AYURVEDA

ORIGIN OF AYURVEDA

The "VEDAS" are considered one among the oldest literature in the world. It is said to be transferred by word of mouth and it is believed that they were never created by man but that its roots can be traced to consciousness.

FIGURE 1.1: Lord Dhanvantri (God of Ayurveda)

Historians have no consensus on fixing an exact chronology of the Vedas due to various reasons. Most of them have proposed the date as 4000 BC. The four Vedas (Rig, Yajur, Saama, Atharva) contain references to Ayurvedic concepts in which Atharva Veda is considered as the main source of direct Ayurvedic references of health and diseases. Ayurveda is considered as the Upaveda of Atharva Veda.
WORD MEANING
‘Ayus’ means life, which is a combination of the body, the sense organs, mind and the soul, (CS\textsuperscript{12}, Sutra sthana, slogo 42). ‘Veda’ means science, i.e. the science that explains life and the way of living is called as ‘Ayurveda’.

AIM OF AYURVEDA
The ultimate aim of Ayurveda is to guide every human being to maintain and promote health, and prevent ailments, which is the main hinderance to achieve “dharma”.

According to Acharya Charaka—

“ dharmartha kaama mokshaanam aarogyam moolam utthamam”

—CS\textsuperscript{2}, Sutrasathanam slogo 15

The ultimate aim of life is to attain “moksha” or salvation. As fulfillment of sensory desires will not end in the cycle of birth and death, one has to achieve mental maturity and grow beyond the sensory perceptions and desires. The psychosomatic health is the substratum to achieve “moksha”. This philosophy of life is the ultimate aim of Ayurveda.

BRANCHES OF AYURVEDA
Astanga Ayurveda are eight branches of Ayurveda (AH, Sutrasathanam slogo no.5)\textsuperscript{1}, they are Kaya Chikitsa (disorders of digestive system), Bala Chikitsa (paediatrics), Grha chikitsa is treatment for affliction of the body and mind by supernatural powers (psychiatry), Urddhwanga chikitsa (diseases in the head inclusive ophthalmology, otolgy, rhinology, laryngology and dentistry), Salya chikitsa (deals with surgery), Damstra Chikitsa is treatment of diseases due to poison (toxicology), Jara Chikitsa deals with geriatrics otherwise referred as rejuvenation therapy or rasayana therapy and Vr̄sa chikitsa or vijecakaranam with aphrodisiac therapy that treats sterility and infertility.

Other than this classification, in general, Ayurveda is classified as per the treatment given to other living beings (animals and plants) that includes Vrukshayurveda (Vruksha-plant), Mrugayurveda (Mruga-animal) that deals with the treatment of plants and animals respectively.

BASIC PRINCIPLES OF AYURVEDA
Panchamahabutha theory (five elements of nature) is the basic theory by which it is understood that the universe and the living being are one and the same that are made up of the five basic elements; they are prithu (earth), ap (water), tejas (fire), vayu (air) and aksh (space or atmosphere). As per this theory, universe is referred as the macrocosm and the living being the microcosm, these five bhuthas are perceived by our five sense organs that’s the reason why we humans can only identify a maximum of five constituent elements. This means each bhutha forms an extended limit of a sense organ. As per Ayurveda, our body is made of seven dhatus (tissue
elements) that are continuously formed from the essence of the Annarasa (food) and gets transformed to later stages. The healthy character and properties of these seven dhatus (rasa, rakta, mamsa, medas, asthi, majja and sukra) are responsible for the normal functioning of themselves and the body as well, thus produces waste products during this functioning are referred as Malas (wastes), and healthy functional properties of the body are categorised as three doshas (humors). In our body these five basic elements are in the form of three doshas (vata, pitta and kapha). These three humors are responsible for the proper biological, psychological and pathophysiological functions of the body, mind and the soul. The equilibrium of these three doshas is considered as the fundamental for the well-being of human body.

As our physical body is of solid structure, the constituent must be of predominant prithvi (earth) and jala (water) where the other 3 bhuthas are subtle in nature. Since the combination of prithvi and jala is kapha, the body itself owns the property of kapha in its normal state. The basic properties of kapha are snigda (unctuous or oily) and sita (cold). The normalcy of sita can be maintained at the optimum level of Ushna (heat or agni) alone. By this we can say that the base of a healthy body structure is snigda, sita and agneya (heat). The proper transformation of the dhatus and utilisation of the same for various activities for which Agni is essential can confirm the normal functions of the body. Agni helps in digestion of food as jataragni and transformation of dhatus as dhatwagni.

That's the reason why Ayurveda keenly identifies the root cause of the diseases that is the cause for the imbalance of the doshas. For correcting that imbalance, the proper digestion and elimination of malas should be confirmed first, by which the srotas (channels) and dhatus (tissues) can be treated and the normalcy of the three doshas can be maintained.

To have a basic understanding health and diseased state (vikrti) in Ayurveda, it is essential to have an idea of the basic principles like tridosha [sarira (body) and manasika (mind)], sapta dhatus, trimala, agni, kostha, etc.

**Tridosa** (tri – three and dosa - humor) viz, Vata, Pitta and Kapha are the three humors in the body, where dosa means, “tendency to corrupt or to create a morbid state in the body”. Disease occurs when there is a disturbance in the equilibrium of the tridosha, which may result in the disturbance of the Ayus. Each dosas are divided into five types according to their action in the body.

**Sapta dhatus** (sapta – seven and dhatu – (Dhatus are so named due to their nature of sustaining or supporting the body). These are the seven tissue elements in the body that form and maintain the well-being of the body. It includes rasa (plasma), rakta (blood), mamsa (muscle), medas (fat), asthi (bone), majja (bone marrow) and sukra (semen). Ojas is the essence of the seven dhatus, which is responsible for the vitality and life in an existing body.
These seven dhatus are also mentioned as dosas, when they get vitiated from their normal property and functions. They are formed in a sequential manner in the body, the base for all the seven dhatus is ahara (food), and the essence of the digested food is called as rasa. Rasa further gets transformed into rakta by the action of rasadhatuswagni within it. In the transformation process the by-products will be twofold, essence and the other will be the updhatus or excreta (Flow Chart 1.1). The essence forms the base of the next dhatus and the upadhatus helps in other physiological actions of the body while excreta are thrown away. There are different theories while describing the existence and interrelation between the dhatus and its distribution, in which the above-mentioned theory is widely accepted (Table 1.1).

**Trimala (tri — three, mala — waste)**

These are the three excretions of the body they are namely sakrus (faeces), mutra (urine) and sweda (sweat) (Table 1.2).

**Agna (Digestive fire) (Pitta)** literally means fire, the fire-like activity seen in the alimentary tract is due to Jataragni or pitta in general. This places an important role in the pathogenesis of all diseases. The digestion of the food depends upon the strength of the agni present in the stomach and also the type of food you consume. This activity is influenced by the condition of the dosas.

**TYPES OF AGNI: 13**

Agni is subdivided into thirteen types, as one-Kosthaagni, five-Bhutaagnis and seven-Dhatwagnis. Vagbhatta says that even the dosas and malas also have their own agnis (AH Sarirasthana Sloga 49). These are all related to Kosthaagni (Table 1.3).
<table>
<thead>
<tr>
<th>No.</th>
<th>Types</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Jatharagni (1)</td>
<td>Helps in transformation of Ahara (food) to Rasa dhatu</td>
</tr>
<tr>
<td>2</td>
<td>Bhutagni (5)</td>
<td>Aapyaagni</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Helps in digestion of respective fractions of the food</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>Taijasaagni</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>Vayavyaagni</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td>Nabhasaagni</td>
</tr>
<tr>
<td>6</td>
<td>Dhatwagni (7)</td>
<td>Rasadhathagni</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Helps in the transformation of Dhatus</td>
</tr>
<tr>
<td>7</td>
<td></td>
<td>Raktadhathagni</td>
</tr>
<tr>
<td>8</td>
<td></td>
<td>Mameadhathagni</td>
</tr>
<tr>
<td>9</td>
<td></td>
<td>Medodhathagni</td>
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<tr>
<td>10</td>
<td></td>
<td>Asthidhathagni</td>
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<td>11</td>
<td></td>
<td>Majadhathagni</td>
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<td>12</td>
<td></td>
<td>Sukradhathagni</td>
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<td>13</td>
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</table>

**Flow Chart 1.1:** Formation the upadhatus during the transformation of the Dhatus

- **AGNI** (that helps in the transformation)
- **ESSENCE** (that helps in the formations of next dhatu)
- **UPADHATU and EXCRETION**

- **FOOD**
  - Jatharagni
  - Rasadhathagni
  - Raktadhathagni
  - Mamsadhathagni
  - Medodhathagni
  - Asthidhathagni
  - Majadhathagni
  - Sukradhathagni

- **RASA**
  - Kapha (excretion)
  - Breast milk & menstrual blood (upadhatus)
  - Pitta (excretion)
  - Tendons and blood vessels (upadhatus)
  - Dirt of the external orifices (excretions)
  - Vasa and six layers of skin (upadhatus)

- **MEDAS**
  - Ligaments and joints (upadhatus)
  - Sweat (excretions)

- **ASTHI**
  - Hairs in head and body (upadhatus)

- **SUKRA**
  - Smears in eyes, face and skin (excretions)

- **OJAS**
  - Faeces and urine (excretion)
**Kostha** (nature of alimentary tract or nature of bowels)

There are three types of krostha according to the nature of the alimentary tract; they are krrakostha (rough), mrruthukostha (smooth) and madhyamakostha (moderate) depending on the doshas involved. This may be hereditary or acquired due to improper food habits. Kostha also plays an important role in the disease manifestation.

**DEHAPRAKRUTI (DEHA - BODY, PRA = BEGINNING AND KRUTI = CREATION OR BODY CONSTITUTION)**

Prakruti of a person is determined during fertilisation. The male seed called Sukranu (spermatozoon) and the female seed andanu (the ovum), through which the tridosas are transformed to the zygote. At the time of union the dosas in them undergo change in their proposition and unite together (fertilisation) to form the embryo from which the life gets started. These conditions influence the nature of the embryo in its characteristic features, which is known as Prakruti of man (natural human constitution). Body constitution explains the basic quality of the body based on the physical characters and activities, by that the predominance of three dosha in normal state is calculated. This helps us to predict and to infer the nature of body or the diseases to which he/she might be prone that we can be prevented or postponed with modification in the food and activities.

**SADRASA (SIX TASTES)**

They are swadu (sweet), amla (sour), lavana (salt), tikta (bitter), katu (pungent) and kasaya (astringent). The first, perceived taste by the tongue is known as pradhana rasa (primary taste) and the remaining tastes, sensed later and mildly are said to be anurasas (secondary taste). ([AHI Sutra Sthana, Sloga 14](#)) (Table 1.4).

<table>
<thead>
<tr>
<th>Table 1.4: Correlation between taste and tridosha</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Taste</strong></td>
</tr>
<tr>
<td>--------------</td>
</tr>
<tr>
<td>1. Sweet, sour, salt</td>
</tr>
<tr>
<td>2. Bitter, pungent, astringent</td>
</tr>
<tr>
<td>3. Astringent, bitter, sweet</td>
</tr>
<tr>
<td>4. Sour, salt, pungent</td>
</tr>
</tbody>
</table>

**SWASTHYA (HEALTH)**

The understanding of the normal body will be ease by understanding the below example. As mentioned earlier our body is made up of structures that carry nutrition and waste products to one place to another, these structures are in the form of channels. The channel like structures
are present all over the body in perceptible form, like GIT, blood vessels, etc. and also microscopic structures like neurons, intercellular spaces, etc. In this, the structure of the body, i.e. the channel is referred to kapha, the force that carries the nutrients and other products through the channel is vata. That which nourishes the structure by its metabolism in utilisation of the nutrient is the pitta (Agni). For the maintenance of the normal structure of the channel, vata and pitta must be normal. The natural property of kapha is snigda (oily) and sita (cold), which gives the structure to the channel, while sita is maintained by normal Ushna (agni). The normal functioning of the agni with proper movement of vata and utilisation of nutrition are responsible for the healthy maintenance of the structure (kapha, referred to body). Balancing the dosas, as well as good quality tissues (dhatus) and maintaining proper digestion with the elimination of excretions (malas) at proper time, are considered essential in Ayurveda for maintaining health (Swasthya). This is referred as swasthya or well-being.

**VIKRUTI (DISEASE)**

The disturbance in the above-mentioned state is called as vikruti (disease). It may be due to disturbances in vata or pitta that might be the root cause for the disturbance in the equilibrium. The snigda and sita nature of the healthy body can be disturbed basically with the induction of more Ushna. The property of Agni is Ushna and its karma (action) is burning. In any disorder in the system, agni plays an important role in maintaining the normal functional and structural aspects of kapha for which proper movement of vata is essential.

In a diseased condition the snigda nature of the body will be altered succeeded by sita nature. By this unhealthy change, gradually the body’s natural properties (Snigdha and Sita) are altered and there opposite qualities like Rooksha (dry) and Ushna (hot) properties get dominated. Any drauyja (substance) that has the properties of Rooksha and Ushna will totally damage the body as it happens in any visha (poison bite) or madya (alcohol). In such conditions there will be impairment of normal function, production and transformation of the dhatus leading to various disorders. In any chronic illness there will be emaciation of the dhatus due to the domination of Ruksha or reduction of snigda property this ends in dysfunctions. Any disease when continues for a long time vata will be dominant or the disease will be of vata nature. It applies even to prameha, though it is of Kaphaja uydhi (disease) in its later stage the dhatus get weakened and results in vataja prameha. In which the symptoms will be of affecting the marmas (vital points or organs) in the body like the heart, kidney, etc.

**PRINCIPLE OF TREATMENT**

As we discussed earlier, disease arises due to the change in the normalcy (either increase or decrease) of the doshas on the body. The general line of treatment will be bringing the vitiated doshas back to normalcy by giving drauyjas (drugs) or combination of drauyjas (yoga) that have opposite
properties that will increase or decrease the disturbed doshas. This is referred as the Samana Chiktita (palliative therapy) where we are normalising the doshas within the body by administering proper medicines and diet. Sodhana Chiktita (purificatory therapy) is elimination of doshas that are increased or accumulated in the body. A decrease of property also results in the increase of opposite properties. Under sodhana comes panchakarma (five purificatory therapies) as per Susrutha Samhittha they are vamana (emesis) that expels vitiates kapha, virechana (purgation) expels vitiates pitta, vasti (enema) that is used for rectifying vata, nasya (nasal drops) to clear the doshas above shoulder, Raktamokshana (blood letting) to remove the vitiates blood. Sodhana Chiktita can uproot the increased doshas that are harmful than the decreased doshas, hence it is given importance in most of the diseases. By the correction of the doshas, healthy dhatus are taken care that can be sustained at the present of proper Agni.

Due to the effect of disease there will be emaciation of the dhatus, which should be taken care by adopting the Brumhana Chiktita (nourishing therapy). It may be advised at the beginning of the treatment or at the end of the treatment as per the involvement of the dosha or nature of the disease. In vataja disease it can be administered as the main course of the treatment because the depletion of the dhatus is in excess compared to the other pitta or Kaphaja diseases where Brumhana Chiktita can be considered at the later stage of the treatment.

**Prameha (Diabetes)**

The literary meaning of Prameha is ‘Pra’ means excess, ‘Meha’ means urine, It has been classified into 20 types under which madhumeha (Diabetes Mellitus) is one of the classification, which means Madhu–honey and meha–urine, in Charaka Samhita.

**HISTORY OF DIABETES IN INDIA**

Diabetes in India has a long history since ancient time. The oldest reference of this disease dates back to more than 4500 years. The name of the disease found in ‘Devik yuga’ tells it has been known and treated by Indians long ago. It has been mentioned (in Chakradatta, Rasayana chapter, Sloga 195) that Lord Shiva has dictated a formulation for the treatment of prameha to his son Lord Ganesha. Another view claims that Lord Ganesha was afflicted by prameha because of his eating and working habits like taking lots of sweets (modaka) and sitting in same place for which his father gave him the formulation named ‘Siva gutika’ to rectify the disorder.

**Charaka Samhita (1500 BC)**

Charaka Samhita, Sushruta Samhita and Astanga hrdaya are together called the Vridhha Trayi or the Triad of Ancients. This text deals with aetiology, symptomatology, pathology, prognosis, complications and principles of treatment and management of eight major diseases including Prameha.
Charaka Samhita has described the disease prameha (pra-excess, meha-urine) in Nidana sthana (Chapters dealing with aetiology, symptoms and pathogenesis) and Chikitsa sthana (Chapters dealing with treatment aspects). The period of this Samhita is fixed by historians is about 1500 years BC. In Charaka Samhita, Prameha (urinary disorder) is classified into 20 types (Table 1.5) according to the dosas involved, in which madhumeha (Diabetes mellitus) is one of the classifications characterised by excess urination, which is sweet and turbid in nature. It is said that all the 20 types of prameha if not treated will lead to Madhumeha (Diabetes mellitus). The hereditary nature of the disease is also described in this Samhita, which shows that Indians knew the disease and its management, since ancient times.

Sushruta Samhita (10th Century BC)

Sushruta Samhita is the most representative work of the Hindu system of medicine. Sushruta (Fig. 1.3) is considered as the “Father of Surgery”. It is considered to be the only complete book, which deals with the problems of practical surgery and midwifery. It also explains about the origin and history of Ayurveda, different kinds of physicians, ayurvedic surgery, plastic and rhinoplastic operations, lithotomic operations, amputations, ophthalmic surgery, midwifery, dissection, practical surgery, practical anatomy. This Samhita describes several vegetable medicines and several instruments for surgery, inclusive of 101 kinds of blunt instruments, 21 sharp instruments and 14 types of bandages. It describes 20 different diseases of urine called prameha; as described by Charaka. The term prameha conveys the anomalies of urinary excretion.

After Charaka (Fig. 1.2) and Sushruta, many acharyas had written texts and commentary based on these two texts and other texts. Vagbhatta, the author of Astanga hradya and Astanga sangraha has added new herbal and herbo-mineral combinations for the treatment of prameha and so there was a gradual growth in the system of medicine till the 16th century AD.

PRAMEHA NIDANAM (AETIOLOGY)

Prameha is mainly caused due to increase in kapha dosa that produces excess kleda (body fluid) in the body. The factors, that may increase kapha are considered as the causative factor for prameha. It is mentioned in AH, Nidanasthana, sloka 1b-3 that foods, drinks and activities that increase medas (fat), mutra (urine) and kapha are considered as the main causes. Thus intake of excess
milk, curd, jaggery, sugar, meat of animals from marshland, cereals that are less than a year old and recently distilled alcohol, laziness, excessive sleep, inactivity all these increases kapha in the body, which may lead to prameha.

A study has proved the above-mentioned statement that “People who enjoy the happiness of life with better living conditions with highly sedentary habits, excessive use of certain food items like curd, milk, etc. and lack of exercise are more prone to become victims of madhumeha (Diabetes mellitus).”

CLASSIFICATION OF PRAMEHA (AS PER DOSHA PREDOMINANCE)

Two varieties of prameha are described:
1. Sahaja (Genetic), which is a genetically transmitted disorder, carried on to next generation by defects in the sperm and ova.
2. Apathyannimitaja (Acquired), which arises as a result of improper diet and activity.

Sahaja type is produced due to genetic defects that are defects in bija (sperm or ovum), called as Bija Dosa. This type according to Sushruta occurs in individuals with family history of diabetes. As per the recent studies we know that more than 50% of the subjects who had both parents diabetic develop diabetes compared to less than 16% of those with no family history.

As per the body type, prameha patients are divided into two groups for the treatment as Sthoola (obese and strong) and Krsha (emaciated and weak). According to Charaka Samhita, prameha are 20 types, which have the common symptom as excess urination and turbidity of urine. According to the predominance of dosa, prameha is classified into Kaphaja prameha (10 types), Pittaja prameha (6 types) and Vataja prameha (4 types).

Comparison of prameha with modern diagnosis of diabetes mellitus was reported in a study in which body type relationship to blood chemistry in diabetic patients, physical characteristics and blood chemistry of diabetic patients and glucose tolerance test results by Ayurvedic diagnostic group where considered. The result shows that the kaphaja prameha patients are similar to gestational diabetes, pittaja prameha patients are similar to type 2 diabetes and vataja prameha patients are similar to type 1 diabetes.

PRAMEHA SAMPRAPTHI (PATHOGENESIS OF DIABETES)

In prameha the pathology is well-understood as per Ayurveda, the important aspect in this is due which the srothodusti (vitiation of channels) occurs due to the vitiated medas, mamsa and kleda (body liquids). These acts as ama, which is undigested food material. Ama is the main causative factor for any disease; it may be produced at any level of the digestion (immediately after the digestion of food or during the transformation of food to rasa and so on). In the level of srothas (channels), these ama blocks the circulation of tissue elements, which leads to srothodushati (vitiation of the channels) and in turn, vitiates the dosas, which are getting obstructed locally
and spreads all over the body thus cause the disease. Ojas being the essence of all the dhatu gets vitiated by the result of the srothodushti.

All the dosas and dusyas (vitiated dhatu) get invariably vitiated in all types of prameha. Only those, which are vitiated in excess, are specifically and separately described in a particular type of prameha. In Madhumeha (Diabetes Mellitus) the increased vata, by its dry and astringent qualities
vitiates ojas, the most evolved tissue in the body, which supplies energy. This vitiating oja is excreted in urine, which is referred as Ojomeha. The vitiating oja, which cannot be utilised, accumulates in the body, giving rise to increased sweetness of the entire body.

**DIAGNOSIS**

Diagnosis of prameha is done with the rupa (symptoms) and purva rupa (premonitory symptoms) that are mentioned in the classical texts. Investigation was done mostly examining the urine by its taste and property of the urine by touch. Turbid urine or Avila mutrata was considered as a sign of prameha. Urine attracting ants and flies because of its sweet taste were considered to be prameha.

The premonitory symptoms as mentioned (Astanga hrdaya, Nidanasthana, slogs 38-39):

1. Excess of sweating in the body
2. Body emitting bad smell
3. Looseness of the body parts
4. Seeks a halting place while walking, wants a place to sit or while walking, lies down if he finds a sitting place and sleeps if he lies down
5. Heaviness of the heart, eyes, tongue and ears
6. Heaviness of the body
7. Increase in the growth of hairs and nails
8. Willing to have cold things
9. Dryness of the throat and palate
10. Always feels sweet taste in the mouth
11. Burning sensation in the palms and soles
12. Swarming of ants towards the place urinated by the patient

Presence of these symptoms or few of them are indication for the presence of prameha after which the predominance of the dosha is considered by the following investigations for selecting the appropriate treatment. In general there are two main investigative procedures used for the diagnosis of diseases. Astavidha pareeksha (eight types of investigations) and Dasavidha pareeksha (ten types of investigations) are two diagnostic procedures that are used for identifying the predominant dosa or the involvement of the dosas.

**Astavidha Pareeksha (Eight Types of Investigation)**

Nadi (Pulse), Malam (Bowel movement), Mutram (Urine), Jihwa (Tongue), Tuvak (Skin), Sparsha (Touch, temperature), Drik (Eye), Akriti (Body built).

**Dasavidha Prareeksha (Ten Types of Investigation)**

Dushyam (Vitiating dosha and dhatu), Desham (Place), Balam (Strength of the body (Rogi Balam))
and strength of the disease (Roga Balam), Kalam (Season), Analam (Digestion), Prakruthi (Body constitution), Vayah (Age), Satwam (Mental ability), Satmyam (Accustomed), Aharam (Food type).

Mutra Pareeksha (Examination of Urine)
This method of investigation has been mentioned in Yogaratnakaram in ashtavidha mutrapareeksha. In which it has been mentioned that the urine should be collected at the fourth part of night, i.e. nearly 4 am in a glass vessel and that should be examined at the time of sunrise. While collection of the urine the first and last portion of the urine must be omitted and the middle portion must be collected for the examination. Urine of the patient should be collected in a clean, wide glass/earthen vessel. Stir well and place in sunshine, after settling of the urine, place a drop of gingili oil and observe the change. Depending upon the pattern how the oil spreads on the surface of the urine the diagnosis and prognosis of the disease is made.

TREATMENT FOR PRAMEHA (Flow Chart 1.2)
Prameha is mentioned as one of the maharogas, the disease can be divided into stages as it has been classified into kaphaja, pittaaja and vataja prameha. The treatment should also be appropriately administered according to the stages in the pathogenesis of prameha.

In the first stage of prameha where there is excess production of kleda in the body due to accumulation of improperly formed kapha that is sent out of the body through urine. The treatment should be focused to reduce kapha using kaphahara drugs (medicines that reduces kapha).

In the next stage where there is improper utilisation of kapha due to improper agni or pitta. In this stage we can come across skin eruptions, burning sensation, etc. this should be rectified by using drugs that brings the pitta to its normal form for the better utilisation of the excess kapha.

The last stage is where the vata is in predominance due to emaciation of the dhatus and ends in weakness of organs. This is when we can see the symptoms of neuropathy, etc. develop. The treatment should be mainly to reduce vata. In first two stages we might treat kapha, pitta or both but not vata because the main causative factor in these stages are the excess kapha or kleda. But in the last stage since the damage caused to the dhatus is due to vata, it must be treated first or else it may be fatal.

The disease might be afflicting the structures, which cannot be treated by single drug but a schedule of treatment procedures to revive the damaged structure with different varieties of medicines suitable for the different stages of same diseases.

Three important aspects of therapy are Ahar (diet), Vihar (exercise) and Ausadha (medicine), that is medicines (Fig. 1.4).

Ahara (Diet)

Pathyam that is dietary modification is an important aspect of treatment. Pathyam includes specific foods and drugs from natural sources, which are beneficial in therapy of diabetes. Few dietic treatments of Madhumeha are (AH Cikitsasthana, Sloga 10b-14):
1. Various preparations of yava (barley) should be taken with honey.
2. Yava (barley) should be soaked overnight with decoction of Triphala (Emblica officinalis, Terminalia chebula, Terminalia belerica) again dried the same in daylight and roasted later. The flour of this roasted yava should be mixed with honey and taken with water or with sidhu (wine) also.
3. Vevu yava (bamboo seeds) or yava (barley) excreted in the dung of elephant or horse should be cleaned and eaten.
4. Roasted yava (barley), mudga (blackgram) and amalaki (gooseberry).
5. Decoction of Triphala.
7. Meat of animals that live in desert regions can be consume after roasting and drying in sunlight.
8. Fermented preparations like ayaskriti, madhvarishta and madhuvasava that are old are advised.
9. Drinking water should be prepared from the drugs of asanadigana, darbha or honey water.

**Exercise**

Ayurveda has well-explained the importance of exercise in the treatment of diabetes. The patient of diabetes who is poor and has no money to provide for his treatment has been told. He should walk by foot for a distance of one hundred yojana (800-900 miles approx) without using umbrella and foot-wear at the same time he must follow a very strict life or dig a reservoir of water by himself or wander along with a herd of cows depending on the dung, urine, etc. of the cows (Astanga Hrdaya', Cikitsa Sthana, sloka 36-37). This practice has been advised with the basis of following strict exercise that helps in the management of prameha. The patient of diabetes who is emaciated should be nourished well with drugs and foods, which do not increase fat and urine.

Exercise recommendation includes yogasanas (postures) and meditation. Maharishi Pathanjali the writer of yogasutra in 10,000 BC describes asana as “Sthira-sukham-asanam” that is asanas gives stable sense of well-being. There are asanas that stimulates the specific organ responsible for the disease, in prameha it is pancreas. Recent studies have proved that lifestyle modification
including dietary and physical activity can prevent diabetes. A study report on the effects of yoga asanas and pranayama in non-insulin dependent diabetes mellitus that included asanas like Surya Namaskara, Tadasana, Konasana, Padmasana, Pranayama, Paschimottanasana, Ardhachakrasana, Nivrittisana, Padmanubhasana, Sarvangasana and Shavasana suggest that yoga asanas have a beneficial effect on glycaemic control and lipid profile in mild to moderate type 2 diabetes.10

Ausadham (Medicine)

It includes fresh juices, Churnas (medicinal powders), decoctions, Asavas (fermented decoctions), Avalehas (lehyas) and pakas, medicated oils and ghees, vatis, Bhasmas and rasas preparations (Table 1.7). In AH1 (Uttara shtha, chapter 40, Sloga 48-58), while describing about Agryasangraha (group of best things), the best medicine for treating prameha is mentioned as Nisha (Curcuma longa) and Amalaki (Emblica officinalis), but this combination helps in treating prameha to certain level only. For rest we have to adopt different combinations and procedures. The line of treatment for prameha includes Shodhana (purificatory therapy) and Samana (palliative therapy).

Shodhana (purification therapy)

In strong patients, one should employ purificatory measures like administration of emetics, purgatives and enema. The purificatory therapies are selected depending on the dominant dosa, e.g. emetics in kaphaja, purgatives in pittaja and enema in vataja type of prameha.

Depending on the intensity of the dosa, mild, moderate or severe measures should be employed. In obese patients, emetics are contraindicated but purgatives and enema may be given. Patients with prameha usually require large doses of purgatives. Reappearance of symptoms of premonitory stage is an indication of repetition of panchakarma.

Before administering emetics and purgatives, preparatory therapy (preoperative) is a must, which includes Snehanam (oleation therapy) and Suvedhanam (fomentation therapy).

**FIGURE 1.5:** Performing Abhyanga (oil massage)
In which oil applications will be given externally by Abhyanga (oil massage), etc. and internal medication will be given for lubricate the body, which is called as Snehanam (lubricating therapy). This helps in liquefying the vitiating dosas and dhatus from the particular location as well as all over the body.

After Snehanam the body is made to sweat by fomentation, which is referred as Swedhanam (fomentation therapy), this helps in mobilising the liquefied wastes from the location and expel it through sweat or to the koshta (alimentary tract) from which it will be eliminated out of the body either upward or downwards direction (Table 1.6).
1. Vamana (Induced vomiting)
2. Virechana (Induced purgation)
3. Vasti (Medicated enema).

<table>
<thead>
<tr>
<th>S No</th>
<th>Treatment (Shodhana)</th>
<th>Meaning</th>
<th>Effect on Dosa</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Vamana</td>
<td>Induced vomiting</td>
<td>Decreases Kapha</td>
</tr>
<tr>
<td>2</td>
<td>Virechana</td>
<td>Induced purgation</td>
<td>Decreases Pitta</td>
</tr>
<tr>
<td>3</td>
<td>Vasti</td>
<td>Medicated decoction enema</td>
<td>Decreases Vata</td>
</tr>
</tbody>
</table>

Samana therapy (palliative therapy)
Pacifying the vitiated dosas with internal medication. It includes fresh juice, Churna (medicinal powder), medicated decoction, Asava (fermented decoction), Avaleha (lehya) and paka, medicated oil and ghee, gutika, vati, Bhasma and rasa preparations.

<table>
<thead>
<tr>
<th>Sl No</th>
<th>Form</th>
<th>Meaning</th>
<th>Few formulations</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Kashaya</td>
<td>Medicated decoction</td>
<td>1. Kathakakathirathi kashayam</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2. Nisakathakadi kashayam</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3. Triphaladi kwadham</td>
</tr>
<tr>
<td>2</td>
<td>Arishta and Asava</td>
<td>Fermented decoctions</td>
<td>1. Ayaskrti</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2. Rodrasava</td>
</tr>
<tr>
<td>3</td>
<td>Churna</td>
<td>Medicinal powder</td>
<td>1. Amrutha churnam</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2. Nisamalaki churnam</td>
</tr>
<tr>
<td>4</td>
<td>Ghrita</td>
<td>Medicated ghee</td>
<td>1. Dhanvantara ghrita</td>
</tr>
<tr>
<td>5</td>
<td>Pills / vati</td>
<td>Finely powdered medicines made in the form of pills</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Taila</td>
<td>Medicated oil</td>
<td>1. Dhanwantara taila</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2. Shcharaththi tailam</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3. Kottamchukkath tailam</td>
</tr>
<tr>
<td>7</td>
<td>Bhasma</td>
<td>Rasa preparations</td>
<td>Shilajathu rasayanam</td>
</tr>
</tbody>
</table>
Flow Chart 1.2: Management of *prameha* in Ayurveda

In chronic disorders the systemic weakness is the main feature of the management that can be treated better by *Rasayana* treatment (rejuvenation therapy). Proper *rasayana* treatment will nourish the *dhatus* and is good for health. In *Astanga hrdaya, Cikitsasthana*, *Silajatu rasayana* is mentioned (*Silajatu–Asphaltum punjabinum*). The person who consumes this *rasayana* daily in proper dose by taking boiled rice with the decoction of drugs of *asanadigana* (group of drugs starting with *asana*) and meat soup of desert like regions gets cured from all types of diabetes and many other disorders and diabetic complications such as skin diseases, tumours, etc. it is the best rejuvenative medicine for the diabetic patients who are rejected by the physicians. It has been mentioned that, if such a patient takes one *tula* of *silajatu* daily he will become a new man as he was.

**COMPLICATIONS**

*Charaka* explains the complications of *prameha* (urinary disorder), and says that with chronicity, *prameha* can give rise to complications like thirst, diarrhoea, fever, burning sensation, debility, anorexia, indigestion, boils due to sloughing of muscles like *alajī, vidradhi*, etc. (Table 1.8)
Table 1.8: Types of prameha pitakas (AH¹, Nidanasthana, Chapter 10, Sloga 27-34b).

<table>
<thead>
<tr>
<th>No.</th>
<th>Pitsa</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Saravika</td>
<td>An abscess which is raised at the margin and dipped in its centre, resembling an Indian saucer in its shape</td>
</tr>
<tr>
<td>2</td>
<td>Sarshapika</td>
<td>Pimples or pustules of the shape and size of mustard seeds</td>
</tr>
<tr>
<td>3</td>
<td>Kachchapika</td>
<td>An abscess, resembling tortoise shell in shape with severe pain</td>
</tr>
<tr>
<td>4</td>
<td>Jalini</td>
<td>An abscess studded with flesh and exudates, severe pain and has minute openings</td>
</tr>
<tr>
<td>5</td>
<td>Vinata</td>
<td>A large blue-coloured abscess appearing on the back or the abdomen, with slimy secretion and deep-seated pain</td>
</tr>
<tr>
<td>6</td>
<td>Putrini</td>
<td>A big eruption surrounded by many small ones</td>
</tr>
<tr>
<td>7</td>
<td>Masurika</td>
<td>Pimples to the size of lentil seeds</td>
</tr>
<tr>
<td>8</td>
<td>Alai</td>
<td>A dreadful abscess which is of a red and white colour, with blisters or exuding vesicles and burning sensation</td>
</tr>
<tr>
<td>9</td>
<td>Vidarika</td>
<td>As hard and round abscess as large as (full grown) gourd</td>
</tr>
<tr>
<td>10</td>
<td>Vidradhika</td>
<td>An abscess of the vidradhi type</td>
</tr>
</tbody>
</table>

Treatment for the Complications

Treatments for the complications are based on the type of dosa involved in the condition. Most of the complications mentioned below related to neurological and circulatory impairment are well-managed in Ayurveda. Since according to Ayurveda the complications are mainly due to the vitiation of vata and pitta, by treating these two the symptoms can be treated.

Studies had been done to prove the efficacy of the Ayurvedic medicines in the management of diabetes mellitus and its complications like neuropathy, etc. For example Dasamoola improves nerve conduction velocity (NCV) in sensory as well as motor nerves and facilitates “H” spinal reflex. It seems that drug is effective on “Apan-vayu (one of the 5 types of vata)” which regulates parasympathetic outflow of sacral plexus and also improves blood sugar level.¹¹

In the treatment of prameha pitaka (diabetic eruptions), it has been mentioned the unripened eruptions should be treated like inflammatory oedema (sopha) and the ripened eruptions should be treated by considering them as ulcer (vrnam) (Astanga hrdaya¹, Cikitsita sthana 38b-39). For treating these ulcers oil prepared from the group of drugs are also mentioned like oil of eladigana should be used for healing ulcers, decoction of araguadhadigana should be used for massage, decoction of asanadigana should be used for pouring over the body and vatsakadigana drugs should be used for intake in the form of drinking water and food.

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