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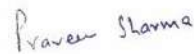
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A Conceptual Study on *Apasmara* (Epilepsy) and its Management with Ayurveda

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ABSTRACT

Today Apasmara (Epilepsy) is a major psychiatric problem worldwide. Numbers of patients are increasing day by day due to the incensement of unrecognized wound, cesarean delivery, mental stress & strain. Infectious diseases also play a major role in precipitation of Epileptic seizures. Conditions are worsened in developing countries like India, because many people with active epileptic seizures do not get proper treatment, irregular continuation of their medicines or leading to large treatment gap.

Many a disorder in the human may not be considered as ultimate, but may lead to much ill health and mental agony in the due course. *Apasmara* is one among them, which undoubtedly makes a man, unhappy and diseased. The individual undergoes a lot of distress, agony and grief leading to lack of performance at the personal as well as the social level. Its management protocol differs during and in between the seizure in the case of a disease like *Apasmara*, which are having *Vegas* as episodic. Ayurvedic treatments of *Apasmara* as described in *Ayurvedic* literatures may be divided as *Sodhana* or *Shamana*, depending on the severity of affection of the *Doshas* as well as the *Bala* (*body strength*) of the patient. The protocol includes *Snehana*, *Shodhana*, *Vasti*, *Nasya*, *Anjana*, *Dhoopana* and *Lepa*, as per the condition.

KEYWORDS

Epilepsy, *Apasmara*, *Ayurveda*, *Chikitsa*



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INTRODUCTION

The brain functions with the help of millions of neurons that transmit and receive signals. When the normal transmission pattern of signals in the brain is disturbed, seizures may occur that disturb consciousness, tonic clonic jerks in body limbs, salivation, abnormal body structures which are normalized within a short period of the time when the impulse in the brain is auto-normalized. When these physical changes occur due to disturbance of the electrical signals in one part of the brain called as partial seizures, when the nerve cells of the brain are affected more than one part of the brain are called as generalized seizures. Crude prevalence of *Apasmara* (Epilepsy) in India is 5.5/1000¹. Prevalence rate is more in urban areas and is commonest in the younger age groups. Onset of epilepsy is higher in children till the age of 10 years². Etiology (Table 1 and 2) of prevalence of Epilepsy are unknown in > 50% of the patients till date.

Regular origin of stress strain caused by the unemployment, unsatisfactory job, educational inequality, social inequality, family violence, unhealthy family atmosphere, predominance of electric gadgets in people like mobile, TV etc. are

leading nonmedical problems which precipitate Epilepsy.

In *Charaka Samhita* and *Sushruta Samhita* detailed descriptions are available about *Apasmara* like *Nirukti*, definition, etiopathology, prodromal symptoms, general symptoms, prevention and treatments. Epilepsy is described as '*Apasmara*' which means loss of *Smriti* i.e. Consciousness, which seems as a temporary one. The *Ayurvedic Samhitas* also described the factors like diet, life style, injuries; psychological factors etc. leading to its causation. Detailed description of the pre-ictal and ictal phases are also available. The components which get altered is *Smriti* (recollection), *Budhi* (awareness) and *Satwa* (mental strength)³. *Ayurveda* has given equal importance to psychological factors just like as to the somatic factors. Even though, the disease is included among the *Kayachikitsa* or general medical conditions; it is explained along with the psychiatric disorders. This explains the dual as well as the most practical approach of *Ayurveda*, in the management of *Apasmara*, which is now very well appreciated by the modern medical world. There is also a limitation in the diagnostic aspect, due to the transitory loss of consciousness of the subject during a seizure.



Charaka has classified *Chikitsa* into three types i.e. *Daiva Vyapaasraya*, *Yukti Vyapaasraya* and *Satvaavajaya*⁴. All these three are used as a combination accordingly to effectively manage the conditions like *Apasmara*. The *Chikitsa* of *Apasmara* can be *Shodhana* or *Shamana*, depending on the severity of affection of the *Doshas* as well as the *Bala* of the patient.

The protocol includes *Snehana*, *Shodhana*, *Vasti*, *Nasya*, *Anjana*, *Dhoopana* and *Lepa*, as per the condition.

Therapies like *Mantra* (chanting of Mantras), *Ausadhi* (any objects that believes to have magic power), *Mani* (wearing of various types of gems) *Mangal* (auspicious offering), *Balee* (sacrifice animals or bolus of rice i.e. pind for holy purpose), *Uphar* (gifts),

Houme (fire of various fragrance *dravyas*), *Niyama*, *Prayaschit* (surrendering at holy places towards the God for misbehaviors), *Upavasa* (fasting at particular days), *Swastivachana* (reading holy books), *Pranipaata* (bowing towards seniors spiritual authorities and getting bless by them) and *Gamandi* (*Teerthatana*-pilgrimage) etc. are in the treatment of *Apasmara* as a part of the *Daivya Vyapasraya* aspect⁵. *Satvavajaya* aims at improving the mental strength or *satvabala* of the individuals, by adopting the different methods of psychotherapy⁶. The improvement in *Satva bala* is very much helpful in avoiding the relapse in conditions like *Apasmara*.

Table 1 Etiology of *Apasmara* (Epilepsy)⁷

<i>Apasmaraa</i>	i.	The person whose <i>Doshas</i> are already vitiated and also are habitual intake of unwholesome and unclean food.
	ii.	The <i>Sattva Guna</i> of the mind is suppressed by <i>Rajas</i> and <i>Tamas</i> <i>Doshas</i> ..
	iii.	Heart is covered by vitiated <i>Doshas</i> .
	iv.	Mind is afflicted by vitiated <i>Mansika Bhavas</i> like <i>Chinta</i> (worry), <i>Kama</i> (passion), <i>Bhaya</i> (fear), <i>Shoka</i> (grief) etc.
Epilepsy	v.	Oxygen deficiency at the time of birth.
	vi.	Genetic factors
	vii.	Trauma, stroke, infections such as meningitis and encephalitis which affect the brain and abnormalities of CNS development.
	viii.	Various poisoning metals like Lead or carbon monoxide can cause epilepsy, also the persons who is regular habitual of drug addiction and overuse of certain antidepressants may suffer.
	ix.	Precipitating factors or triggering factors like various stressors of both psychological as well as physiological and sleep deprivation etc.
		x.

Pathogenesis and mechanism of *Apasmara* (Epilepsy)⁸: -

- Vitiated *Doshas* settle in the circulatory pathways like *Dhamani* (Artery) afflict the heart and cause



Table 2 Etiology of Epilepsy

Epilepsy	i.	Oxygen deficiency at the time of birth.
	ii.	Genetic factors
	iii.	Trauma, stroke, infections such as meningitis and encephalitis which affect the brain and abnormalities of CNS development.
	iv.	Various poisoning metals like Lead or carbon monoxide can cause epilepsy, also the persons who is regular habitual of drug addiction and overuse of certain antidepressants may suffer.
	v.	Precipitating factors or triggering factors like various stressors of both psychological as well as physiological and sleep deprivation etc.,.

disturbances of the normal functions.

Due to the above the person, thus afflicted with stupor and disturbance in the normal functioning of the brain and causes *Apasmara*.

• Epilepsy is characterized by uncontrolled functioning of the brain neurons as one part or all the part of the brain, thus malfunctioning of the

electrical activities of the brain, results of seizure. Various endogenous factors also influence the threshold for having a seizure. When this seizure threshold lowers a seizure occurs.

Signs and Symptoms⁹ (Table 3)

- Before epileptic seizures aura occurs in which the patients visualize non-existent forms, falls down and gets tremors.
- **Akshi Bhru Vikshepa** – Distortion of the eyes and eyebrows.
- **Lala Srava** – Salivation comes out from his mouth.
- **Hasta Pada Vikshepa**– Tonic colonic jerks in the hands and legs his hands and legs become convulsed. After sometimes when the fits are over, he regains consciousness as if he were getting up from sleep. The *Apasmara* is classified basically as 4 i.e., *Vataja*, *Pittaja*, *Kaphaja* and *Sannipataja*.

Table 3 Types of Apasmara, their Signs & Symptoms¹⁰

S.No.	Types	Symptoms
1.	<i>Vatika</i> – Due to <i>Vata Dosha</i>	Kampa – trembling, Pradeshad dantan – Gnashing of teeth, Phenodvami – vomiting froth, Shvasa – panting, rigorous breathing. The visual aura of the colour of rough, pink and blackish.
2.	<i>Paittika</i> – Due to <i>Pitta Dosha</i>	Peeta Asruk Roopa Darshana (He gets visual aura of yellow or blood- red objects). Peeta Phenanga, Vaktra Aksha (Yellowness of the froth, limbs, face and eyes) Trishn & Ushna (Suffers from morbid thirst and heat) Visualizes as if the whole world is set in fire
3.	<i>Shlaimika</i> – Due to <i>Kapha Dosha</i>	Shukla Phenanga Vaktra Aksha – White color of the froth, body, face and eyes, Sheeta – feeling of cold, Hrushtanga –horripilation, Guru – feeling of heaviness Pashyan Shuklani Roopani – patient visualizes the aura of white-objects. Muchyate Chiraat – He recovers from the fit after a long time.



4.	<i>Sannipatika</i> – Due to simultaneous imbalance of all the three <i>Doshas</i> .	Signs and symptoms of all the above mentioned 3 varieties are manifested. This type of epilepsy is incurable.
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Epilepsy is syndromic condition not a single disease, so classification (Table 4) is not easy but can be briefly classified as-

Table 4 Classification of Epilepsy

S.N.	Classification	Causes
1.	Partial (Focal) seizures	Partial or focal seizures occur when the electrical activity remains in the limited area of the brain. The seizures sometimes turn into the generalized seizures, which effect the whole brain. This type of seizure is more common in people of 1 year and older.
2.	Generalized seizures	-Generalized seizures are thought to arise at some point in the brain but immediately and rapidly engage neuronal networks in both cerebral hemispheres. Several types of generalized seizures have features that place them in distinctive categories and facilitate clinical diagnosis. --They are typical absence seizures, atypical absence seizures, generalized tonic clonic seizures, clonic seizures, tonic seizures, atonic seizures and myoclonic seizures.
3.	Focal, generalized or unclear	Not all seizure types can be designated as focal or generalized, and they should therefore be labelled as unclassifiable until additional evidence allows a valid classification. Epileptic spasms are such an example.
4.	Epilepsy syndromes	Epileptic syndromes are disorders in which epilepsy is a predominant feature, and there is evidence (e.g., through clinical, EEG, radiologic, or genetic observations) to suggest a common underlying mechanism. Some of the important epilepsy syndromes are Lennox- Gastaut syn- drome, Juvenile myoclonic epilepsy and Mesal temporal lobe epilepsy.
5.	Status Epilepticus	Status epilepticus refers to continuous seizures or repetitive, discrete seizures.

***Apsmar Chikitsa Sutra* (Line of Treatment)¹¹ (Table 5)**

In the *Apasmara* the mind and the heart of the patient, which was occluded by the vitiated *Doshas*, can be purified by the use of *Shodhana* therapy (purificatory process of *Panchakarma*) like *Vamana* (medicated emesis) in vitiated *Kapha Dosh*, *Virechana* (medicated purgation) in vitiated *Pitta Dosh* and *Vasti* (medicated enema) in vitiated *Vata Dosh* which causes above types of *Apasmara* (Epilepsy). After above purificatory process are completely done

than *Shamana* therapy (Alleviation therapy) should be given in proper mannernfor the cure of *Apasmara* (Epilepsy).

DISCUSSION

Apasmara can be compared with epileptic syndrome but all epilepsies cannot be considered as *Apasmara* and all *Apasmara* cannot be considered as epileptic seizures. An epileptic seizure with impaired/ loss of memory and consciousness can only be considered as *Apasmara*. It is a necessary to



advise the patient and relatives the first aid and necessary precautions. Classification

and treatment should be made depending on the nature of aura, movements and time

Table 5 General Treatment of *Apasmara*¹²:-

1.	<i>Yuktivyapashraya</i>	Uses of Medicines by two principles i.e, <i>Shodhana</i> and <i>Shamana</i> . Medicinal Preparations are - Single Herbs (Medhya Drugs) - <i>Brahmi</i> , <i>Mandukaparni</i> , <i>Ashwagandha</i> , <i>Jatamamsi</i> , <i>Shankapushpi</i> etc.
	<i>Daivavyapashraya</i>	includes <i>Mantras</i> (Chanting of Hymns), <i>Aushadha</i> (Sacred Herbs), <i>Manimangala</i> (Auspicious offerings), <i>Bali</i> etc
	<i>Satwavajaya-</i>	It aims to control of mind i.e. one should keep himself establish in his oneself after knowing real nature of soul and attaining height of spiritual wisdom
2.	<i>Anthaparimarjana</i> ,	<i>Vamana</i> , <i>Virechana</i> , <i>Basti</i> and <i>Nasya</i> .
	<i>Bahiparimarjana</i>	<i>Abhyanga</i> , <i>Utsadhana</i> , <i>Anjana</i> , <i>Lepa</i> and <i>Dhupana</i>
	<i>Shasthra pranidhana</i>	<i>Raktamokshana</i>
3.	<i>Vegavastha</i> treatments	<ul style="list-style-type: none"> • <i>Poorva roopa avastha- Nasya and Anjana.</i> • <i>Vegavastha- first aid and Dhupana.</i> • <i>Paschat vega avastha-</i>
	<i>Avegavastha</i> <i>Tretments</i>	<ul style="list-style-type: none"> • <i>Teekshna Vamana and Virechana</i> • <i>Nasya (Yastyadi nasya 5-6 drops), Anjana, Dhupana, Utsadhana, Seka</i>
4.	<i>Nasya</i>	• <i>“kapilānām gavām mūtram nāvanam param” (Inhalation of the urine of cow having reddish brown (Kapila) color is exceedingly useful for the cure of epilepsy)</i>
5.	<i>Utsadana Yogas</i>	<ul style="list-style-type: none"> • <i>Apetarakshasikushtadiyoga</i> • <i>Siddharthaka Agada</i>
6.	<i>Dhupa Yogas</i>	<ul style="list-style-type: none"> • <i>Palamkashavachadi yoga</i> • <i>Brahmiaindriyadi yoga</i> • <i>Nimbapatradi dhupa</i>
8.	<i>Anjana Yogas</i>	<ul style="list-style-type: none"> • <i>Kayastha varti</i> • <i>Mustavayastadivarti</i> • <i>Vrushikalibaladi varti</i> • <i>Manohvadhanjanam</i>
9.	<i>Shamana</i> <i>Yogas</i> <i>therapy</i>	<ul style="list-style-type: none"> • <i>Panchagavya Ghrutha,</i> • <i>Mahapanchagavya Ghrutha,</i> • <i>Kalyanaka Ghrutha,</i> • <i>Mahakalyanaka Ghrutha,</i> • <i>Paishachika Ghrutha,</i> • <i>Mahachaithasa Ghrutha,</i> • <i>Jeevaneeya Yamaka,</i> • <i>Bhrahmi Ghrutha,</i> • <i>Saraswatha Churna etc.,.</i>
10.	<i>Rasayana</i>	<ul style="list-style-type: none"> • <i>Rasayanas</i> should be admistered to the patients. In the management of <i>Apasmara</i> there is an important role for the adaptation of first aid, • <i>Counseling and lifestyle advises.</i>

duration of the seizures in epilepsy. While treatment of *Apasmara* is described in holistic approaches in *Ayurvedic Samhitas*. *Ayurveda* has a lot to offer in regards to the

disease *Apasmara* in curing, if the disease is new; in managing the chronic conditions, controlling and prolonging the *Vegantara Kala* and improving the quality of the life



of the patient by *Shodhana* and *Shamna* therapies as well use of *Rasayana*.

CONCLUSION

Epilepsy is a syndromic disease due to the fact of its variation, symptoms and treatments which come under the umbrella of *Apasmara*. An epileptic seizure with impaired memory, consciousness or awareness can only be considered as *Apasmara*. The definition of epilepsy holds good only to an extent in relation with that of *Apasmara*. The line of treatment should also be planned by keeping these factors in mind. Public should be made aware of the nature of the seizures and first aids. Even though *Ayurveda* has a vast treasure of *Yogas* for the management of *Apasmara* most of them are yet to be explored in the present day especially during an acute condition. In modern medicine there is not any concrete treatment of Epilepsy except surgical procedure, more researches need to be conducted in these areas. While with proper *Shodhana* (*Panchakarma* procedures) and use of *Ayurvedic* medicine along with modern medicine can be achieved good result.



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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 Lakshmiapati, 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 Lakshmiapati, 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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