

## ROLE OF MANOBHITAPKARA BHAVAS (STRESS) IN THE ETIOPATHOGENESIS OF *MADHUMEHA* (DIABETES MELLITUS)

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### ABSTRACT

An enquiry into formation of *Ama* by *Manobhitapakara Bhavas* has to be postulated which in turn may produce chronic metabolic disorders. Somatic abnormalities are many a time resulted as an outcome of abnormal psychic interaction on the body. This research article postulating the role of *Manobhitapakara Bhavas* in producing *Ama* and thereby creating *Madhumeha* a giant metabolic complex has been designed. Studies conducted by modern biology proved that in the causation as well as complication of many metabolic disorders free radicals have a major role. This parallel in outlook regarding *Ama* and free radicals made us to think about a causative factor of free radical in terms of *Manobhitapakara Bhavas*. Stress controls the insulin secretion. Change in the family system, economy, community

structure, increased pace of migration, urbanization, industrialization and westernization have significantly influences more too human psychology than the physical body. This is otherwise expressed as stress reaction / fright-flight reaction / stress effect or *Manobhitapa*.

**KEYWORDS:** Stress, *Manobhitapa*, *Ama*.

## INTRODUCTION

As man has entered in 21st century with modernization in each and every walk of life, he has also paid for it by living in several stressful psychological conditions. The response to the psychological conditions varies person to person because each has different psychic and bodily constitution. However, these stressors play certain role in the development, progression, prognosis as well as management of the disease. This stressful life-style affects one's mind and homeostasis of body by several psychosomatic mechanisms and causes many psychosomatic disorders. The '*Madhumeha*' (Diabetes Mellitus) is one of such diseases.

The disease Diabetes Mellitus has varied wide aspect of its origin, progression and development. Today's knowledge about the disease has increased to a great extent but it is not even the half way of total understanding. It is so because it has multi factor involvement and hence more work has to be done in the details of the disease.

In *Charak Prameha Nidan & Chikitsa* and *Shusruta Prameha Nidan*, *krodha* (anger) is among one of the etiological factors in *paittika prameha*<sup>[1]</sup> and *shoka* (grief), *bhaya* (fear), *udvega* (anxiety) and *chinta* (worry) for the *vatika prameha*<sup>[2]</sup> (*Madhumeha* is among *vatika prameha*), which leads to derailment of glucose metabolism. According to *Shusruta Ajiranadhikar* and *Charak Trividhakushiya Viman*, disturbed state of psyche (*Manas*) is not able to digest the food even if taken in normal quantity<sup>[3]</sup> and leads to formation of *Ama*. The above description is related with the gastric digestion, but it is said that the *jatthargni* only nourishes the *dhatvagni* and *bhootagni*.<sup>[4]</sup> So the disturbed psychological state also disturbs the *dhatvagni* and *bhootagni*. In anxiety and stress prone individuals the *samprapti* (pathogenesis) starts from the vitiation of *agni* (bio-fire) leading to *amotpatti* and that *Ama* when settles in *basti* (Urinary tract) leads to *prameha*.

Health as it is evident is an outcome of multi-factorial, multilevel organism of consciousness, senses, mind and body. These factors are continuously interacting in different planes so as to produce different quantum and quality of multitude of experiences. Illness / sickness are also

such an experience. Somatic abnormalities are many a time resulted as an outcome of abnormal psychic interaction on the body.

Present era is witnessing an alarming rise in the number of somatic diseases which find their cause primarily as mental. Our standards of conduct determine the type of behaviour we consider praise worthy or objectionable.

These are affected from changes in family system - economy - community structure, increased pace of migration, urbanization, industrialization, westernization etc. These factors will drive out our senses without the regulation of mind. Hence mind is suppressed under the influence of *indriyas*. The manhood is solely depended on mind; it's merely not remaining as true with time respect. The sustained modification of *Manas* according to the above so called physiological desires makes continuous impression on it. This opens a vast field of pathogenesis.

At our unconscious level of mind all of these impressions of adverse experiences are recorded, an attachment may manifest up to death if intensity and repetition is there. Repeated adherence to these may create a complexity in *kama*, *krodha* etc like *Manasika Bhavas*; which are in an aggregation called as *Manobhitapakara Bhavas*. This terminology is represented by *Charakacharya* in the context of *Ama* (Biological toxins) *Utpatti* (production). Further to this period of repeated affection reaches up to such a weak state of control that deplete resistance to one kind of *Manasika Bhava* create less chance of resisting other *Bhavas* also. It draws consequent behavioural changes and finally become responsible for the alteration of blood chemistry by creating a hazardous intermediate metabolite called *Ama*. Production of *Ama* by evoking immunological disequilibrium again alters the *Manasika Bhavas* and *Dosha Dhatumalas* in a reverse way. In many of the organic and metabolic disorders the role of *Manobhitapakara Bhavas* has been elaborately explained in the *Ayurveda* classics. But how they are developing into full-fledged pathology having a somatic route is seldom explained in this context. It is well known that worry, anxiety, fear kill millions and millions of RBC every day. (Fear, anger, jealousy, envy, hatred etc. are considered as forerunners of disease and messenger of death. Every disturbing, depressing thought that enters the brain has a simultaneous effect on every cell of the body and tends to produce diseases. Men, women and children get diseased and die around us everywhere as a result of pathological thought, a deranged function of *Manas* what here it is being called as *Manobhitapa*.

So far as etiological classical references are concerned *Ama*, *Madhumeha* and *Manobhitapakara Bhavas* have some common factors to account for that.

**Manasa-** *Manas* one of the eternal reality which mean - to think, to believe, to imagine, suppose or conjecture. It indicates to the entire internal organs of perception, the faculty or instrument through which there is the exchange of thinking or by which objects affect the soul. Knowledge is perceived by the proper combination of *Atma*, *Manas*, *Indriya* and *Artha*<sup>5</sup>. Without the completion of that channel, knowledge will not be perceived. Here *Manas* is the bridge in between materialistic and spiritual world. Without the *Manas* it is virtually impossible to observe the presence of *Atma* or the vital activities of the person. *Manas* is a special internal organ by which knowledge of *Sukha*, *Dukha* and the process of *Sankalpa*, *Chintya* etc are obtained is termed as *Antahkarana*. As far as the perceptions of the objects are concerned, help of *Manas* is essential for all other sense organs.

The position of the mind between the *Atma* and sense organs are described as controlling cord (*Pragraha*) of the horses by *Kathopanisad* like- "Know the soul as the rider and the body as the Chariot to which the senses are yoked like horses. The mind works like the reins with the Charioteer.

*Ayurveda* defines *Ayu* (life) as the combined state of *Sharira* (body), *Indriya* (senses), *Satva* (psyche) and *Atma* (Soul)<sup>6</sup>. In this way, *Manasa* is chiefly responsible for perceiving good healthy life and signs of good health which is mentioned in *Sushruta Samhita*.

A healthy person is one whose humors (*Doshas*) and metabolic state (*Agni*) are in equilibrium, whose functional activities of the tissues and excretory systems are in balance and the soul, senses and mind feel well. Therefore, stress-strain less and cheerful state of mind is necessary for the good healthy life.

**Definition of *Manasa*:** A substance, which is responsible for the presence or absence of the knowledge, is called *Manasa*.<sup>[7]</sup> A substance which establishes the contact between the soul and body and which regulates the functions of the *Indriyas* is defined as a *Manasa*.<sup>[8]</sup>

**Synonyms of *Manasa*:** *Sattva*, *Chetah*<sup>[9]</sup>

**Characteristic of *Manasa*:** *Anuttvam* (atomic dimension) and *Ekattavam* (oneness) are considered to be the two characteristic of the *Manasa*.<sup>[10]</sup>

**Object of *Manasa*:** *Chintya* (things requiring thought), *Vicharya* (consideration), *Uhya* (hypothesis), *Dhyeya* (emotional thinking), *Sankalpya* (determination) or whatever can be known by mind is regarded as its subjects.<sup>[11]</sup>

**Functions of *Manasa*:** *Indriyabhigraha* (control of sense organs), *Svasyanigraha* (self-restraint), *Uha* (hypothesis) and *Vichara* (consideration) represent the action of mind.<sup>[12]</sup>

### Physiology of *Manasa*

**Physiology of *Manasa* can be divided into three stages<sup>[13]</sup>**

1. Perception (Cognitive or Sensory)
2. Discussion and Determination
3. Stimulation or Initiation (Conation or Motor Reflex)

***Manas and Sharira*:** In Ayurveda, various *Manasa Bhavas* (psychological conditions) like *Chinta* (worry), *Udvega* (anxiety) *Lobha* (greed), *Shoka* (grief), *Bhaya* (fear), *Krodha* (anger) etc. are described. When these *Manasa Bhavas* (emotional states) cross the physiological limit, they are considered as *Manasika Vikaras*, which is pathological state adversely affecting the mind and the body. So, *Charaka* has suggested controlling these *Manasika Bhavas* to maintain physical and mental well being.<sup>[14]</sup>

It is the creator and enjoyer of all happiness's, miseries and of all impulses. In fact man is nothing but what the mind makes him. As a worm creates its cocoon, the mind builds its body for the realisation of its desires. It creates its own body by its own imagination as a potter creates a pot. The body is a form that has been assumed by the *Manas* through intense desire and made visible through repeated attempts. The body takes after and depends upon what the mind is set on. Both *Manas* and *Sarira* meet themselves on a same platform called *PanchaMahabhuta* (a scientific platform of Ayurveda). Perhaps it is the cause for why different *Ayurvedic* classics reflect the psychosomatic approach through anatomical, physiological, pathological, aetiopathological, clinical and therapeutic description.

Again concept of evolution, *Purusha*, definition of *Swasthya* and *Vikara*, *Sharira-Manas Doshas*, *Prakriti*, concept of psychic factors in aetiology and symptomatology of a large numbers of disease, *Sadvritta*, *Achara Rasayana* are also indicate the psychosomatic approach. The two main constituents of living being called *Manas* and *Sharira* are so inter-

related and inter dependent that there is nothing exclusively psychic or exclusively somatic. Everything is psychosomatic.

**Manasika Doshas:** *Raja* and *Tama* are two *Manasika Doshas*. They are having unbreakable relation with each other because *Tama* cannot act without the help of *Rajas*.<sup>[15]</sup> *Manasika Doshas* generally vitiates *Manasa* leading to various psychological disorders. Thus, *Raja* and *Tama* must be sufficiently strong to vitiate *Manasa*, and then only the respective *Manasika Vyadhi* can be produced.

#### **How Manas acts?**

*Indriyas* receive *Arthas* if stimulated by *Manas*. This perception needs a chain of *Artha-Indriya-Manas-Atma* and which is called as *Uha* or *Alochana* or *Nirvikalpaka Jnana*. After this the procedure of actual analysis starts. For every Karma which is to be carried out by any *Dravya* needs appropriate *Gunas* in it i.e. potential energy of every entity is necessary to carry out the desired effect by converting into kinetic energy. Similarly in the case of *Manas* due to its two main properties i.e. *Anutva* and *Ekatva*, it holds the capacity (potential energy) termed as *Arthas*. This gives the determination to the perception. So the journey from perception to determination i.e., *Adhyavasaya* or *Nishchayatmaka Buddhi* is the first half of the action of *Manas* to an *Artha*.

This is the ultimate function of *Manas* related to *Jnanendriya* only. After the determination of knowledge perceived by *Jnanendriya*, the first half of the action of *Manas* becomes completed. According to the necessity desired reflexes or reactions are to be carried out further like - *Manas* with help of determine knowledge i.e. *Nishchayatmika Buddhi* initiates or stimulates for the further action to be carried out by *Karmendriya*. The independent *Manas* action concern with *Buddhi* i.e. intellectual faculty is the prime and major part of healthy and successful life. Before to it, there are the interchanges at metaphysical level and after to it interchange at body level occurs. Hence *Manas* act through three levels.

- Metaphysical level - *Atma*
- Intellectual level - *Buddhi, Ahamkara*
- Body level - *Vata, Pitta, Kapha, Rakta, Oja* etc.

#### **Manasa and Tridosha**

- **Manas and Vata**

All mental activities are imbalanced when *Vata* become vitiated like - speech incapability, improper perception of taste and smell, deletion of enthusiasm etc. Again when *Vata* increases, the manifestations are like lack of perception of taste. Diminish of vision numbness, delirium, fearness etc. *Vata Prakriti* persons show the fluctuation of activities and quickness of response to stimuli.

- **Manas and pitta:** *Pitta* as we know it as a neurohumour, responsible for all sorts of changes in the body. *Sadhaka* type of *Pitta* staying in *Hridaya* (heart) checks *Tamo Dosha* and by attacking the vitiated *Kapha* helps *Manas*. By its help, *Manas* remaining there (at *Hridaya*) can capable to act over the *Indriyas*. According to *Maharsi Shusruta*, *Sadhaka Pitta* is the main factor which facilitates all desires of the individual. Generally, *Pitta Prakriti* persons are highly sensitive and speedy active in nature. They become more arrogant, possessing more ego, fearlessness, claim unduly and proudly.

- **Manas and kapha:** Normal mental functions like firmness, enthusiasm, knowledge, intellect, forgiveness, greedlessness, softness are under control of *Kapha* with the interaction like *Tamas* (the *Niyamatmika*). *Kapha* during the vitiated period produces many types of disorders at the level of *Manas*. During the state of *Vridhhi*, it encroaches to the *Marma Sthana*, influencing *Buddhi* and *Smrti*; hampers the normal function of *Manas*. As well as in case of *Kshaya* (decay), it represents the shabbiness, lassitude, ignorance, lack of skill, courage and patience.<sup>[16]</sup>

**Manobhitapakara Bhava:** It is obvious that there is very close contact with one's internal (*Deha Desha*) as well as external world (*Bahya Desha*). When there is something bad at internal world it results an exertion to *Manas*. But with a practical approach the demographic alterations accompanied with the change in the family system, economy, community structure, increased pace of migration, urbanization, industrialization and westernization have significantly influences more too human psychology than the physical body. This is otherwise expressed as stress reaction / fright-flight reaction / stress effect / *Manobhitapa*. Where there is a continuous imbalance in the proportion of *Sattva-Raja-Tama* to respected individual, total thinking pattern will be changed. Consciousness to the present situation is lost. The status where each and individual action done by *Manas* is actually not known by itself (by the *Manas*). *Manas* itself forgets about the *Kartavyata-Akartavyata*, cannot able to

calculate about its own capacity as well as the capacity of *Artha*, *Indriya* etc. Always thinks of some impending disasters.

### **What are the *Bhavas* it comprises?**

It is not only the various components of the diet that direct the human body towards health or disease, but also several other factors including state of mind and the environment during meals. It means even wholesome food taken in proper quantity does not get digested due to *Kama*, *Krodha*, *Lobha*, *Moha* etc. The diet which is we use to take though Panchabhautika, it able to nourish or influencing the *Manas*.<sup>[17]</sup> It is told that as our *Ahara* (food) changes *Manas* also changes. *Maharsi Charak* has also enlisted mental cause like *Shoka* & *Manodvega* (anxiety & excitement) as predisposing cause of *Madhumeha*.

### **Oxidative Stress – A key factor in the pathogenesis of DM**

Stress controls the insulin secretion. Plasma lipids, proteins & carbohydrates are protected against modifications by oxidants; by the antioxidant defence system. The antioxidant system consists of the enzymes, glutathione peroxidase (GPX), superoxide dismutase (SOD) & catalase as well as hydrophilic antioxidants such as ascorbate,  $\alpha$ -tocopherol,  $\beta$ -carotene & reduced glutathione. Lipoprotein particles carry lipophilic antioxidants such as tocopherols & carotenoids. All these react with ROS or block free radical chain reactions. These species are maintained at very low steady state concentrations by the antioxidant system but when their production increases, they may overcome the scavenger capacity of the antioxidant system, resulting in an “oxidative stress” which damages the cellular tissues<sup>18</sup>. Oxidative stress is thus defined as a metabolic state where the cellular oxidative reactions are out of control.  $\beta$ -cells of the pancreas & vascular endothelium are very sensitive to oxidative stress. Hence oxidative stress plays a significant role in the development of D. Mellitus & its vascular complication. Free radical production has been reported to be increased in patients with DM & it has been suggested that hyperglycaemic may directly contribute to the generation of oxidative stress. There is growing evidence that oxidative stress may play an important role in the aetiology of diabetic complications. Studies have shown that free radical production is increased by the hyperglycaemia – accelerated non-enzymatic glycosylation of proteins, monosaccharide autooxidation and polyol pathway activity as well as by reduced antioxidant reserves.

**What Is *Ama*?**

In *Madhumeha* there is accumulation of waste matter in body as *Ama*. *Acharya Vijayarakshita* has cited a number of definitions and descriptions of *Ama* obviously quoting various contemporaries as follows<sup>[19]</sup>

a. The food which is not properly digested and is stagnated, then the outcome of such digestion is known as *Ama*.

b. The *Ama-rasa* which is not properly formed in the *Amashaya* due to the impairment of *kayagni* is known as *Ama*.

c. The undigested *Ama-rasa* possessing foul odour and is highly viscous deprives the body of its nutrition and in consequence causes *sadana* (fatigue) etc. is known as *Ama*.

**Pathogenetic role of *Ama* in *Madhumeha*:** Though this disease present a problem of urinary tract but actually total body cell get disturb. Specifically, there is the disturbance in fat metabolism. *Kleda* or fluid balance in the body is disturbed. Elementary proportion of fluid is get disturbed. Due to the presence of *Ama* proportion between *Sara* & *Kitta* get disturbed. During the *Sara-Kitta vibhajana* at physiological state purity to *Sara* and *Kitta* is 100% of each. It means *Sara* should prepared 100% and *Kitta* also 100%. Hence, both elimination of *Kitta* from body and utilization of this type of *Sara* are harmful or painful to body. Another thing that when it gradually affect to neighbourhood *Dhatu* again, what type of imbalance in *Sara-Kitta* proportion may establish, one cannot imagine. It is the difference but, *Meda* and *Abaddha Meda*. What means to say that both are *Guru-Shita-Snigdha* but one is *Shuddha* and another is *Ashuddha*. This is the actual cause behind the *Daurbalyata*, *Angasada*, *Alasya*, *Klama*, *Shrama*, high incidence of depression, repeated infection, etc. Again with the above situation also people follow the so called eating, habit three meals/day, each meal must be filled of required energy. Persons remaining in a stressful condition such as death of parents, severe illness, during mental depression, if follow this type of eating habits, vicious cycle of *Ama* production takes place. All most all *Kapha* vargiya *Dosa Dusyas* get vitiated due to same nature of *Ama*. It cause *Dhatu Shaithilya* in the body.<sup>[20]</sup> If *Kleda* is vitiated urine quantity is increased and the *Dhatu*s are also showing out with urine. In a long term *Mutravaha Srotas* (nephrons & tubules) are obstructed and diabetic kidney disorder (nephritis) takes place. There is a special type of carrier substance available at luminal wall of tubular epithelium at the proximal end of convoluted tube. It combines with glucose of tubular fluid to form reversible carrier glucose complex which then migrate towards the

cytoplasmic end of the membrane and splits up. The free glucose is then delivered to the cytoplasm. The free carrier again starts the above work. In case of higher glucose concentration carrier system fails and glycosuria takes place.

## DISCUSSION AND CONCLUSION

*Manas* is the actual creator, regulator, re-creator of all bodily constituents. The perfect harmony of *Manas* is responsible for the perfect harmony of body. Hence, man is nothing but what the *Manas* makes him. *Manas* and *Sharira* separately cannot be designated or identified. Both are interdependent and interconnected. But most of the perception though induces by *Manas* hence, it roles as prior to body. Any type of discordant thought, feeling, and emotion must pay the penalty through the production of discord at body level.<sup>[21]</sup>

Altered external living sources like demographic alteration, change in family system, economy community structure, increased pace of migration, urbanization, industrialization, westernisation have a potent role to induce the pathogenesis at *Manasika* level as well as body level by the faulty pattern of adaptation. Repeated attachments with Kamadi *Bhavas* / stress are the potent cause for morbidity and mortality rate of *Madhumeha*. Not only for the cause but also it is responsible for the complication. Affection of *Manobhitapakara Bhavas* can alter the body digestive and metabolic system not only during the taking of *Ahara*, it also affect at any time.

To a great extent *Nidana* of *Manobhitapakara Bhavas* and *Ama* are same. Excessive generation of free radical sustained affection of *Manobhitapakara Bhavas* altered the body defence mechanism, which in terms can understand that Treatment like *Manasa Doshahara*, counseling, antistress approach, *Dipana*, *Pachana*, can check the vicious pathogenesis involved in *Madhumeha*. By changing mode of life style, optimistic attitude, keeping faith in good, decreasing the high blood pressure level stress hormones can be reduced. This reflects through the sufficient decrease in signs and symptoms.

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