss and blindness.
- 6) **Ignore Hazardous Activities:** Few physical activities may trigger bleeding in the eye through increased pressure. Avoiding these activities can reduce the risk of damage to your sight.
- 7) **Perform Adequate Exercise:** Exercise is effective in keeping blood sugar levels in a target range which reduces the risk of vision damage from diabetic retinopathy condition. Consult your doctor to get advice about what kind of exercise is safe for you.
- 8) **Sunglasses:** People with diabetes are at risk for blindness or vision loss. It is advisable to wear sunglasses that protect the eyes from ultraviolet rays.
- 9) **Panchkarma:** It is a cleansing program which is generally employed and includes massages, herbal therapy and a lot more. It is possibly followed by yoga and breathing exercises. Herbs and a balanced diet make up the base of this treatment.
- 10) **Ayurvedic Medicines:** *Ayurveda* is the ancient medical science which is suitable for long-term treatments. *Ayurvedic* medicines are effective in maintaining an

internal balance and can adjust its regimen for the individual. Ayurveda herbs are effective in reducing the

Insulin resistance and enhance the insulin sensitivity and hence control the sugar levels.

Table A-1: Probable correlation of *Doshaja Timir* vis-à-vis different stage of Diabetic Retinopathy.¹³

<i>Patalas</i>	<i>Doshajitimir</i>	Visual symptoms	Modern correlation/classification of DR
Ist (<i>Teja Jalashrita</i>)	<i>Vataja</i> <i>Pittaja</i>	Blurring of vision, Erythroptasia, Microptasia Metamorphosia Color vision defects	Mild NPDR
IIInd (<i>Mamsashrita</i>)	<i>Raktaja</i>	Blackouts/Scotomas Smoky, vision Color vision defects	Moderate NPDR
	<i>Sannipataja</i>	Polyopia, Diplopia, Visual field defects Photopsia	Severe NPDR Pre-proliferative PDR
IIIrd (<i>Medashrita</i>)	<i>Parimlayee Timir</i> (<i>Pitta + Rakta</i>)	Photopsia Phosphenes	PDR Vitreous Hemorrhages Retinal detachment
	<i>Parimlayee Kacha</i>	<i>Ragaprpta</i> <i>Dosha Dhatu Kshaya</i> Snow flake cataract	Diabetic Cataract
IVth (<i>Asthyashrita</i>)	<i>Sannipatika Linganasha</i>	Loss of vision	High Risk PDR Florid PDR
	<i>Parimlayee Kacha</i>	<i>Ragaprpta</i> <i>Dosha Dhatu Kshaya</i> Snow flake cataract	Diabetic Cataract

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