Ayurvedic Approach in Diabetic Retinopathy

Upendra Nath¹, Priyanka², Yogita Jain³, Mohd. Arif⁴

¹Assistant Professor, Department of Shalakya Tantra Shivalik Ayurvedic Medical College & Hospital Bijarwa-Bankat Azamgarh (U.P.)
²Assistant Professor, Department of Strī & Prasutī Tantra Shanti Ayurvedic Medical College & Hospital Majhauli, Ballia (U.P.)
³Assistant Professor, Department of Ṛogā Nidāna Evam Vikritī Vigyan Vibhaag Shivalik Ayurvedic Medical College & Hospital Bijarawa-Bankat Azamgarh (U.P.)
⁴Assistant Professor, Department of Dravya Guna Shivalik Ayurvedic Medical College & Hospital Bijarawa-Bankat Azamgarh (U.P.)

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, Aschyotana.

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 Timirā 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 Shiroipichu treatments can be given in different stages of diabetic retinopathy. Nasya with oil prepared from Chakshyushya drugs should be done for Urdhwatjārugatā Srotasodhanā. Kriyakalpa is an integral part of Ayurvedic ocular therapeutics. Pariserka, Aschyotana, 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

**Vasakadikwath**

**Triphaladichurna, Triphaladikwatha, Mahavasadikwatha** especially mentioned by Uttarasthana, 13:47, 62; **P 674** Vataja mentioned **Murdhabasti, Tarpana, Alepana Vasti** can be used in Tarpana in PDR cases as neovascularisation is a pathological feature in PDR (Pravarririta Vyana Janaya) and **Triphala** has anti VEGF properties⁵ 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 Raktavirita Vatajanya cases Patoladi Ghritra Tarpana (Gupta Atridev, 2008, Ashtanga Hridaya, Uttarasthana, 13:7–9; P 671) can be advised.

**Pariseka**

**Pariseka** with drugs having Tikta Kashaya Rasa and Chakshusya 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 neovascularisation in PDR cases. **Triphaladi Pariseka⁶ Manjisthadi Pariseka** (Gupta Atridev, 2008, Ashtanga Hridaya, Uttarasthana, 16:13; P 686), Chandanadi Pariseka and Vasakadikwatha Pariseka (Sasti Lakshmipati, 2013, Yogaratnakara, Nataroga Chkita, 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**, Prapoundarikadi (Sasti Lakshmipati, 2013, Yogaratnakara, Nataroga Chkita, 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 Pakwawastha.

**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 Vasti⁶ is especially mentioned by Vyaghata for its Chakshusya, Premeahara and Raktapittaha properties. **Triphaladichurna, Triphaladikwatha, Mahavasadikwatha**⁴, Vasakadikwatha and Amrutadiguggulu¹² 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 Vimaragagamana.

1. **Sanga** - Retinal vessels occlusion-Ishemia.
2. **Siragranthi** - Microaneurysms,
3. **Vimaragagamana** - 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, floats 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

<table>
<thead>
<tr>
<th>Patalas</th>
<th>Doshajatimir</th>
<th>Visual symptoms</th>
<th>Modern correlation/classification of DR</th>
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<tbody>
<tr>
<td>IInd (Mamsashrita)</td>
<td>Pittaja</td>
<td>Color vision defects</td>
<td>Moderate NPDR</td>
</tr>
<tr>
<td>IIInd (Mamsashrita)</td>
<td>Raktaja</td>
<td>Blackouts/Scotomas Smoky,vision Color vision defects</td>
<td>Severe NPDR Pre-proliferative PDR</td>
</tr>
<tr>
<td>IIIrd (Medashrita)</td>
<td>Parimlayee Timir (Pitta + Raktaja)</td>
<td>Photopsia Phosphenes</td>
<td>PDR Vitreous Hemorrhages Retinal detachment</td>
</tr>
<tr>
<td>IVth (Asthvashrita)</td>
<td>Parimlayee Kacha</td>
<td>Ragaprapta Dosha Dhatu Khaya Snow flake cataract</td>
<td>Diabetic Cataract</td>
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<td></td>
<td>Sannipatika Linganasha</td>
<td>Loss of vision</td>
<td>High Risk PDR Florid PDR</td>
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References


[14] View Record in Scopus

