

## AN OBSERVATIONAL STUDY TO EXPLORE THE ASSOCIATION OF LIFE STYLE AND DIABETIC RETINOPATHY

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### ABSTRACT

Diabetic retinopathy is a chronic progressive, potentially sight threatening disease of the retinal microvasculature associated with the prolonged hyperglycemia. The prevalence rate of diabetic retinopathy in type 2 DM was reported as 34.1% from south India. The presence of diabetic retinopathy is directly proportional to the duration of diabetes<sup>1</sup>. Ayurvedic science is unique and has stressed the importance of life style. Modifying the life style will surely help in controlling diabetes. By modifying the life style of diabetic patients we can delay or control the occurrence of diabetic Retinopathy. In this study diabetic retinopathy patients was selected and questionnaire prepared with a focus on life style which may possibly affect the visual health adversely according to Ayurvedic samhitas. The study was an observational study,50 cases of already diagnosed diabetic retinopathy patients was selected and their *ahara* and *vihara* was assessed using the questionnaire prepared keeping in focus of *Achakshushya* life style according to Ayurvedic samhitas. Similar 50 diabetic patients without retinopathy were selected and their life style assessed using the same questionnaire and compared. In this study it was found that patients with diabetic retinopathy were leading a life style which was *achakshushya* (adversely affecting eye health) than those without diabetic retinopathy. As eyes are seats of *pitha*, *pitha* vitiating *ahara's* and *viharas* will lead to diseases of eye. Diabetic patients following this type of life style will leads to diabetic retinopathy.

**KEY WORDS:** Life style, diabetic Retinopathy, *Achakshushya* *Ahara* and *vihara*

### INTRODUCTION

In recent years there is a rapid change in the life style of mankind, which altered our traditional style of living, dressing, food habits etc. People today eat according to their convenience without appreciating its nutritive value. Most of us are in a hurry and behind something or other so that we pay less attention to what we eat and its consequences. The human body is the same as that was thousand years before .But the diseases affecting the humans have

made some remarkable changes since the ancient period. Apart from the change in the external environment, the change in the life style can be held responsible for this change in the spectrum of diseases that affect the human population. As a result of this pivotal role of life style in causing diseases, a new category termed as life style disorders came into existence .In fact, the increased quantum of stress caused by the current life style can be seen as the real culprit in the occurrence of most of the modern day disor-

ders. The constant and indiscriminate usage of indriyas evokes various structural and functional discrepancies in them. Thus, in a wide category of diseases, change in life style can be considered as an important causative factor. The importance of the life style factors are increased when we observe that these are modifiable causes in comparison with some other factors such as genetic factors which are not modifiable.

Ayurvedic science is unique and has stressed the importance of lifestyle, since ayurveda is not only for curing diseases but also for protecting from disease it has explained 'dinacharya and rtucharya' in the beginning itself. Unwholesome some food and habits vitiates doshas and cause chronic disorders in long period of time under favorable conditions. It is difficult to predict the type of disease they produce because doshas produce a variety of disorders on different organs depending in strength and the strength of the organ or dhatu. We can say that chronic diseases are due to shortfall in life style and to be easy preventive measure is to follow healthy diet and habits. In *Ashtangahrdaya uttarasthana* (ch 16) *Vagbhata* explains that Persons who are fond of their eyes though healthy should always adhere to the following ;Grains such as *yava*, *godhooma*, *Sali*, *sashtika*, *ko-drava*, *mudga*, etc. which are old and which mitigate *kapha* and *pitta* mixed with more of ghee, vegetables and meat of desert animals having similar properties ,*dadima* ,*sita*(sugar) *saindhava*, *triphala*, *draksha*, and rainwater for drinking, the use of umbrella, footwear and resorting to therapies to eliminate the *doshas* in the proper ways. He should avoid suppression of urges, indigestion, over-eating, anger, grief, sleeping during day, keeping awake at night exposure to sunlight, foods and medicines which cause

heart-burn and constipation<sup>2</sup>. In the centre of the feet (soles) are situated two *siras* (veins etc) which are greatly connected to the eyes. These transmit the (effect of the) medicines applied over the feet in the form of bathing, massage, external application etc to the eyes. These (veins of the feet) vitiated by the accumulation of the mala (dirt), assault (by the weapons-stone and other hard substances) and squeezing (and other kinds of painful activities) bring about abnormalities of the eyes. Hence every person should always make use of the foot wear, massaging with oil and washing them well<sup>3</sup>.

In *Susrutha samhitha* the aetiology regarding the eye diseases is explained

*“ushnapithapthasya jalapraivesat  
Durekshanaatswapnaviparyayacha  
Prasakthasamrodhanakopasokhat  
klesabhighathadimaidunacha  
Suktharanalamlakulathamasha  
Niveshanadwegavinigrahacha  
Swedadathodhoomanishevanacha  
chardervighathatvamanadiyogat  
bashpagrahath sookshmanireekshanacha  
netrevikaranjanayanthidoshah”*

Entering into reservoirs of water (pond ,river etc) immediately after getting heated up by exposure of sunlight ,fire etc. seeing objects present very far, avoiding sleep, indulging in bouts of weeping, anger, sorrow and exertion ,(for long periods) injury (to eye), excess of copulation ,consuming *sukta* (vinegar) *aranala* (rice-wash) and such other sours (fermented drinks) foods prepared from *kulatha* (horse-gram) *masa* (black gram) suppressing the urges (of urine, faeces etc) excess sweating inhaling smoke, controlling bouts of vomiting or excess of vomiting, controlling of tears, observing minute objects (for longer time) by these causes doshas get aggravated and produce diseases<sup>4</sup>. Tridoshas are

responsible for the normal functioning of the body, when vitiated they lead to diseases. The vitiation of these doshas are by specific factors for individual organs. The factors responsible for the vitiation of doshas in the eye, which causes the derangement of the doshas and leading to diseases are; *Ahara viharas manas Roga's Aganthuka, Chikitsa janya*<sup>5</sup>.

**AIMS AND OBJECTIVES:** To observe the influence of life style in patients in the occurrence of diabetic retinopathy.

**PLAN OF THE STUDY:** Study was conducted in 50 patients who attended the camps for eye diseases at Calicut. A survey was conducted in 50 normal individuals who were randomly selected in the same geographical area.

**Criteria for selection**

Group 1: Healthy individuals with visual acuity 6/6. Age Group 20-60 (sample size 50)

Group 2: Individuals with diabetic retinopathy. Age group 20-60 (sample size 50)

**Exclusion criteria**

Group 1 : Individuals with any systemic diseases as well as those with ocular pathology.

Group 2 : Individuals with ocular pathology other than diabetic retinopathy

**Investigations:** Only those with Diabetic retinopathy, in whom diagnosis was made on the basis of test for visual acuity and ophthalmoscopy, were included in the study.

**Criteria for assessment**

a) **Diabetic retinopathy & normal individuals:** Already diagnosed cases of diabetic retinopathy were included in group 1. In group 2 only normal individuals with visual acuity of 6/6 were selected.

b) **Life style :** A questionnaire was prepared with a focus on the life style which may possibly effect the visual health adversely

**METHOD OF SAMPLING:** Purposive sampling

**STATISTICAL ANALYSIS:** According to Data collected the results will be evaluated and the significance of the study will be assessed using basic statistical analysis (descriptive statistics) and the relationship if any in, *ahara, vihara* in the causation of diabetic retinopathy will be assessed by appropriate tests like chi-square test and Anova etc.

**RESULTS AND DISCUSSION:** Diabetic Patients following *ahara* and *vihara* which leads to *kapha medodushti* and *Achakshya*, causes diabetic Retinopathy.

| Day sleep | Diabetic Retinopathy |       | Normal Individuals |       |
|-----------|----------------------|-------|--------------------|-------|
|           | No                   | %     | No                 | %     |
| Yes       | 40                   | 80.0  | 11                 | 22.0  |
| No        | 10                   | 20.0  | 39                 | 78.0  |
| Total     | 50                   | 100.0 | 50                 | 100.0 |

Table.1 Majority of the retinopathy patients were doing day sleep, causing kaphamedo dushti.

| Exercise | Diabetic Retinopathy |       | Normal Individuals |       |
|----------|----------------------|-------|--------------------|-------|
|          | No                   | %     | No                 | %     |
| Yes      | 14                   | 28.0  | 43                 | 86.0  |
| No       | 36                   | 72.0  | 7                  | 14.0  |
| Total    | 50                   | 100.0 | 50                 | 100.0 |

Table.2 Lack of proper exercise was observed in most of the diabetic retinopathy patients

| Prakriti    | Diabetic Retinopathy |       | Normal Individuals |       |
|-------------|----------------------|-------|--------------------|-------|
|             | No                   | %     | No                 | %     |
| vatakapha   | 15                   | 30.0  |                    |       |
| kapha pitta | 18                   | 36.0  | 7                  | 14.0  |
| pitta vata  | 17                   | 34.0  | 43                 | 86.0  |
| Total       | 50                   | 100.0 | 50                 | 100.0 |

Table3:While analysing prakriti, pittapradhanaprakriti was found to be more susceptible for Diabetic retinopathy

| Head bath  | Diabetic Retinopathy |       | Normal Individuals |       |
|------------|----------------------|-------|--------------------|-------|
|            | No                   | %     | No                 | %     |
| cold water | 7                    | 14.0  | 50                 | 100.0 |
| hot water  | 43                   | 86.0  |                    |       |
| Total      | 50                   | 100.0 | 50                 | 100.0 |

Table 4:Most of the retinopathy patients were old; they were using hot water for bath

| Oil Application | Diabetic Retinopathy |       | Normal Individuals |       |
|-----------------|----------------------|-------|--------------------|-------|
|                 | No                   | %     | No                 | %     |
| yes             | 22                   | 44.0  | 43                 | 86.0  |
| no              | 28                   | 56.0  | 7                  | 14.0  |
| Total           | 50                   | 100.0 | 50                 | 100.0 |

Table 5:Most patients with diabetic retinopathy were not using oil application for head

| Hobbies  | Diabetic Retinopathy |       | Normal Individuals |       |
|----------|----------------------|-------|--------------------|-------|
|          | No                   | %     | No                 | %     |
| COMPUTER | 10                   | 20.0  |                    |       |
| TV       | 34                   | 68.0  | 43                 | 86.0  |
| STICHING | 6                    | 12.0  | 7                  | 14.0  |
| Total    | 50                   | 100.0 | 50                 | 100.0 |

Table 6Most of the retinopathy patients were watching TV for long time.

| Food Habits | Diabetic Retinopathy |       | Normal Individuals |       |
|-------------|----------------------|-------|--------------------|-------|
|             | No                   | %     | No                 | %     |
| VEGETERIAN  | 24                   | 48.0  | 16                 | 32.0  |
| MIXED       | 26                   | 52.0  | 34                 | 68.0  |
| Total       | 50                   | 100.0 | 50                 | 100.0 |

Table 7

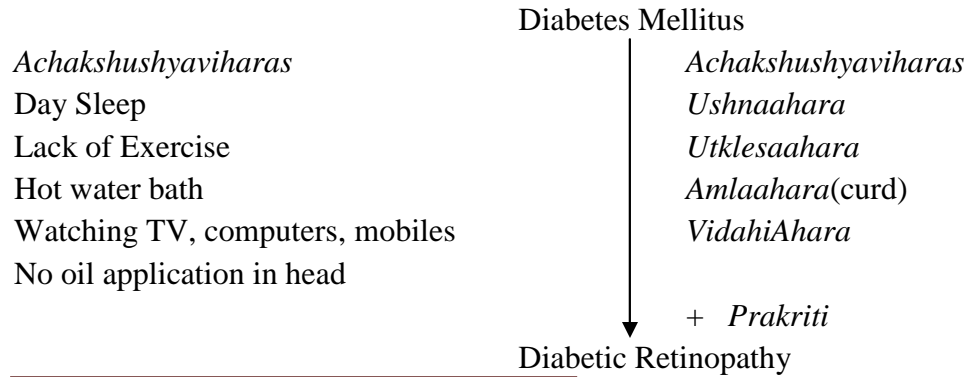
| Curd          | Diabetic Retinopathy |       | Normal Individuals |       |
|---------------|----------------------|-------|--------------------|-------|
|               | No                   | %     | No                 | %     |
| OCCASSIONALLY | 38                   | 76.0  | 24                 | 48.0  |
| DAILY         | 12                   | 24.0  | 26                 | 52.0  |
| Total         | 50                   | 100.0 | 50                 | 100.0 |

Table 8

| Bakery        | Diabetic Retinopathy |      | Normal Individuals |      |
|---------------|----------------------|------|--------------------|------|
|               | No                   | %    | No                 | %    |
| NO            | 1                    | 2.0  | 7                  | 14.0 |
| OCCASSIONALLY | 33                   | 66.0 | 43                 | 86.0 |
| DAILY         | 16                   | 32.0 |                    |      |

|       |    |       |    |       |
|-------|----|-------|----|-------|
| Total | 50 | 100.0 | 50 | 100.0 |
|-------|----|-------|----|-------|

Table 9: Most of the diabetic patients were using Achakshushyaahara's like curd, mixed diet, tea, bakery items etc. Along with vihara's like watching TV, hot water bath leadsto pitta vitiation in the eyes, and some time along with kapha causing diabetic retinopathy.



### CONCLUSION

As eyes are said to be the seats of *pitta*, *pitta* vitiating *ahara* and *vihara* will lead to diseases of the eyes i.e., in this study diabetic retinopathy, Diabetic patients should give importance to their life style, since they are prone to get diabetic retinopathy. They should avoid *vihara* like day sleep, lack of exercise, watching TV, computers, mobiles etc., *ahara* like *vidahi*, *amla*, *utklesa*, *virudha*, *ushna*, etc. which are *Achakshushya* and which will lead to *pitta* vitiation and leads to diabetic retinopathy.

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Source of support: Nil  
 Conflict of interest: None Declared