

## STRESS AND DIABETES

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### ABSTRACT

*In modern science Diabetes Mellitus is mentioned as a metabolic and lifestyle disorder which is caused due to impaired carbohydrates, fat and protein metabolism. In Ayurvedic text Prameha roga is mentioned which is very similar to Diabetes. Prameha roga comes under Ashtomahagada. Unique feature of Prameha roga is the involvement of Tridoshas and multiple Dhatus, Ojas etc. While reading to Ayurvedic literature the Hetus of Prameha roga can be further divided into Aahariya hetu, Vihariya hetu and Mansik hetu and where these Hetus come in day to day life. Among all these causes one cause stress is discussed here in details.*

**Keywords:** Diabetes mellitus, metabolic disorder, hetu, stress.

**AIM:** To study the Hetu mentioned in Ayurvedic text and understanding where it comes under today's lifestyle.

### OBJECTIVES:

1. Ayurvedic literature of Hetu of Prameha Roga.
2. To discuss where these Hetu in day to day life.

### INTRODUCTION:

As we are very much aware about that the present era there is the alarming rise in the number of somatic disorders which find their causes primarily as mental. Because of changes in family system, economy, urbanization, industrialization, westernization all these factors drives out our senses without regulation of mind. It is the need of time that some preventive aspects should be focused scientifically. This study may give some insight into the factors which are causing the disease lie DM (Diabetes Mellitus) in alarming rate.

### METHODOLOGY:

The literature from authentic Ayurvedic books and Modern literature and research from internet is collected. The paper is designed to show the Hetu mentioned in Ayurvedic text and where it comes under today's lifestyle. And by avoiding these it one can able to prevent Diabetes.

### LITERATURE AND DISCUSSION:

Madhumeha is correlated with DM. It is one among 20 types of Prameha roga and it is Vata predominant in nature. Ayurveda believes that it occurs mainly due to Medoodushti.

According to Acharya Charaka Manasdoshas Raja and Tama have a very bad effect in the body. In Vtika Prameha causes – Shok (grief), Bhaya (fear), Udvega (anxiety) and Chinta (worry).

In Charaka Trividha Kukshi Adhayay and Sushruta Ajiranadhikar it is stated that the state of Manas (psyche) is not able to digest the food even if it is taken in normal quantity and quality and produces Aama.

There are not only the various dietary factors that direct the human body toward health or disease, but also many other factors including state of mind and environment during meal. It indicates that even the food taken in balanced quantity, does not get digested due to Kama, Krodha, Lobha and Moha etc.

### Manashetus:

Anxiety, anger, worry, grief and similar other stress producing factors. Acharya Charaka has also emphasized that anxiety, anger, worry, grief and similar other stress producing factors lead to development of Prameha.

In today life it may be due to loss in business, Anger on co-worker, office work load, fear, targets given by boss, insecurity etc.

It is supported by study where in diabetes was induced by stress in albino rats and their blood examination showed increase rate of catalase activity, suggesting the acceleration rate of cell injury and free radical generation, which in turn is a precursor to diabetes.

### **Stress:**

Diabetes was considered as a disease of the wealthy in ancient India, and was known as Madhumeha it was observed that ants were attracted to the urine.

The ancient Greek coined the term 'Diabetes' which means excessive urination with dehydration, but neither they nor roman appreciated that the urine contains sugar. It was considered as a kidney disease until the 18<sup>th</sup> century.

When the stress occurs, the body takes the action by the activation of fight or flight response. In this response the level of various hormones shoot up. Their net effect is to make a lot of stored energy that is glucose and fat available to cells. These cells are primed to help the human body to get away from the situation.

The sources of stress can be physical like injury or illness or can be mental like problems in day to day life like at job place or at home etc.

### **Stress and physiology of hyperglycemia:**

1. Stress acts on Hypophysial axis and stimulate anterior pituitary which act on adrenal cortex as well as release of growth hormone is stimulated which ultimately leads to hyperglycemia.
2. Stress also stimulates adrenal medulla and release of catecholamine's, which stimulates adenylyl cyclase CAMP path way also get stimulated therefore due to activation of Triglycerides the metabolism of FFA increases and due to loss of glucose utilization there is reduction in the action of GLUT2 receptors which ultimately result in reduction in the insulin from B- cells and causes hyperglycemias.
3. Due to stressful environment people use some drugs and becomes addicted to it. Increase of Caffeine use causes over tendency of food intake which affects the liver results in activation of phosphorylase and results in hyperglycemia.

All the above description suggests that the stress can cause the hyperglycaemic condition in the body which may lead to Diabetes if the phenomenon is not stopped. This is all about the cause and its prevention.

If we see in diabetic patient it is also noted that stress worsens the prognosis also. Stress can be a major barrier to effective glucose control. Management of diabetes is a lifelong process. This can also add the stress in daily life.

Stress leads to activation of fight or flight response. This response elevates hormone level in the body. During this response the body releases Adrenalin and cortisol into bloodstream and respiratory rate increases. This extra blood glucose level directs the blood to the muscles and limbs allowing the person to fight the situation. The body may not be able to process the glucose release by firing nerve cells if the person is diabetic.

And if person can't convert the glucose into energy, it builds up in the blood stream. This causes the blood glucose level to rise.

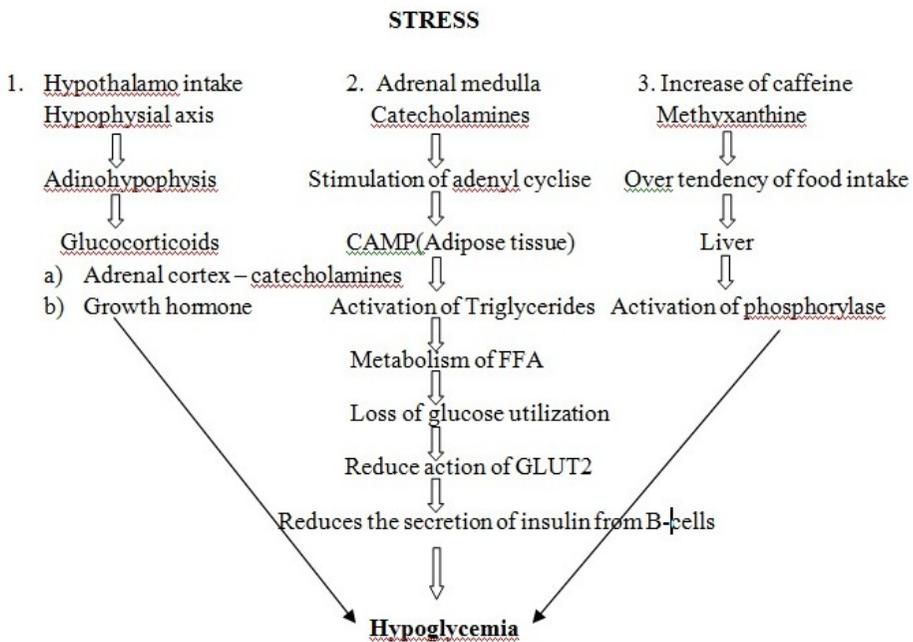
How stress affects Diabetes:

Many sources of stress are long term threats like it can take many months to recover from surgery. Stress hormones that are designed to deal with short term danger stay turned on for a long time. As a result, long term stress can cause long term high blood glucose level.

Many long term sources of stress are mental. The mind of people sometimes reacts to a harmless event as if it were a real threat, like physical stress, mental stress can be short term : from taking a test to getting stuck in traffic jam. It can also be long term, from working for a demanding boss to taking care of an aging parent.

Diabetes is the perfect breeding ground for anger. Anger can start at diagnosis with the question 'Why me' this may be an anger circle.

With the mental stress, the body pumps out hormones to no avail. In people with diabetes the fight or flight response does not work well. Insulin is not always available to let the extra energy into the cells, so the glucose level shoots up in blood.



In people with diabetes, stress can alter blood glucose level in two ways -

1. Under stress peoples may not take good care of themselves. They may drink more alcohol or exercise less. They may forget or not have time to check their glucose level or plan good meals.
2. Stress hormones may also alter blood.

Some studies suggest the effects of stress on glucose levels in animals and people.

Diabetes mice under physical and mental stress have elevated glucose levels.

The effects in people with type 1 diabetes are more mixed. While most people are with mental stress others glucose level can go down. In people with type 2 diabetes mental stress such as illness or injury causes high blood glucose level in people with either type of diabetes.

#### Reducing mental stress:

1. For prevention of occurrence of disease by educating the bad effect of metal behaviours.
2. In diabetes for effective control of the disease.

##### A) Make changes:

1. Start exercise
2. Start new hobby
3. Take involvement in social life.

##### B) Copying the style -

1. Have a problem solving attitude. Try to change the situation to get rid of stress.
2. Some people take themselves into accepting the problem. They say to themselves "this problem isn't so bad after all."

Copying these two attitude will definitely help for reducing the stress.

##### C) Learn to relax:

##### D) Making friends in a support group can lighten the burden of diabetes related stress.

#### RESULT AND CONCLUSION:

Today's lifestyle pattern's will leads to several metabolic disorders. Sidhant of 'Hetu' mentioned in our Samhitas exactly matches with whatever is going on in 'Modern Lifestyle' pattern.