

CHAPTER 2: ANCIENT LITERARY RESEARCH

2 LITERARY RESEARCH / REVIEW OF TRADITIONAL LITERATURE

2.1 AIMS AND OBJECTIVES

- To understand the concept of lifestyle modification, stress according to Ayurveda
- To understand the management of lifestyle modification, stress according to Ayurveda
- To understand the concept of lifestyle modification, stress as described in Yoga texts
- To explore the management of lifestyle modification, stress through Yogic concepts

2.2 MATERIALS AND METHODS: SOURCE MATERIAL

Traditional Ayurveda texts:

- *Caraka Samhitā*
- *Suśruta Samhitā*
- *Aṣṭāṅga Hrudaya.*

Traditional Yoga texts:

- *Upaniṣads*
- *Patañjali Yoga sutra's*
- *Haṭha Yoga Pradīpikā*
- *Yoga vāsiṣṭha*
- *Bhagavadgītā*

2.3 REVIEW OF AYURVEDA TEXT

VEDIC LITERATURE

The disease is mentioned as “*ashravam*” means *mutratisara* i.e. excessive urination (polyurea).

“ यथा धां वा पार्थवांचान्तरित्पिष्टति तेजक एवा रोगं
चस्मावं चांतरित्पिष्टन्तु मुजं इति आस्तावं (बहुमुत्रता) ”

BRUHAT-TRAYI

The period of “Bruhat-Trayi” is the golden period during which Acharya Charaka, Acharya Sushruta and Acharya Vagbhata wrote the ancient texts which form the basis of Ayurvedic literature. The first Samhita among the Bruhat Trayi is CHARAK Samhita, in which Diabetes was recognized as a disease entity in ancient Indian Ayurveda (the science of life and longevity). Charak Samhita authored during the pre Buddhist period (600BC) contains a vivid picture of the disorder from a physician’s point of view, the Agnivesha Tantra, reedited by Acharya Charaka which deals with aetiology, symptomatology, pathology, classification, prognosis, principles of treatment and management of Madhumeha.

Acharya Sushruta of 10th century B.C. described 20 different types of Prameha in Nidan Sthan Chapter 6 and Chikitsa Sthan 11/12/13. Sushruta, the great surgeon supplemented the earlier information and presented a more comprehensive picture of diabetes, its possible predisposing factors, clinical features, course, complication along with principles of medical care and surgical intervention wherever necessary. The disorder was named Madhumeha because of the sweet taste of urine attracting ants and insects.

Both scholars considered Prameha to have 20 varieties and genetic basis, evident from positive family and hence were stated to be incurable. The role of diet and physical activity in the development and progression of Madhumeha have been emphasized both in Charak and Sushruta Samhitas.

Two types were recognized, one characterized by stout built, gluttony and lethargy and the other by leanness, profuse polyuria, thirst and dehydration. Fatigue, aches, pains and drowsiness have been described in the symptomatology. Carbuncles and burning of hands and feet were recognized as complications. Sushruta deals a special chapter exclusively for the treatment of Madhumeha where he strongly advised use of “SHILAJIT” for treatment processed in salsaradi gana along with use of tuvaraka oil.

- *CaSu17/ - Pathogenesis*
- *CaNi4/ - Aetiology*
- *CaCi6/ - Treatment*
- *SuNi6/ - Aetiology*
- *SuCi11/ - Treatment*
- *SuCi12/ - Specific Treatment for complication*
- *SuCi13/ - Specific Treatment for Madhumeha*
- *AsNi10/ - Aetiology*
- *AsCi14/ - Treatment*
- *AhNi10/ - Aetiology*
- *AhCi12/ - Treatment*

FIGURE - MADHUMEHA IN BRUHAT TRAYI

Acharya Vagbhata composed two main book (samhitas) called “ASTANGA SANGRAHA” and “ASTANGA HRIDAYA” based both on Charaka and Sushrut Samhita. The probable period fixed by historians is between 2nd and 3rd century AD. He had described that Prameha when remain untreated gets converted into Madhumeha. He described etiology of Madhumeha by i) Dhatu Kshaya ii) Avarana of vayu by vitiated doshas.

Prameha is one of the major diseases and has been described in all available classics of Ayurveda.

In “Shabdakalpadruma” *Meha* or *Prameha* is defined as

प्रमेह - प्र अ मिह - क्षरणे अ घञ् -शब्दकल्पद्रुम ३/२८५

प्रकर्षेण मेहति वीर्यादिरनेनेति। शब्दकल्पद्रुम ३/२८५

The disease where excessive sweet urination takes place is called as *Madhumeha*. Sanskrit term “*Madhumeha*” is composed of *Madhu* + *meha*. The word “*Madhu*” means sweet and “*Meha*” means excessive urination (*atipravritti/ Vahula Abila Mutrata*).

मधुवत् मेहतीति मधुमेहः क्षौद्रवत् मेहति मूत्रत्यागं करोति यस्मिन् रोगे स मधुमेहः। वाचस्पत्यम्
मधु क्षौद्रं तस्य तुल्यं तद्वर्णं वा मधुमेहः। शा.सं.प्र.खं. ७

TABLE 3: CLASSIFICATION OF PRAMEHA

SI No.	Classification	Types
1.	Etiological	a) Sahaja or kulaja (hereditary) b) Apathya nimittija (acquired)
2.	Clinicopathological (Dosik)	a) Kaphaja - 10 types b) Pittaja - 6 sub types c) Vataja - 4 sub types
3.	Constitutional	a) Sthula or Balbana (obese) Pramehi b) Krishya or Dourbalya(asthenic) Pramehi
4.	Prognostic	a) Sadhya (curable) b) Yapya (pallable) c) Asadhya (Incurable)

2.3.1 CLASSIFICATION OF PRAMEHA

Ancient Indian physician have classified the disease in different manner to include etiological, pathological and prognostic point of view and to attempt for the successful management.

2.3.2 NIDAN OF PRAMEHA (ETIOLOGY /CAUSE)

Ayurvedic classics, Hetu that is causes stands first in the examination of diseases. Nidan is a factor which is potent enough to produce a disease. The study of the causes of Madhumeha is very essential for the treatment point of view because the avoidance of these causes is the first step of treatment in Ayurveda i.e. nidana parivarjanam.

About the etiological factor of the disease Prameha can be discussed under the following headings –

a) General etiology

Sushruta has clearly highlighted the role of hereditary and diet in Prameha. On this basis, he has classified the patient of Premeha into 4 groups

i) Aharaja; ii) Viharaja; iii) Genetic origin(sahaja) and iv) Nidanarthakara rogaja.

Samanya nidanas are those which are explained by in general irrespective of dosha concern:

i) Aharja sambandndhi nidan in relation to food

- ❖ Adhyashna, Guru Guna ahara atisevana
- ❖ Sheeta Guna ahara atisevana, Madhura ahara atisevana
- ❖ Amlarasa ahara atisevana, Lavana Guna ahara atisevana
- ❖ Navannapana atisevana, Guda vikara atisevana
- ❖ Ikshu vikara atisevana, Ksheera atisevana, Dahi atisevana
- ❖ Anoop mamsa atisevana, Audeka mamsa atisevana,
- ❖ Gramya mamsa atisevana, Medovardhak ahara atisevana
- ❖ Hayanaka, Vilepi, Tila

The above mentioned aharas are predominant in Apa and Prithvi mahabhoot and contain Snigdha quality which are similar to the qualities of Kapha and Medas. So, these food articles would aggravate Kapha which is initial cause for Prameha/ Madhumeha. They also increase Medas which is the Khavaigunya sthana in Madhumeha. As these ahara possess excessive

apa Mhabhuta Apabhootagni Vyapar Viktiti takes place and this leads to Kleda vridhi which is the prime cause for the pathogenesis of Madhumeha.

ii) Viharaja Sambandhi Nidana (related to lifestyle)

- ❖ Atinidra,
- ❖ Asya atishukha, Diwaswapna
- ❖ Vyayam Varjana, Alasya, Achinta, Samsodhana Varjana

These viharaja nidana aggravates Kapha and medas and cause Prameha/ Madhumeha. There is less energy expenditure which causes ineffective mobilization of fat from adipose tissue while synthesis and storage of fat continues normally.

iii) Beeja dosha (Genetic factor in Prameha)

This is mentioned in the context of nidans of Prameha. But while mentioning Sadhyasadhy this has been mentioned by Acharya Charaka while explaining Vikrutha Garbha caused by Beeja dosha says that if beeja is defective (Defect in Genes) the body part developing from the portion of beeja will be abnormal. It depends on the beeja bhaga avayaga which is defected Charak has described anatomy of beeja which may be correlated as

- ❖ Beeja dosha (Genetic factor in Prameha)
- ❖ Beeja Bhaga = chromosome.
- ❖ Beeja Bhaga avayava = genes

So, beeja dosha can occur at any level. He gives an example that parents may not be blind but their progeny may be blind. Just like this the parents may not be diabetic but off springs may be diabetic due to genetic defect or Beeja dosha.

We find description of 'Kulaja' disease in Charak and Shusrut smahitas which denotes the knowledge of inheritance in ancient times. Shusrut said that kshetra, Ambu, Beeja and Ritu are the four factor which are kept to be in mind while discussing genetic involvement in any disease. Here

- ❖ Khetra = reproductive organ of woman ,
- ❖ Beeja = Spem,
- ❖ Ambu = watery content which gives nutrition to foetus,
- ❖ Ritu = environment around fertilized ovum or foetus.

Also physical and mental stages including dietary pattern of the pregnant lady can cause changes in body of offspring.

As sahaja disease manifests due to certain defects in beeja ie ovum and sperm, this can be interpreted as inherited disease. The description of kulaja vikara i.e. tendency of running Prameha in families has been given by Acharya Charak. In recent studies about the disease show that hereditary carries the autoimmune destruction of the islet of Langerhans of pancreas which causes defective insulin secretion. Genetic defect to produce the Diabetes is taken in the modern science under the umbrella of MODY (maturity onset diabetes of young).

iv) Nidanaorthakara roga

Sthoulya is a Nidanaorthakara roga for Prameha. In sthoulya the path of vayu will be obstructed by medas and hence vayu will get aggravated easily, that which is confined to Kostha (Saman vayu) resulting in the stimulation of digestive fire and consequently absorption of food. So the food digests quickly and individual becomes voracious eater. By this Medodhatwagni becomes more manda and puts pressure on its medosthan ie vapavahana, hence there will be relative insulin deficiency. On the other hand excessive increase of fat and muscle cause insulin resistance. So both insulin resistance and insulin deficiency cause Madhumeha.

b) Vishesha Nidan (specification) of kaphaj prameha (C.Ci4/5)

- ❖ Acharya Charak has mentioned; Kaphaj Prameha Nidan
- ❖ Ahar Sambandhi
 - Excess and frequent intake of fresh corns and
 - Excessive intake of fresh pulse with ghee as soup.
 - Excessive intake of meat of,
- ❖ Gramya mamsa (Domestic Animal),
- ❖ Anupa mamsa (Fleshy Animal), Audaka mamsa (Aquatic Animal),
- ❖ Excessive intake of:
 - Shaka (Vegetable) , Tila (Seasum indicum), Palala (Oil cake of Tila),
 - Pistana (pastry), Krsara (Gruel prepared of tile, rice and blackgram)
 - Vilepi (type of gruel prepared with four times of water)
 - Ikshu vikar (Preparation of sugarcane)
 - Payasa (a type of milk preparation), Dahi (curd)

- Nava mad (fresh wine prepared from new rice)
- Mandak (fermented liquour)
- ❖ And any Drava padartha (liquid)
- ❖ Madhur padartha (sweet)
- ❖ New padartha (fresh corps)
- ❖ Vihar
- ❖ Vyayame Varjana : avoidance of physical exercise;
- ❖ Swapna prasanga : indulgence bed rest;
- ❖ Shayana prasanga : excessive sleeping tendency;
- ❖ Asana prasanga : sedentary habits
- ❖ Or any regimen which produce more Kapha, and Meda

Pittaja Prameha Nidan

Ahar sambandhi

- ❖ Ushna guna ahara ati sevana
- ❖ Amla rasa ahara ati sevana
- ❖ Lavana rasa ahara ati sevana
- ❖ Katu rasa ahara at sevana
- ❖ Ahara sevana inspite of Ajeerna (Adyasan)
- ❖ Visham ahara sevana (intake of mutual contradictory foods)

Vihara

- ❖ Ati atap seven (Exposure to excessive hot sun)
- ❖ Agni santapa (Exposure to excessive heat of fire)
- ❖ Shrama (physical exertion)
- ❖ Krodha (Anger)

Vataj Prameha

Ahar sambandhi

- ❖ Katu rasa ahar ati Sevena
- ❖ Kshaya rasa ahar ati sevena
- ❖ Tikta rasa ahar ati sevena

- ❖ Rooksha Guna ahar ati sevena
- ❖ Laghu Guna ahar ati sevena
- ❖ Sheeta Guna ahar ati sevena

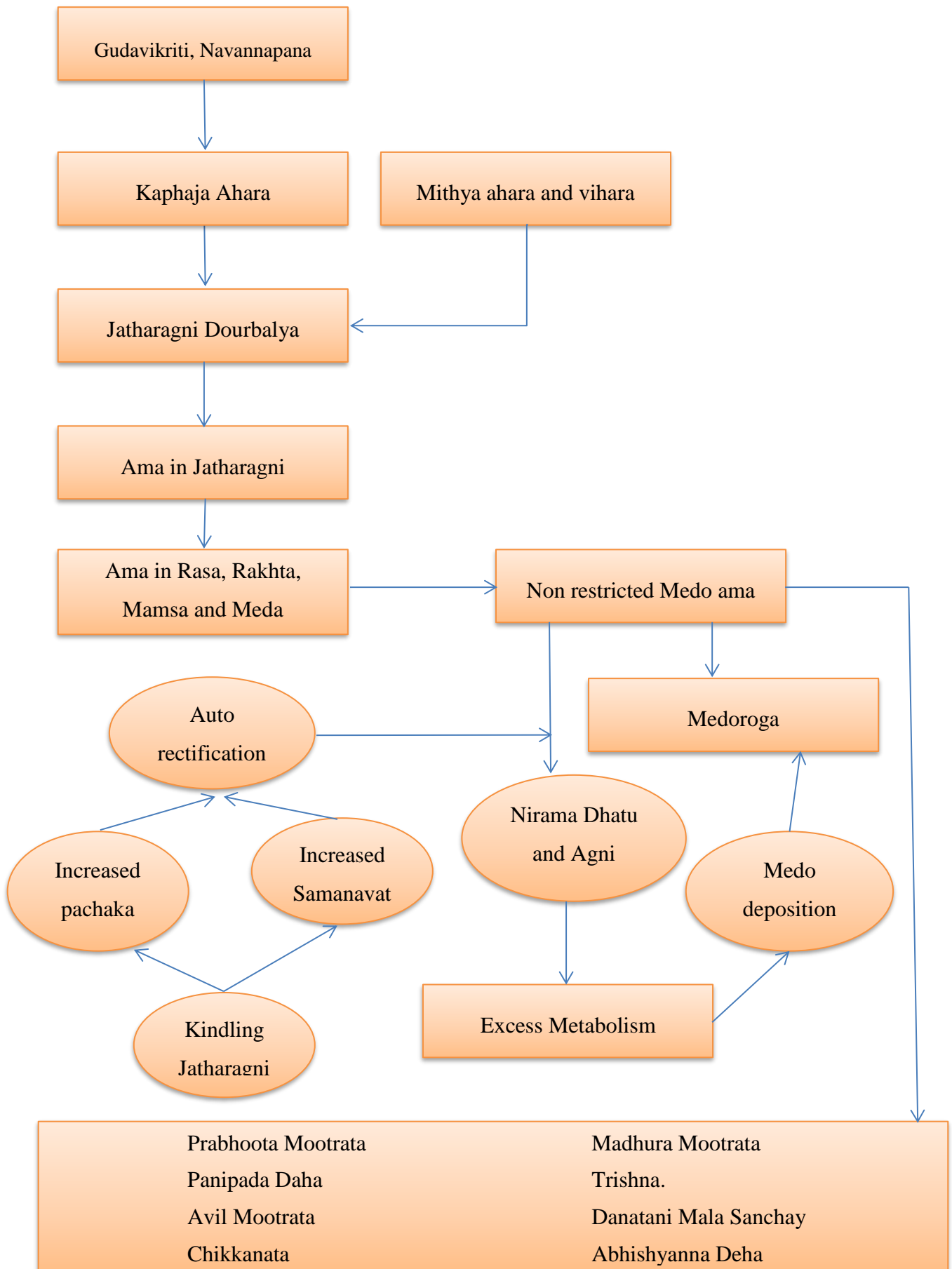
Vihara

- ❖ Vyavaaya ati yoga (Excess sexual indulgence)
- ❖ Vyavyama ati yoga (Excess exercise indulgence)
- ❖ Vamana ati yoga (Excess vomiting indulgence)
- ❖ Virechana ati yoga (Excess purgation indulgence)
- ❖ Asthapan at yoga
- ❖ Sirovirechan ati yoga
- ❖ Atap ati seven
- ❖ Vega sandharana
- ❖ Anshana (Fasting)
- ❖ Abhighata (injury)
- ❖ Ati udgega (Anxiety)
- ❖ Ati shoka (grief)

So we can summarize the above description about specific and general aetiological factors in the following manner -

- ❖ Genetic (beeja doshaRef.Su.Chi.11/3)
- ❖ Metabolic aspect(Ch,Chi 13 grahani)
- ❖ Sedentary lifestyle(Su.Ni.6/3;Ch.Ni4/5;A.H.Ni10/1-3)
- ❖ Abnormal food habits(Ch.Chi.6/4)
- ❖ Secondary factors (other intervention, drugs, blood transfusion, viral infection, obesity, pregnancy etc.)
- ❖ Kaphaja prameha is caused by over nutrition
- ❖ Over nutrition causes medha vridhi(obesity)
- ❖ Main causative factor bahudrava sleshma (hyperinsulinaemia) converting badha medha (fat depots in the body) to abadha meda (F.F.A., Cholesterol, VLDL,LDL)
- ❖ Vitiates mamsadhatu (Amino acid) ,sharirakleda (Plasma volume) in chronological order

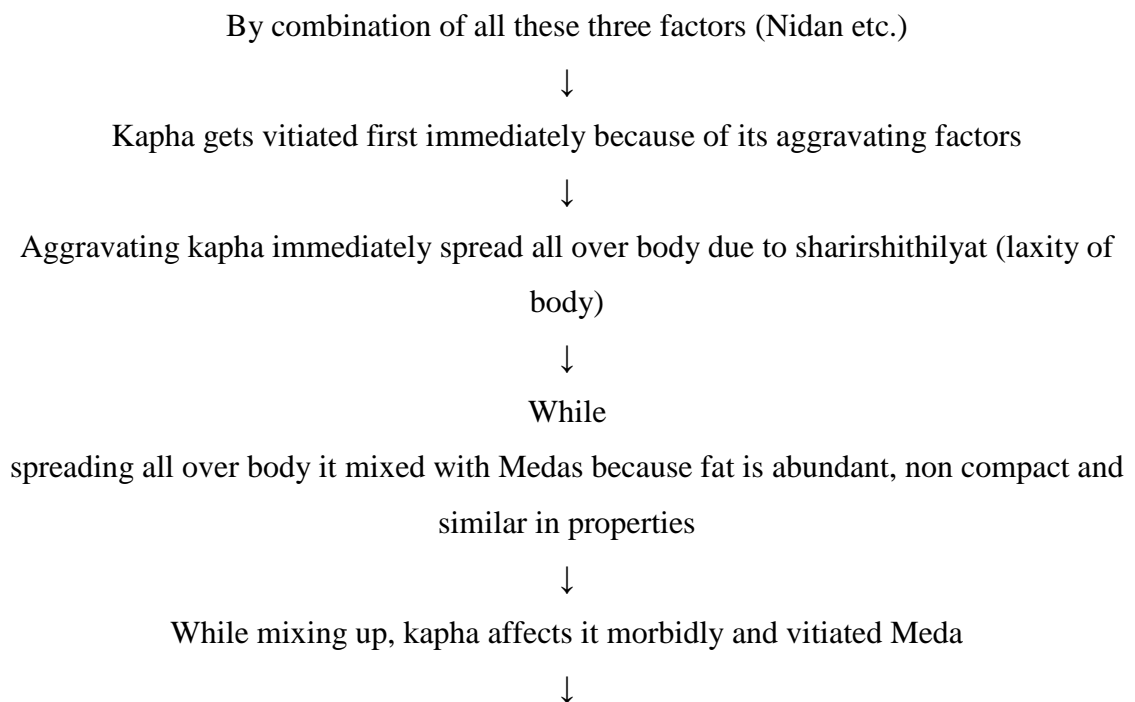
- ❖ Formation of excessive urination
- ❖ Ref.(ch.ni 4/8,A.H.Ni.10/4,Su su 15/36)



2.3.3 SAMPRAPTI OF PRAMEHA (VISHES)

2.3.3.1 KAPHAJA PRAMEHA

By combination of all these three factors (nidana etc) kapha gets vitiated immediately because of the predominance of its aggravating factors. When vitiated, it spreads all over the body immediately due to laxity of body. While spreading, at first it gets mixed up with the meda(fat) because fat is abundant, non-compact and similar in properties while mixing up, kapha affects it morbidly due to its vitiation. Now that vitiated kapha associated with meda joins with body fluid and muscles because the latter are increased excessively. Thus affecting the muscle it produces boils, saravika, kacchapika etc. due to sloughing off muscle because of abnormalcy. By affecting the body fluid, transforms it in urine and also blocks the heavy openings of the urinary tubules coming out from vanksana (urinary bladder) & basti (kidney) and associated with meda(fat) and shariraj kleda(body fluid). Thus kapha produces kaphaja prameha and leads to their stability or incurability due to abnormalcy.



Vitiated kapha associated with vitiated meda which are produce due to increasing excessively body fluid and muscle & joins with sharira kleda and mamsa



Thus affecting the mamsa it produce boils, saravika kaschapika etc. due to abnormalcy



Next affecting the body fluid, transform, it in urine



and also blocks the heavy opening of the urinary tubules coming out from vanksana and vasti, associated with Meda, kleda



Thus it (kapha) produce the (kaphaja) prameha and leads to their stability or incurability due to abnormalcy (due to simultaneous vitiation of homogenous and heterogenous dhatus)

(Ch.Sa. Ni. 4/8)

2.3.3.2 PITTAJA PRAMEHA

In a person who uses hot, sour, saline, alkaline and pungent food and food during indigestion is exposed to very intense heat of the sun and fire, exertion anger and irregular diet and having lean body, pitta gets vitiated immediately and by the same mechanism gives rise instantaneously to six types of prameha.

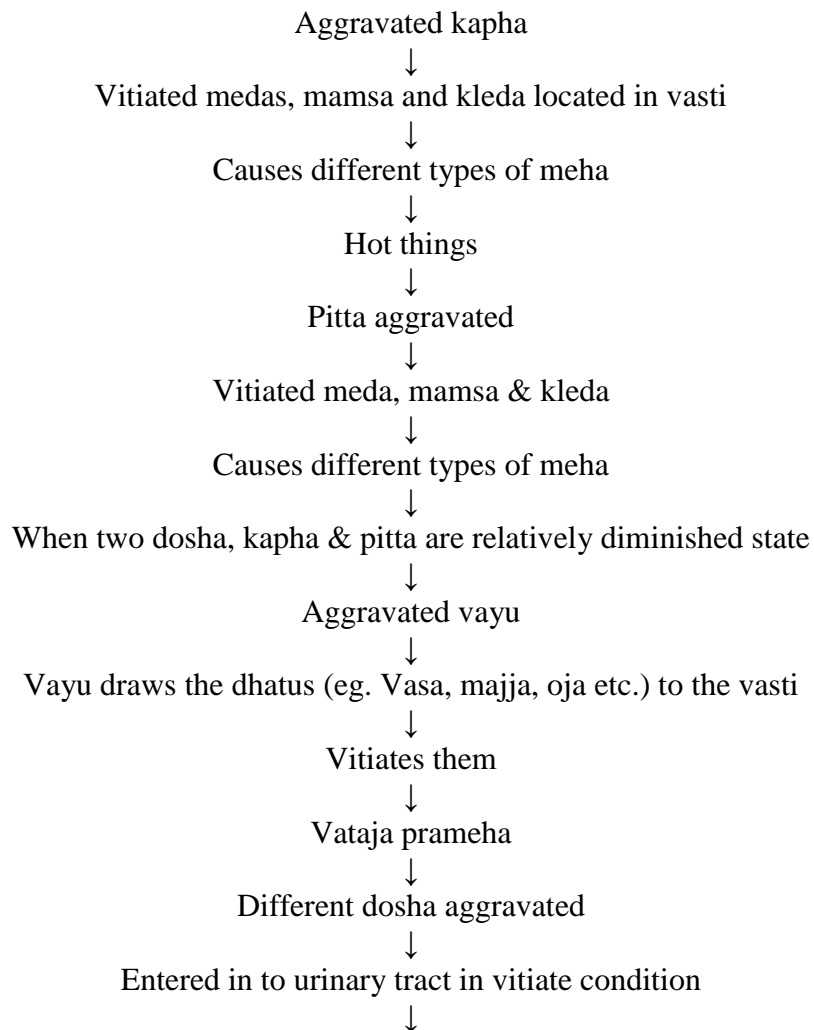
(Ch.Sa. Ni. 4/24)

- ❖ The events of the pathogenesis of pittaja prameha is same as Kaphaja prameha except in the aetiology in place of Bahurdev sleshma excited pitta takes the lead in excitation of pitta which has been described before in relation with nidana of prameha.
- ❖ It is obvious, by looking the etiological factors of pittaja prameha that the body is suitable to be turned at a higher level to meet the demand of physical and mental stress and strain. It is an established fact that the toning up of the body is done by the secretion of adrenal glands, thyroid, anterior pituitary (secretion's stimulating thyroid and adrenals) etc. so we can conclude that the constant exposure to the etiological factors described earlier, the internal secretion of adrenals and thyroid is to be a much higher

rate as compared to normal. On the other hand excess thyroid secretion causes lipolysis and protein breakdown (results muscle wasting). Stress also increases sympathetic activity which causes increase insulin secretion. Following flow chart gives an inter-relationship between modern ayurvedic, pathogenesis (hypothetical).

2.3.3.3 VATAJA PRAMEHA

Kapha having vitiated medas, mamsa and kleda (liquid matrix) of the body located in basti (urinary tract) causes different types of meha. Similarly pitta aggravated by hot things vitiate those elements and causes different types of meha. When these two dosas are in relatively diminished state, the aggravated vayu draws tissue elements viz. ojas, majja and lasika into the urinary tract and vitiates them to cause the third category of prameha. Different dosas having entered the urinary tract in vitiated conditions give rise to the respective categories of meha.



Give rise to the respective categories of meha

(Ch.Sa. Chi. 6/5-6)

- ❖ Excited vata due to various vata karaka ahara and vihara acts on the body in such a way that there is passage of deep seated dhatu like vasa, majja, lasika and oja in the urine (Ch. Ni. 6/37) and patient become very weak and emaciated. The prognosis of this type of prameha is very bad due to severe complication, physiological antagonistic therapy prescribed for this type of disease and rapidly progressive nature of vata.
- ❖ According to Charaka (Ch. Chi. 6/5-7) and Vagabhatta (AH 10/5) vatic prameha occurs when there will be relative predominance of vata rather than pitta and kapha.

Vatic prameha can be compared with the modern scientific description of type 1 diabetes. It occurs mainly before maturation but may be seen upto the age of 9th decades also. The patient is generally weak and emaciated. They are more prone to develop severe complication like ketoacidosis and need insulin for their survival. All of these features can be easily compared with vatic prameha

2.3.4 DAILY & SEASONAL REGIME

Āyurveda is upveda of *Atharvaveda*. According to Kashyap acharya ayurveda is pancham Veda. *Āyurveda* is an ancient 5000-year science which emphasizes physical. Mental wellbeing and strategy for prevention and cure of the disorders. *Āyurveda* principle is prevention of illness, cure the disease and help healthy person maintain wellness

Most chronic diseases and NCD (Non-Communicable diseases) prevalent today are related to lifestyle errors. Most of such diseases have prevention potential, but they are difficult to cure. Lifestyle management is the anchor of treatment in these conditions. It is impressive to notice that the Ayurvedic and yoga classics conceived this idea and emphasized the role of faulty lifestyle and dietetics in the causation of a disease thousands of years before. Strategies of prevention and treatment of most ailments are *Svasthanarvritta sadvritta ācara*, and *Nidan parivarjan*.(Good conduct and avoid causative factors)

Āyurveda, is essentially a promotive and preventive health care system. With appropriate and strategic modifications suited to the people of today, it is advisable to turn back to *Āyurveda*, and adopt the lifestyle tips and dietetics advocated in Ayurvedic Sciences. This will reduce the disease burden of society and dependence on pharmaceutical nexus to a great extent. (Petryna, 2006)

स्वस्थस्य स्वास्थ्यरक्षणमातुरस्य विकारप्रशमनं च। CH.SU 30/26

“*Ṣvāsthasya ṣvāsthyarakśanam āathurasya ṛogapraśmanam*” from Ayurvedic perspective.

svasthavritta means healthy circle: daily routine and seasonal regime to follow to keep up healthy and heal diseased. The daily and seasonal regimes are in Table 4 below.

TABLE 3: THE DAILY REGIME AS PER DOSHA

Ayurvedic Interventions	Proponents	Interventional	Tools Safety
<i>Svasthavritta</i>	Individual	Daily and Seasonal	SAFE
<i>ācar rasāyana</i>		Regime	

<i>Dinacārya</i> /Daily Regime	<i>Ritucarya</i>/ Seasonal Regime	According to Vyadhi/ Illness
<p><i>Dantadhāvana</i> (cleaning teeth) <i>Anjana</i> (collyrium)</p> <p><i>nasya</i> (nasal drops)</p> <p><i>Kavala-Gandusha</i> (mouth gargles)</p> <p><i>Dhumapana</i> (inhalation of</p>	<p><i>ābhyanga</i> (Oil application)</p> <p><i>Udvaartana</i> (massage)</p> <p><i>ḍhumapana</i> (inhalation of medicated smoke)</p> <p><i>kavala gandusha</i> (mouth gargles)</p>	<p>As a cause: vega ūdirana- ḍharana (suppression and cause)forceful production of urges) <i>Pravata</i> (strong wind) <i>Adhva</i> (brisk walking) <i>Chankramana</i> (walking)</p>

Tambula Bhakshana (chewing of betel leaves)	<i>Anjana</i> (collyrium)	As a treatment: <i>Abhyanga</i> (oil application) <i>Anjana</i> (collyrium) <i>Kavala-Gandusha</i> (mouth gargles) <i>Nasya</i> (nasal drops) <i>Dhūmanana</i> (inhalation of
<i>ābhyanga</i> (Oil application)	<i>Shayana</i> (sleeping)	
vyāyama (exercise)	<i>vastra dhāraṇa</i> (wearing clothes)	
Udvardana (massage)	<i>mani-malyadi dhāraṇa</i> (wearing stones etc.)	
Snana (bathing)		
Mani-malyadi Dharana (wearing stones etc.)	<i>Vyavāya copulation</i>	
Anusheelan Pragna	<i>Snāna bath</i>	As cause and treatment: <i>vyayāma</i> (exercise) <i>Snana</i> (bathing)

These manifested out of three basic approaches to disease management: *daivavyapaśraya Sattvāajaya*, and *yuktivyapāśraya* (Srikantha, 1999)

2.3.4.1 DAIVAVYAPAÇRAYA CIKITSĀ

Daivavyapaśraya cikitsā considers the karmic causes of diseases and their mitigation through several measures like *ūpasana zapa yagna śanti karma prayascitta*, etc. In *samhitā purāna* extensive procedures and rituals, mantras have also been described for pregnancy, childbirth, pre-surgical procedures, and other events to prevent accidental complications.

The *Sharira* (Physical) Dosha remedial are pacified by divine nature (*Daivavyapashraya*) and rational therapy (*Yukti Vyapashraya*). Mind related (Manas Dosha) can be treated with (*Gyan*) spiritual knowledge, (*Vigyan*) Scientific knowledge, (*Dhairya*) patience, (*Smriti*) memory and Samadhi. *Daivavyapashraya Chikitsa*(gupta, 2000) is related to blessing of god

and consist of Mantra (chanting sacred hymns or words), Ausadhi (tying some part of specific medicinal plant), Manidhara(tying gem to body)

According to Chakrapani the term 'Daiva' means 'Adrishta', Daivavyapashraya Chikitsa causes immediate mitigation of disease without suffering, hence this is stated first of all. Diseases that are caused by improper Ahara and Vihar, are called the Doshaja while the diseases which arise due to sinful acts of the previous life are called Karmaja diseases.

मन्त्रा मननात्| muni yaksha, niruktam,chapter7,pa-3, kha-12

मन्नात रायते, इत्रत मन्त्रः| charka sutrasthan 11/54

Chanting of words, mantra is one which leads to health, happiness, protection, prosperity, and well beings. Words of mantra has magical formula which is deigned of specific letters arranged in definite order filled up with the specific sound energy. Chanting the Mantra has a vibration on the surrounding environment. Mantra chikitsa is one significant approach of Daivavyapashraya Chikitsa. Mantra affects five sense organs as they are involved in this process.(Gao et al., 2020) The Law of nature that states everything has a vibration. Nature consists of different vibration at various frequencies and amplitude giving rise to the phenomenon of the world. Mantras are energy-based sounds, when the Mantra is chanting at a certain frequency comes in contact with cosmic energy and spreads all around the body. It balances the power of the human body, increases action modesty.

Effect on the Thought Process Chanting of Mantra or praying to God is widely practiced in all over the world, which is helpful to cope up with negative or stressful emotions. This study showed that Chanting or praying of Mantra induce strong Brain activity; give response to stimuli with negative valence. Repetitive Mantra chanting may structurally lateralize a network of Brain areas involved in biased memory function. These

both results suggest that Mantra chanting help to form a positive effect to compensate negative emotions.(Gao et al., 2020)

om chanting, these three areas of brain reduced their output and deactivate them. It decreases the sympathetic system and also increases the parasympathetic activities. Parasympathetic activity such as lowering heart rate, respiratory rate and intensified sensitivity to sensory transmission. In some cases of mental disorder which have involved in emotional processing Chanting of Om Mantra may helpful for them.(Harne & Hiwale, 2018)

2.3.4.2 SATTVĀJAYA

Reversal of several psychosomatic outcomes is possible as the Mind plays a significant role in successful therapeutic effects. The patient's Mind is a prerequisite for planning effective management of the disorder. Hence proper understanding of the cognitive effect status is essential. The term – ‘minor psychotherapy’ is often used in the West as a component of overall patient management. In *Āyurveda*, while planning therapeutic strategy, the *antah karana catuṣṭaya mana buddhi ahankara* (triguna of Mind), and Atma provide a robust substratum for individualized *sattvāajaya* (positive Mind). As per personality, diverse Yogic practices like *Upāasana* are to enhance Mental control and strengthen the will. Enhancement of the capacity to manage stress is an essential component of the necessary mental attitudes and behavior. The adaptive skills develop by a broader understanding of *loka puruṣa* structure, daily reinforcement of positive thinking, and avoidance of negative emotions.

2.3.4.3 YUKTIVYAPĀÇRAYA

Yuktivyapāśraya involves using measures to restore the imbalanced dosha–dhatu-mala through *śodhana śaman* (palliative). The use of medicines based on herbs was only one of the components of *Yuktivyapāśraya*. The other components included specific diets, lifestyle modifications, seasonal health precautions, and practices. The substances used as drugs are of mineral, animal, and plant origin. The choice of individual components or combinations is on the panchabhautik theory and dravyagunas (Pharmacology) vis-à-vis the condition to be disease to be treated.

2.4 YOGA CONCEPTS

An integrated approach of yoga therapy modules (IAYT) module by SVYASA (Swami Vivekananda yoga Anusandhana Samsthana) is for specific diseases (Nagarathna, 2008). The base is on the concept of disease according to ancient Vedic texts of *yoga* and *Āyurveda*. IAYT is a holistic understanding of human physiology, including five aspects of the individual. These are the physical body that includes all molecular components of the system (annamaya kosa), the life energy (*Prāṇa*) system that is responsible for all physiological functions in a living organism (*prāṇimaya kośa*), the Mind and its facets (*Manomaya kośa*), the discriminating faculty (*Vignānanmaya kośa*), and the basal state of being (ānandmaya kosa) which forms the stable disease-free inner template of consciousness and bliss (Sivananda, 2020; Valmiki, 1914). The disease model proposes that all lifestyle diseases begin in the Mind in uncontrolled violent emotions. This *Prāṇa* gathers enough energy to evoke violent changes in the physical structure resulting in chronic habits of neurochemical

responses. This model proposes a possibility of complete reversal as the disease is nothing but an imbalance on a template of a disease-free state (*ānandamaya kosa*).

Using Mindfulness practices therapy aims to help the participant reach this inner state of freedom. The practices include techniques at the physical level (*āsanas*, *kriyas*, and yogic diet), at *prāṇa* level (breathing, *prāṇayam*, *Prāṇa* energizing technique, etc.), *manomaya kośa* level (different types of meditations, emotion culture), and notional correction for an understanding of happiness and purpose of life, stress management through counseling by using the yoga concepts. All techniques aim for physical level deep relaxation to muscles, at *Prāṇayama* level slow down the breath and at *manomaya* level calm down the Mind. *manah prasomanah upayah* process slows down all system functions to reach a state of inner silence, the state of freedom from distress and disease (Jagannathan et al., 2014).

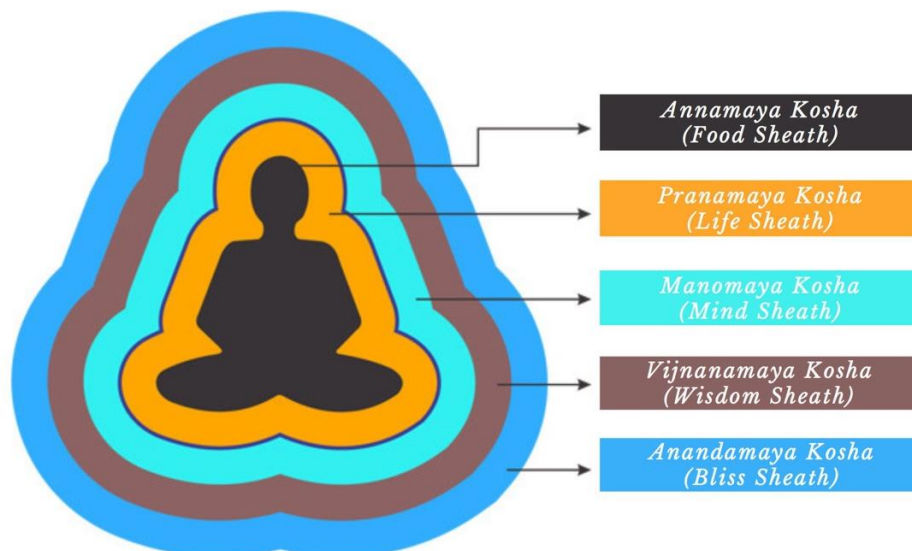


FIGURE 3: CONCEPT OF PANCHA KOSHA, A CONCEPT ADOPTED FROM (PROMOTION OF POSITIVE HEALTH BOOK BY DR H R NAGENDRA & DR R NAGARATNA, 2008).

Management of T2DM, Prediabetes by integrated approach of *yoga* therapy *yoga* philosophy states T2DM is like *sāmanya adhija vyādhi*, a disease born of stress, deep-rooted psychological conflicts uncontrolled emotions. In *Prāṇayama kosha*, it disturbs the functioning of *Prāṇa* in the body; *prāṇa* function in the long term leads to disease in a physical body (*ānnaṃmaya kośa*) in the form of *ādhijā vyādhi*. *yoga* recommends a Yogic lifestyle by emphasizing moderation in diet, physical activity, healthy social relationships, and sleep. This *yoga* therapy works on personality's physical, mental, emotional, intellectual, and spiritual aspects. Practices like *āsana*, *prāṇayam*, meditation, and relaxation techniques work at the cognitive level by reducing stress response with the regulation of HPA axis. *yoga* practices, in turn, improves immune function and reduces systemic Inflammation of the body. Evidence has shown that *yoga* therapy improves most of these physiological functions and reduces sugar in Diabetes, Prediabetes (Angadi et al., 2017; Jagannathan et al., 2014; Kumar et al., 2016).

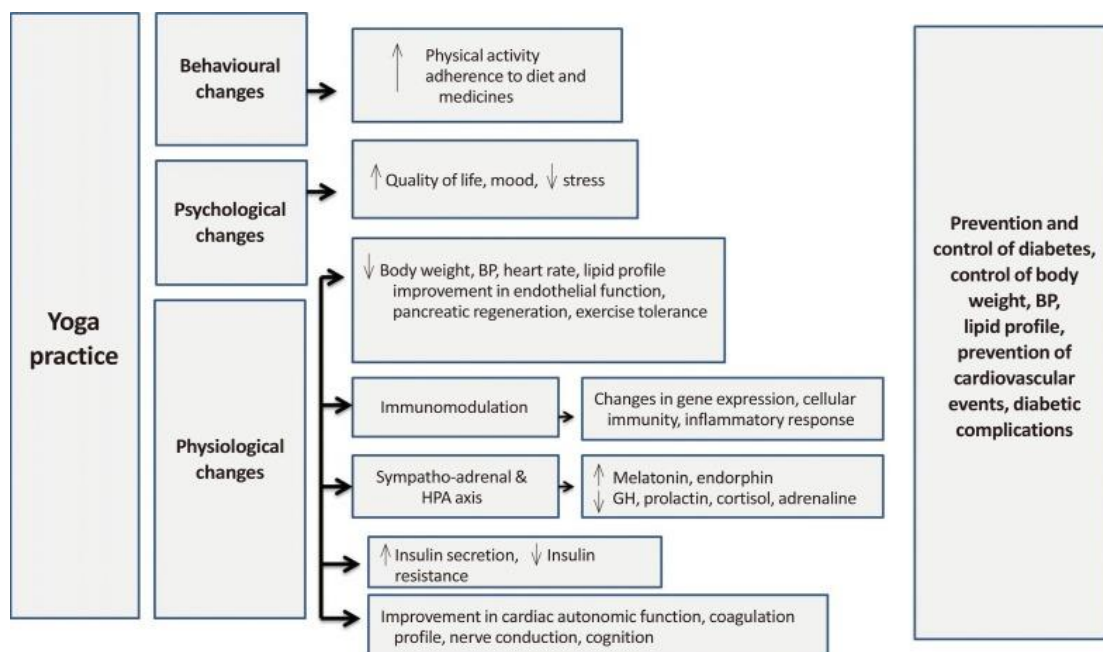







FIGURE 4: EFFECT OF YOGA AT BEHAVIORAL, PSYCHOLOGICAL, PHYSIOLOGICAL: INTERVENTION OF YOGA (Raveendran et al., 2018)

TABLE 5: PSYCHOPHYSIOLOGICAL PATHWAY OF DIABETES/PREDIABETES ACCORDING TO INDIAN SCRIPTURES (TAITTIRIYA UPANISHAD, YOGA VASISHTHA, PATANJALI YOGA SUTRAS)

Kosa (Virtual Sheath)	Aim	What happens	Understanding/ Achieve	Flow in Diseased condition	Action
Anandamaya	Total Silence	Right knowledge (Basic stuff is sat chit ananda)	Freedom from Distress, Perfect Health		Expansion, Non-Activity
Vignanamaya	Constriction of "I"	lack of right knowledge of happiness	Imbalance-Conflict between Right and wrong Knowledge		Focusing begins
Manomaya	Repetition of Loop of Thought / Constriction	uncontrolled excessive speeded up thoughts	Imbalance at Mind		Lost Freedom
Pranamaya	prana constriction, blockage of nadis	uncontrolled excess prana speed	Imbalance of Prana		Imbalance descends to body
Annamaya	Insulin Resistance/ β cell dysfunction	Raised Sugar	Imbalance at Physical Level (Adhija Vyadhi)		Imbalances settles down

2.5 EFFECT OF CIRCADIAN CYCLE AND DIABETES

In *Āyurveda*, all physiological and pathological phenomena depend on the delicate balance of dosas (*vata pitta Kapha*). *Dinacārya* and *ritucārya* correct biological clocks and doshas. The concept of *Dinacārya*, *Ritucarya* implies dietetics, habits, and behavioral adjustments are for day-to-day and seasonal changes, which is the concept of chronobiology inherent in *Āyurveda*. All the rhythms circadian (24 hours), circamensual (30 days), and circannual (one year) are recognized in dosas, both qualitatively and quantitatively (Arora, 2000).

Ayurveda tridosha/humor vata,pitta,kapha has great effect on functioning of body at certain times.Like morning 6am to 10 am is kapha kal.Hence getting up and doing physical activity help to mitigate lazyness, kapha effect.Likewise the pitta kal is evening 10pm to 2am which

is time for organ healing and restoration. Hence food should be avoided this time. If vata, pitta, kapha clock is followed the tridosha wont be viated to cause disease. If the disturbance is at the level of clock genes, then clock mechanisms are directly involved in the development of Diabetes; modern lifestyle itself has an increasingly pathological impact on the development of the disease. The unusual patterns of sleep, unusual eating behavior such as skipping breakfast, and night eating associated with shift work also the lifestyle disruptions of the day-night cycle may have a significant pathological impact on the development of T2DM (Kurose et al., 2014). Also, Insulin sensitivity comes under the regulation of circadian control, and its impairment has deleterious effects on glucose metabolism. Sleep disorders (short duration and poor quality sleep) may have an immense impact on the development of T2DM and obesity (Knutson, 2008).

Yoga technique at Pancha kosha to return to total health-pratipasava

state of freedom from distress -ānandamaya kośa - perfect health ----always untouched by any disease	
Remedy – Anandamaya kośa	
right knowledge – sat chit ānanda blissful awareness during meditation	total silence- the innermost observer blissful awareness during action
Remedy- Vignananmaya kośa	
knowledge –happiness is silence	knowledge of ‘I am that’
Remedy- Manomaya kośa	
Dhyāna - slow down the number of thoughts per second	Effortless chanting of mantra, meditation on expansion
Remedy- Prānamaya kośa	
reduce prāna speed –slow breathing	diffuse prāna constriction- let go
Remedy- Annamaya kośa	
relax –QRT,DRT, meditative postures--prayatna shaithilya	stimulate followed by let go- āsanās ,Kriyās -ananta samapatti

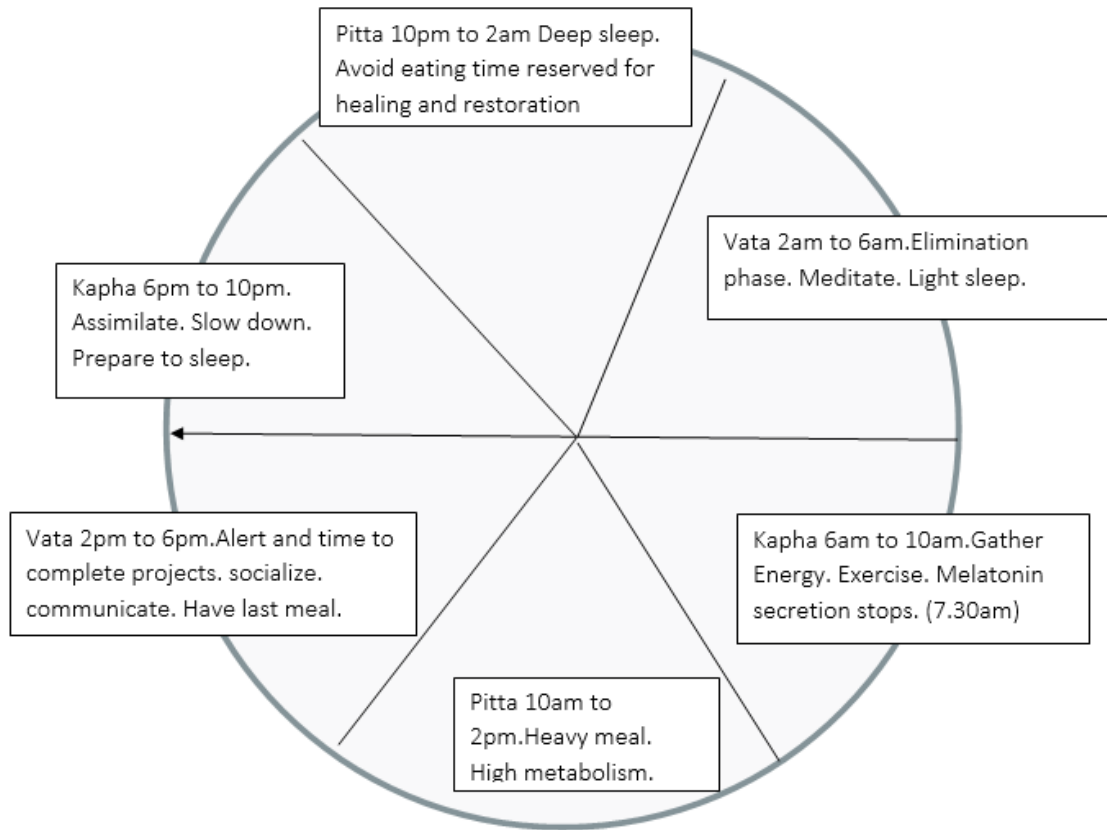


FIGURE 5: ĀYURVEDA, CONCEPT OF DAILY REGIME AND 3 DOSHA

2.5.1 CONCEPT OF STRESS, AYURVEDA AND YOGA

Stress is one of the primary factor which is known to influence the onset of prediabetes, diabetes . *Ayurveda* explains the concept of *prajñāparādha* (intellectual blasphemy) leading to unrightness as the main cause of somatic diseases which can induce all the pathological conditions .(Desai et al., 2021). Factor by which a person cannot perform optimum levels of intellectual functions and lose power to discriminate between right and wrong. The cause increases *Vāta* and hence aids manifestation *Acharya Patañjali* has provided description of the five stress producing factors called *Kleśas*.

Avidyāsmītārāgadvēṣābhīniveśāḥ kleśāḥ ||3||

(*Patañjali yoga sutra*. Chapter2/verse 3)

Five *Klesa* are- *avidyā* (ignorance) *asmitā* (ego) *raga* (desire) *dveṣa* (dislike) and *abhiniveśa* (fear of change). These are responsible for the onset of *duḥkha* (pain) or disease which may be physical or mental. *cittavikṣepa* (obstacles) are the impediments in the path of achieving the control of mind.

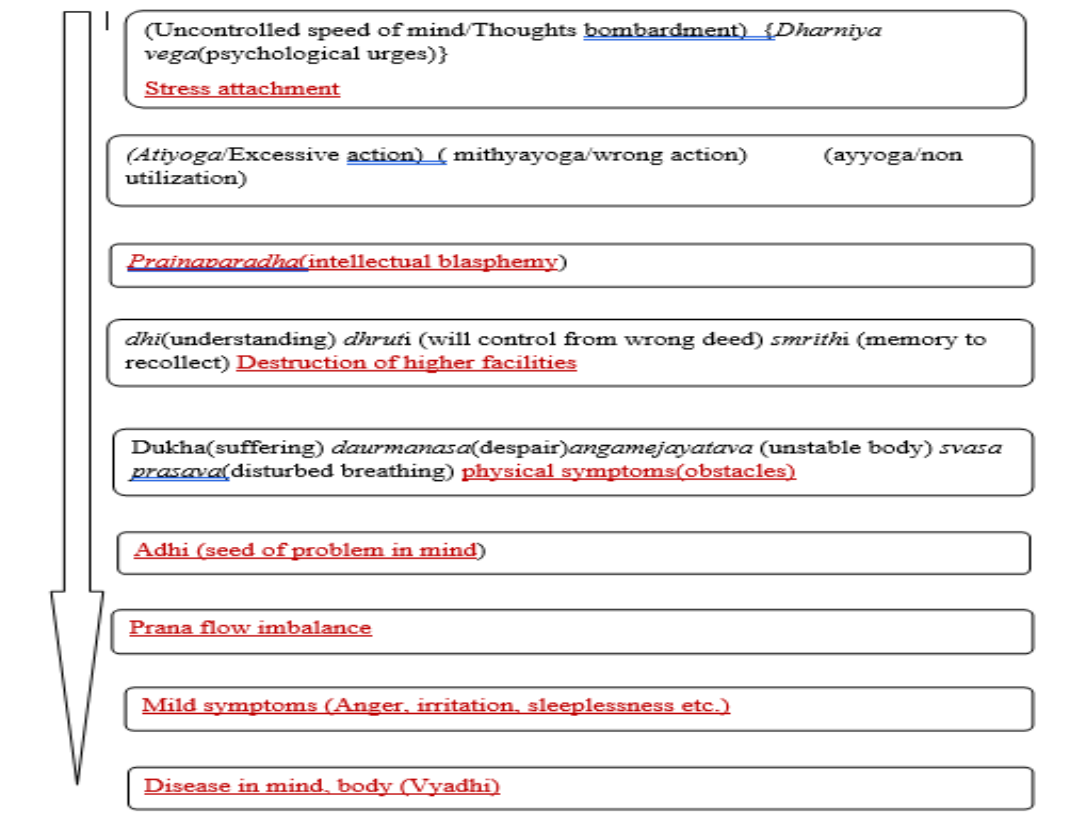
Vyādhistyānasamśayapramādālasāvīrati-

Bhrāntidarśanālabdhabhūmikātvānavasthitātvāni

Cittavikṣepāste'ntarāyāḥ || 30||

(Patañjali yoga sutra. Chapter1/ Verse30)

Cittavikṣepa obstacles leads to *duḥkha* which are *vyādhi* (disease), *styana* (mental laziness), *samshaya* (doubt), *pramada* (lack of enthusiasm), *ālasya* (physical lethargy), *avīrati* (craving for sense pleasure), *bhrāntidarśana* (illusionary vision), *alabdhabhūmikātvā* (despair due to failure to concentrate) and *anavasthitatva* (unsteadiness in concentration) ‘*Ādhija vyādhi*’ in *Yoga Vasista* is about the diseases originating from stress and ‘*Anādhija Vyādhi*’ are ones due to non-stress. The mind duality of likes - dislikes, love - hatred etc. trigger emotions that start creating imbalance at the level of *manomaya kosha* to intensify to cause “*Ādhi's*”. conflicts are the speed in mind and is termed ‘stress’. Over period this repetition brings in anxiety, depression, and anger response, to affects the various systems. This is a state of mind is *ksipta* described in *Patañjali yoga sutras* featured by agitation, restlessness and *rajas guna*. The *Bhagavadgītā* describes the process of how stress, repeated thinking and dwelling upon the same thoughts leads to attachment, desire, anger, delusion, memory loss, lack of discrimination and lastly destroys oneself. This is how stress contribute to *Prajñāparadha* which leadsto *Ādhi* and *Vyādhi* (disease).



2.5.2 THE CONCEPT OF ONSET OF DISEASE ACCORDING TO AYURVEDA AND YOGA

Ayurveda and Yoga have *Prajñāparādha* and *viparyaya concept* for onset of the psychosomatic disease explanation . External factors like climatic conditions also can contribute to this process leading to disturbance in manomaya kosha and vyadhi .

There is limited reference of manovaha srotas in Caraka Samhita, other channel, srotas in body represents the habitat of manas and therefore all the channels of the body should be considered as manovaha srotas. Combination of causative factors, the wrong doing at the levels of *kāya*, *vāca* and *manas* brings impairment in *dhī*, *dhṛuti* and *smṛuti*. This would cause increase in rajoguna and tamoguna causing *manovahasrotodushti* (vitiating the emotions etc) ultimately onset of disease, termed as *Ādhi* in Yoga text.