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What a Diabetic Needs To Know About Diabetic Retinopathy- The Diseasediagnosis and Ayurvedic Management

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ABSTARCT
Diabetes mellitus has in recent times gained importance as one of the most common disease which contributes to death and disability worldwide. Diabetes is defined as a metabolic and vascular syndrome. Prevalence of which is 4-28% in India. About 2% of diabetic population isblindas a result of retinopathy. A type 1 diabetic patient is 20% prone to acquire the disease and 25% in type2 after a period of 10 years. After 30 years of being diabetic there is a 95% chance to have acquired diabetic retinopathy which left untreated can cause blindness. Currently available conventional treatments (Focal laser therapy, Anti-vascular growth factor drug) for DR have certain limitations, considering which options from alternative resources are being searched. Despite advances in science the treatment of DR is challenging.Here is an attempt to correlate the disease diabetic retinopathy with Prameha Jnaya Timira with an effort to plan a ayurvedic line of management for the same including various Kriyakalpas.
Keywords- Diabetes mellitus, Diabetic retinopathy, Pramehajanya Timira, Kriyakalpas

I. INTRODUCTION

Diabetic retinopathy is a chronic progressive, potentially sight threatening disease of the retinal microvasculature associated with prolonged hyperglycemia.

PATHOPHYSIOLOGY

SYMPTOMS

- Blurred vision
- Floaters & flashes
- Distorted vision
- Dark areas in vision
- Poor night vision
- Impaired color vision
- Partial /total loss of vision

FACTORS THAT AFFECT COURSE AND SEVERITY

- Nephropathy
- Systemic hypertension
- Pregnancy
- Positive family history of diabetic retinopathy
- Poor metabolic control

PATHOGENESIS

Diabetic retinopathy is essentially a **microangiopathy** which affects the

- Retinal precapillary arterioles
- Capillaries
- Venules

Microangiopathy causes microvascular occlusion and leakage.

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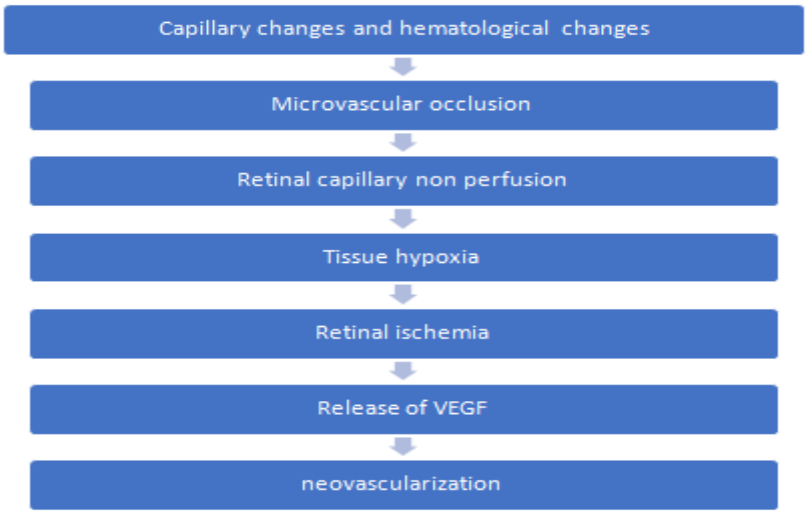
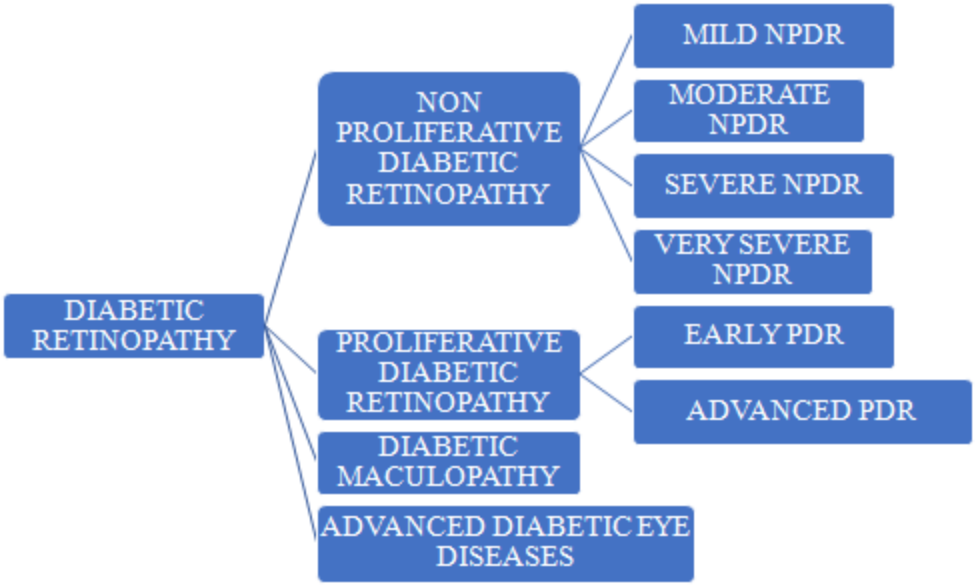


CLASSIFICATION



NON PROLIFERATIVE DIABETIC RETINOPATHY	PROLIFERATIVE DIABETIC RETINOPATHY
▪ MICRO ANEURYSMS ▪ DOT & BLOT HAEMORRHAGES ▪ FLAME SHAPED HAEMORRHAGES ▪ HARD EXUDATES ▪ COTTON WOOL SPOTS	▪ OCCURRENCE OF NEOVASCULARIZATION ▪ FIBROVASCULAR EPIRETINAL MEMBRANE – hallmark of PDR ▪ VENOUS DETACHMENT ▪ VENOUS HEMORRHAGE

DIABETIC MACULOPATHY

- The diabetic macular edema occurs due to increased permeability of the retinal capillaries
- It is diagnosed on slit lamp examination with 90 D lens

Criteria-

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1. Thickening of retina at/ within 500 micron of the Centre of fovea
2. Hard exudates at/ within 500 micron of the Centre of fovea
3. Development of a zone of retinal thickening one disc diameter or larger in size

INVESTIGATIONS

- Urine examination
- Blood sugar estimation
- RFT
- Lipid profile
- Haemogram Hb>10mg%
- HbA1C
- FFA
- OCT

MANAGEMENT – SCREENING

First examination	3 yrs after diagnosis of type 1 At the time of diagnosis of type 11
Every year	Till there is no DR/ mild NPDR
Every 6 months	In moderate NPDR
Every 3 months	In severe NPDR
Every 2 months	In PDR with no high risk characteristics

TREATMENT

- INTRA VITREAL ANTI –VEGF DRUGSEg; Avastin(1.25mg) &lucentis (0.5mg) IV in 0.1ml vehicle
- INTRA VITREAL STEROIDS
- LASER THERAPY

AYURVEDIC PERSPECTIVE

Diabetic retinopathy can be correlated to timira which is pramehajanya based on the signs and symptoms.

1st	Vataja Pittaja	Blurring of vision Micropsia Metamorphopsia Colour vision defects	Mild NPDR
2nd	Raktaja Sannipataja	Scotomas Colour vision defects Photopsia diplopia	Moderate NPDR
3rd	Parimlayeetimira Parimlayikacha	Photopsia phosphenes	PDR Retinal detachment

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4th	Sannipatikalinganasha	Loss of vision	High risk PDR

ETIOPATHOGENESIS OF TIMIRA

- **Tridosha + Raktadoshaand Saptadhatu + 4 Dristipatals**of eye are affected in Madhumehajanyatimirain different stages of the disease.
- **Avaranaand Dhatu kshaya**too have important role in development of diabetic retinopathy due to prolonged and uncontrolled hyperglycemia.
- **Agnimandya related Ama formation** has a role in pathology of diabetic retinopathy which is quite similar to **oxidative theory of diabetic retinopathy** explained in modern pathology.
- **Urdhwagaraktapitta, Ojas kshaya, Raktavrittavata, and Pranavrittavyana**are other causes in development of diabetic retinopathy.

MANAGEMENT OF DIABETIC RETINOPATHY IN AYURVEDA

- Treating the cause of Madhumeha
- Mangement of UrdwagaRaktapitta

1. Raktapittahari kriya
2. Virechana
3. Upavasa

Raktamokshana –contraindicated in Timira

- Treatment of Avarana

The Avarana should be treated by measures which are **Anabhisyandi, Snigdha**and **Srotosudhikar** .Depending on the strength of the patient, **Yapana Basti** and **mrudusamsodhan**therapy can be given. All the palliative and preventive **Rasayana** drugs are useful for the prevention and treatment of Avritta induced disorders. Especially **Shilajatu, Guggulu, Chyavanprashaand Brahma rasayana**are mostly helpful.

- Prevention of Dhatu Kshaya

Charaka has mentioned **Paritarpana** after purification therapy for diabetic patients. Even Timira is included under **Vatajananattmajavyadhi**, so Timira can be treated with Santarpanachikitsa after proper purification therapy. So **Basti** treatment may be administered for madhumehajanyatimira, as Basti therapy does both sodhana and shamana.

- Prevention of Agnimandya

Agnimandyaat tissue level is called Dhatwagnimandya. Dipana pachanadrugs like Trikatuchoornacan be used

KRIYA KALPAS –TARPANA (ASHTANGA HRIDAYA UTTARA)

- In case of different stages of DR the medicines like Patoladighrita, Jivantyadighrita, Drakshyadighritacan be used in Tarpana procedure to alleviate hemorrhagic signs due to raktapittasamaka, ropakaand rasayana properties of these drugs.
- **Doorvadyaghrita Tarpana** is effective in mild to severe NPDR and PDR
- **MahatriphalaGhrita**can be used for Tarpana in PDR cases as neovascularisation is a pathological feature in PDR and Triphala has anti VEGF properties in eyes owes to reduce symptoms in PDR cases.
- In retinal ischemic conditions of DR due to Dhatukshyajanya pathology **JivantyadiGrita Tarpana**
- In leucocyte activated increased blood viscosity due to Raktavritta Vata janyacases **Patoladighritatarpana**can be advised.

Chakshushyabasti

- This is a type of Siddhabasti
- It is mentioned by archaryavagbhatta for chakshushya, prameha hara and rakta pitta hara properties

- **ingredients of MadhutailikaBasti**

(ErandmoolaKwath, Madhu, Taila, ShatpushpaKalkaandSaindhavlavana) withYastimadhu Kalka.

Among these Madhu is having sandhan, raktapitahara and yogvahi properties which help in healing effects of retinal blood vessels.

Saindhava helps in breaking BRB to enhance the drug absorption by its sukshama and tikshnaguna.

Erandamoola having vrishya and vatahara properties helps in removing free radicalisation of cells and prevent them from oxidative stress by pacifying vata dosha.

Other ingredients help in pacifying vata to facilitate drug membrane permeability and regeneration of damaged retinal vessels.

Anjana

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- Sarivadyanjana
- Drakshyadivartianjana

Described by Vagbhatta in Pittaja and RaktajaTimirachikitsa respectively may help in hemorrhagic stages of DR pathology.

- Sriparnyadianjanadescribed by Yogratnakara in the context of Raktabhisyanda can be advised in different stages of DR pathology.

Aschyotana

- Triphaladighrita, Doorvadighritaand Patoladighrita- mild to moderate DR cases. Triphaladi, Prapoundarikadi (Yogaratnakara, NetrarogaChkitsa)
- Manjisthadi (Ashtanga Hridaya, Uttarasthana)Aschyotana- initial stages of NPDR cases.

Seka

- Pariseka with drugs having Tikta Kashaya Rasa and Chakshyusyaproperties helps in healing intra retinal blood vessels and arrests bleeding due to Sthambhana properties. This prevent VEGF activation, which is primarily responsible for retinal neovascularisation in PDR cases.
- TriphaladiParisekaManjisthadiPariseka, ChandanadiPariseka and VasakadikwathaPariseka(Yogaratnakara, Netraroga Chikitsa)

Samshamana chikitsa

- Phalatrikadikwatha
- Mahavasadikwatha
- Triphaladikwatha
- Vasakadikwatha
- Amrutadiguggulu
- Prapoundrikadi
- Manjishtadikwatha

PATHYA-APATHYA FOR DIABETIES RETINOPATHY
PATHYA-AHARA

• Yava •Godhuma• Mugdha •Triphla• Jambu • Madhu • Buttermilk •Katu-tikta shaka
APATHYA- AHARA
•Dadhi•Anupajamamsa and rasa • Snigdha ahara•Abhishyandiahara•Navdhanya• Guda vaikrata anna
PATHYA- VIHARA
•Padabhyanga• Paduka dharana
APATHYA-VIHARA
•Diwaswapna 34
•Ativyavaya•Ativyayama•Atirodana• Excessive exertion

II. CONCLUSION

In Ayurveda there is no direct correlation given by acharyas for Diabetic Retinopathy but the symptoms and samprapti can be somewhere correlated to Timira, Avarana, UdharwaRaktapitta and Ojakshaya Janya Awastha. Diabetic retinopathy is one of the leading causes of blindness in the world which can be managed by the earlier detection of the diabetes and early management and detection of the risk factors. " It is important to screen all diabetics annually by examining the fundus so as to initiate therapy as early as possible. Strict glycaemic control helps to stabilize the retinal changes.Taking into considerations of various ayurvedic texts the observations reveal that Ayurvedic approaches are helpful in managing Diabetic retinopathy successfully."

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