



## THE CONCEPT OF DHATU AND THEIR ROLE IN PATHOPHYSIOLOGY OF DISEASES

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## ABSTRACT

Dhatu is known to be the Structural and functional unit of our body. It provides strength, Energy, and support to our body. Normal and abnormal functioning of *dhatu* is important for the overall growth of our body. In Ayurveda *Samhitas*, it is mentioned that when *dhatu* is in a normal state it makes the individual healthy. When it gets disturbed it causes disease. It is mentioned here the concept of *Dhatu*, its anatomy, Physiology, and Pathology and treatment which help us to know the critical aspects. The physiology of *dhatu* is well explained by *Dhatu Poshan Nyaya*. It is for 4 types as mentioned in *Samhitas* i.e. *Kshir Dhadhi Nyaya*, *Kedari Kulaya Nyaya*, *Khale Kapota Nyaya*, *Ek Kala Dhatu Poshan Nyaya*. With the help of these *Nyaya*, we understand the formation and nourishment of *Dhatu* from *Ahar Rasa*. When the Formation of *Dhatu* gets disturbed at any level as due to *Apathya Ahara Vihar*, *Agni dushti*, *Srotodushti*, or defective *Ahara rasa* it results in the formation of diseases. Hence the Pathology of diseases also depends on *Dhatu* which is well explained by *Rogamarga* and is similar to *Samprapti* of diseases. I tried to explain *Rogamarga* in an elaborate way to know the prognosis and level of diseases because due to advancing modern science the concept of *dhatu* and the pathway of diseases are unknown to common people. So, this article helps to make every one of the concepts which further help in the diagnosis and treatment of diseases.

**Keywords:** Ayurveda, Dhatu, Dhatu Poshan Nyaya, Rogamarga

## INTRODUCTION

Ayurveda, also known as “the science of life,” has its unique method for identifying diseases and describing their diagnosis as well as treatment. It consists of various principles and states that. This means *Dosha, Dhatu, and Mala* are the root cause of the body. These three play an important role in the human body as they are known to be a structural and functional unit of life. *Ahara* is the most important factor in life. Health as well as disease all depends on *Ahar*. A proper diet, taken properly can lead to better health, or else can lead to diseases. The *Ahara* becomes the *Ahara rasa* <sup>[1]</sup>, where it gets converted into seven dhatu with the help of *Jatharagni* and *Dhatwagni Vyapara*. This process of conversion and formation of *Dhatu* is well explained by *Dhatu Poshan Nyaya*. When *Dosh Dhatu Mala* is in a balanced state or an equilibrium state it leads to *Arogyata* and when they are in *Vikrit* state it causes diseases. *Dhatu Samyata* is known as *prakrit* or *sukha* (happiness) and *Dhatu Vyasamyata* causes *Vikar*. The Pathology of Diseases is

well explained by *Rogamarga* <sup>[2]</sup> i.e. the different pathways of diseases.

### AIM AND OBJECTIVE:

- To Overview the Concept of Dhatus According to Various Samhitas
- To understand the Physiology of dhatu in terms of *Dhatu Poshana Nyaya*.
- To understand the Pathology, Prognosis and Treatment of Diseases in Terms of Dhatu according to *Rogamarga*.

### MATERIAL AND METHOD:

Review of Literature is taken from several textbooks such as:

Various Samhita (Charak, Astanga Hridaya, Sushrut, etc),

Modern textbooks, and the internet

Explanation Of Dhatu According to their *Sthana, Karma, and Vyadhi* <sup>[3]</sup>

<i>Dhatu</i>	<i>Dhatu Co-Relation</i>	<i>Sthana</i>	<i>Karma [functions]</i>	<i>Kshaya</i> <sup>[4]</sup> [ <i>Depletion</i> ]
<i>Rasa</i>	<i>Lymphatics, digestive juices</i>	<i>Amasaya, Hridaya</i>	<i>Prinana (nourishing) Tushti (satisfying satiation), Rakta-pushti</i>	<i>Shram, Shosha, Glani, Sabda asahisnuta</i>
<i>Rakta</i>	<i>Haemopoetic</i>	<i>Yakrit, Pleha</i>	<i>Jivan, Ushmakara</i>	<i>Amla-sheet prarthana, Panduta, Sira-shaithilya</i>
<i>Mamsa</i>	<i>Muscular system</i>	<i>Bahya and Abhayan-tar adhering to avayaya</i>	<i>Dehalepa, Chestakara</i>	<i>Aksha glani: weakness of sense organ(eyes) Ganda sphika shushkata</i>
<i>Meda</i>	<i>Lipids</i>	<i>Sphik, Udara, Vapavahana, Vrkkas, Asthis</i>	<i>Snigdha, Dardhya,</i>	<i>Pleeha vraddhi, Krishangata, Akshano ayasa</i>
<i>Asthi</i>	<i>Skeletal system</i>	<i>Sakhas, Kati, Prsta,</i>	<i>Dharana, Majjapustikara</i>	<i>Asthi toda, Shrama, Sandhi shaithilya</i>
<i>Majja</i>	<i>Nervous system</i>	<i>Asthiabhyantra</i>	<i>Asthipurana, Snehana, Balakara</i>	<i>Asthi Shunyata Bhrama: Giddiness Timir darshana: Darkness in front of eyes</i>
<i>Sukra</i>	<i>Reproductive system</i>	<i>Vrisanas (testis), Medhra, Yoni</i>	<i>Dhairya (courage), Harsa (pleasure), Bala (strength), Garbhopatti</i>	<i>Chirat Praseka Vrushana-Medhra Vedana Daurbalya, Mukhashosha</i>

## **PHYSIOLOGY OF DHATU**

As the *Dhatu*s are known to be a structure and functional unit of life, knowledge about the concept of dhatu and their formation is important. *Ahar* gets converted into *Ahar ras* with the help of *jathragni* i.e. digestive fire and *Ahara Rasa* gets converted into *Prasad* and *Kitta Bhaga* with the help of *Dhatwagni*. *Agni* plays an important role in our body. *Agni* helps with digestion and metabolism and leads to the breakdown of food at different levels. This digestion process leads to the formation of *dhatu* and nourishment of the next *dhatu* is done by the previous dhatu and the waste material is excreted out after digestion, metabolism, and absorption. The concept of agni of Ayurveda, which refers to the manifold functions ascribed to pitta is at once comprehensive. It not only includes chemical agencies responsible for *Ahara-Pachana* in the *Kostha* (corresponding to gastrointestinal digestion), which leads to the separation of *Sarabhaga* (nutrient fraction) of the *Ahara* (food) from the *kitta bhaga* (the indigestible or undigested residue of the food) but the metabolic events- energy, synthesis and maintenance metabolism. In addition, it is seen to comprehend photo and chemo synthetic processes.

The *Ahara* gets converted into *Ahara Rasa* with the help of *Jathragni*, these *Ahara Rasa* consist of *Panchamahabhoot Parmanu*, *Vatadi Dosha Parmanu*, and *Kleda*. After the formation of *Ahara rasa*, the *Dhatavagni Vyapar* takes place leading to the formation of *dhatu* one by one. [51]

Eg. For the formation of *rakta dhatu* with the help of *rakta dhatavagni*, from *Ahara rasa* which contains *Panchamahabhoot parmanu*, *Vatadi dosha parmanu*, and *kleda*) it collects *mahabhut parmanu* (Prithvi), *sleshma*, *vayu parmanu*, and *kleda*. It forms *Poshya*, *Poshak*, and *Mala*.

- ✓ *Poshay* means the part of *dhatu* that forms the next *dhatu*.
- ✓ *Poshak* means the actual *rasa parmanu* which forms the *rasa dhatu*.
- ✓ *Mala* means the waste *parmanu* which is not useful.

A decrease and increase of *dhatu* occur, according to the *tikshnata* or mandata of the aspects of *pachagni*, present in *dhatu*. As the flame of forest fire tends to increase or decrease, according to the quantity of *indhana* [6], so also is the case with *dhatuparampara*. The Physiology of *dhatu* is well explained by *Dhatu Poshan Nyaya*.

### **What is Dhatu Poshan Nyaya?**

In contemporary science, the three basic building blocks of the human body are lipids, proteins, and carbohydrates. Proteins are necessary for the synthesis of genes, carbohydrates are necessary for cellular energy, and fats are necessary for the synthesis of bulk. It takes a very complicated method to make this incredibly important component from food. However, it has been simplified in terms of *Nyaya* in Ayurveda. This *Nyaya* provides us with a straightforward explanation of the formation of the *Dhatu*s. Additionally, how *Ahara rasa* is transformed into *Sapta Dhatu*s. The *Dhatu Poshan Nyaya* is of 4 types: There are 4 theories about the modes of dhatu formation and nourishment

#### **Kshir- dadhi Nyaya [Law of Transformation]**

It facilitates the glycolysis pathway and the Krebs cycle. According to this law, *rasa dhatu* changes into *rakta dhatu* in the same manner that curd changes from milk. Similarly, the successive phases of metamorphosis provide *mamsa*, *meda*, *asthi*, *majja*, and *sukra*. According to *Kshir Dadhi Nyaya*, *poorvadhātu* becomes *uttar dhatu* in the same way that milk becomes curd, curd becomes butter, butter becomes *ghrita*, and *ghrita* becomes *ghritmanda*. One *dhatu* can change into the next in seven days, and *rasa dhatu* gives rise to *shukra dhatu*. This theory's disadvantage is that progressive dhatu cannot form or become deficient if *rasa dhatu* becomes flawed.

#### **Kedari-Kulya Nyaya [ Law of Transmission]**

It facilitates active transport, which uses energy. According to this theory, tissue nutrition is linked to the irrigation of different fields by water from a canal. This law makes it clear that *dhatu*s are fed by *Ahara rasa* through specific *dhatuvaha srotas*, or canals, and that *dhatvagni* helps a part of *Ahara rasa*, called *dhatuposhaka ansha*, nurture the specific *dhatu*. This

law also implies that *rasa dhatu* obtains nutrition earlier than *mamsa dhatu* since *rasa dhatu* is closer to the channel and *mamsa dhatu* is farther away. Starting with the *shukra dhatu* and working her way up, the *aahar rasa* feeds each *dhatu* in turn.

#### **Khale - Kapota Nyaya [Law of Selection]**

This hypothesis suggests that the process of *dhatu*s feeding occurs through selection; it supports Passive Transport concepts such as diffusion, enhanced diffusion, osmosis, and filtration. The method by which individual *dhatwagnis* select particular goods from an *ahar rasa* that contains all of the nutritional components they need is known as "*Khale Kapota Nyaya*." When the pigeons have eaten enough grain, they go back to where they were before. In a similar vein, this concept asserts that *Ahar rasa* serves as each *dhatu*'s primary food supply. This concept states that the *dhatu*s get their nourishment by taking from *Ahar rasa* only what they require.

#### **Ekakala Dhatu Poshan Siddhanta [Dynamic Process]**

The physiological processes involved in the metabolic transformation of food are supported by it. Simultaneously included in *Ekakala Dhatu Poshan Siddhant* are *Kshir Dadhi Nyaya*, *Kedar Kulya Nyaya*, and *Khale Kapopan Nyaya*. We can comprehend the development of *dhatu* and their sustenance with the aid of this *Nyaya* that was previously discussed. Tissue Nutrition can be possible with the help of *Srotas*, *Agnibala*, *Kalayoga*, *Aaharsaushthava*(Diet), *Pra-kriti*( Psychosomatic Constitution). The spaces between the capillary wall and the tissue spaces are filled with tissue fluid which filters or oozes through the wall – through *ayanamukha* of *srotamsi* (capillaries) This fluid is derived from blood plasma (*sthayi rasa dhatu*). A system of lymph vessels drains the fluid from extracellular spaces and this fluid in lymph vessels (*rasayani*) is known as Lymph. It may be noted that blood passing through tissues is confined to capillaries and in normal courses of events, it does not contact cells i.e. *dhatu*s. *Sakha to Kostha gaman* is known to be the physiological condition as *Sakha* means the outer layer of *Srotas* which is formed by

*dhatu*s and *kostha* is known to be the inner hollow part through which the *pramanu* of *dosha*, *dhatu*, and *mala* moves from one place to other. When the substances move from *Sakha* to *Kostha*, passive transport takes place. The substances enter with simple absorption or simple diffusion. Hence the movement from *sakha* to *kostha* is a normal phenomenon.

#### **PATHOLOGY OF DHATUS:**

*Samya awastha* of *Dhatu* provides *arogyata* and *visham awastha* leads to *vikriti* i.e. *Vikar*. Any changes in the normal state of *dhatu* or equilibrium state led to *Rog Utpatti*.<sup>[7]</sup> *Vyadhi* is caused by *Vikrit dosha* and is known as *gatatva* i.e. it leads to diseases, but the *Rog Utpatti* is not possible until it gets space or a place to reside. Hence the *dhatu*(tissue) provides a place for the *dosha* to stay. When the *Dosha Vikriti* occurs by *Agni dushti*, it results in the accumulation of *dosha* in Tissue or *Dhatu*s. This is proceeded by *Kha-vaiguniya* (*Sroto Vaiguniya*) leading to *Sroto-rodha* and in consequence, the obstruction to the free flow and circulation of normal *dosha* and *dhatu*s and the retention of *malas or dosha* in the *dhatu* concerned, leading to an interaction between the *dosha* and *dhatu*s of the locality where the obstruction occurs. This phenomenon is termed as *Dosha-Dushya Sammurchana*. This site, where *Dosha-Dushya Sammurchana* takes place is stated to be the site where the process of disease is initiated corresponding to the *sthana samshraya* phase of *kriya Kala*. The *sroto-rodha* is caused by *srotodushti* which is known to be the pathogenesis of diseases. There are 4 types of *Srotodushti* mentioned in various *Samhitas* in *Ayurveda*.

- ✓ **Atipravritti:** Excessive flow as in *Bahumutra*, or polyuria, resembling *Prameha* or diabetes mellitus and insipidus.
- ✓ **Sanga:** Diminished flow as in *Mutrakriccha* (*Anurea*, *Krichhartava*).
- ✓ **Granthi:** Dilatation of veins causing obstructions to normal flow through *srotas* as in *Thrombus* in blood vessels, and *Urinary calculi* obstructing urine flow.

- ✓ **Vimargagaman:** Flow of liquid in the affected area through alternative channels as in Intestinal Obstruction (Vomiting of fecal material)

Thus, impairment of *Agni* may in turn contribute to *Srotodushti* and initiate the process of disease at the site of occurrences. When the Substances move from *Kostha*(inside) to *sakha* (outside), it is known to be a pathological condition caused by disturbance of *srotas* <sup>[8]</sup> i.e. *srotodusti*. The pathway for the manifestation of diseases is known as *Rogmarga*.

### **ROGMARGA:**

- *Rogmarga* is formed by two words “*Rog*” and “*marga*.”
- *Rog* is known as any deformity or *Vikriti* affecting the *Dosh*, *Dhatu*, and *Mala* of our body. It can be of different types as mentioned in Samhita according to different sub-divisions. It is also known as *Vikriti* or *Vyadhi*. *Rog* is caused not only by *Apathya Aahar Vihar* but also by many causes such as when *dosha* enters *dhatu*s which lies in depth, the persistence of *doshas* in one place, and having *marma upghati* form.
- *Marga* is known as the channels or *Srotas* through which substances move from one place to another. The concept of *Rogamarga* was elucidated by *Acharya Charaka* within the framework of *Tisraishaniya Adhyaya* in *Nirdesha Chatuska Sutrasthana*. All that *Roga Marga* is a pathway that shows the pathological state of *dosha* (toxins), which motivates in a certain way and has a particular affinity for the tissues and organs that are chosen.
- According to *Chakrapani*, it is emphasized for the interpretation of *Sadhyasadyata* (Prognosis), and *Chikitsa bhedartha* (therapeutic application), according to *Madhukoshakara*.
- Understanding the anatomical, physiological, and pathological characteristics of *Rogamarga* is essential to appreciating its significance in *Roga*.  
It is imperative to possess a sufficient understanding of the pathophysiology of diseases to

effectively manage them. This is possible with the right comprehension of *Rogamarga*. Thus, through *Rogamarga*, the occurrence, progression, and recurrence of *Vyadhi* are demonstrated.

- *Roga Marga* is classified into three types i.e. ***Shakhagat or Bahya Rogamarga (External Pathway)***

*Roga* make *gaman* on *bahya* or *twak ashrit raktadi dhatu*. It is mentioned in Samhitas that the *raktadi dhatu* and *twak* are known to be *Bahya Rogamarga*. The name *Sakha* is given to describe the branches and compared with the branches of the tree as *dhatu* spread all over the body like branches. This *rogamarga* gives the meaning of pathway of external disease. *Twak* means the *twak ashrit rasa dhatu*, it means *bahya rog marga* only contains *Twak ashrit dhatu* which are known to be external layers. Similarly, *rasa* is considered as the moola which helps in the development of succeeding *dhatu*s. When the *Vikriti* of *dhatu* is involved directly in the formation of any diseases they are included in *Bahirmarga Vyadhi*. *Apathya Ahar vihar*, defects in *ahar rasa*, *Agni dushiti*, and malformation of *dhatu*s are included here. For example: *Dhatu pradoshaj vikar* , *Dhatu kshaya*, *Dhatu Vikriti* is included in this type of *rogamarga*. In Samhitas, all types of skin diseases and the diseases that are located externally are included in *Shakhagat*. Diseases such as *Galaganda*, *pidika*(boils), *Alaji*(Diabetic boils), *Apachi*(Socrofula), *Visarpa*(Erysipelas), *swathu*(Oedema), and *Gulma*. In *Chakrapani* it is stated that the word *bahirmarga* is mentioned for *Visarpa aadi vyadhi* because they are present externally as well as internally. But here only mentioned external diseases. Similarly, *Gulma* mentioned here are those which are lifted towards the outside and ripe (*Paka*) outside are known to be *Shakha Ashrit*.

### **LEUCODERMA** <sup>[9]</sup>

Leucoderma is known to be a general whitening or white patches in the skin layer. It is also called Achromoderma, is a clinical sign describing a localized area of white depigmented skin due to the total loss of epidermal melanin. Loss of skin color is due



to reduced production of melanocytes. This skin condition causes the cells that produce melanin to gradually die. Regrettably, this results in areas of skin anywhere on the body losing pigmentation. This is a severe case of uneven pigmentation in which melanocytes are specifically targeted and killed. Melanocytes are specialized skin cells found in the epidermis that generate melanin, the pigment that serves as protection. The psychological and emotional stress that this illness induces is one of the reasons it has generated attention. It is not, however, a life-threatening illness or harmful to your health. As these diseases originate externally i.e. outer layer of the skin (*Twak*), so leukoderma is included under *Shakha gat* or *Bahir Rogmarga Vyadhi*. And as it doesn't involve *Abhyantra dhatus* they are known to be *Vyadhi* that are cured easily.

Leucoderma is known to be *Kilas Vyadhi* in Ayurveda which is given in *Kustha Prakaran* and said that it is *Twakashrit Vyadhi*. All conditions of *bahir rogamarga vyadhi* are of *Sukshma ama rasa* (acute condition) originated and manifested. *Sukshma ama rasa* condition means the *ama*, which enters into the circulation spreads all over the body and causes disease. **Marmasthi Sandhi or Madhyam Roga Marga (Middle pathway)**

*Marmasthisandhi* is known to be the *Madhyam rogamarga* as it involves *marma*. *Madhyama rogamarga* is produced by the *Gati* of vitiated *Doshas* through *Marmasthi sandhi*. This includes the *Mahamarma Basti*, *Hrudaya*, *Shira*, *Asthi*, and *Sandhi*, along with related *Sira*, *Snayu*, *Kandara*, *Dhamani*, and *Kurcha*. According to *Samhitas*, the structures included in this *Roga marga* are *Marma*, *Asthi*, *Sandhi*, *Snayu*, *Kandara*, and the diseases are *Pakshavadha*, *Shosha*, *Ardita*, *Apatanaka*, *Rajyakshma*. *Marma*<sup>[10]</sup> is known as the seat of *Prana* (life or energy). If the *vatadi dosha* vitiate (endogenous factor) or exogenous trauma is inflicted on these *marma* points, the *prana* is disturbed immediately producing diseases leading to death or death-like symptoms. According to *Sushruta*, *marma* is an ana-

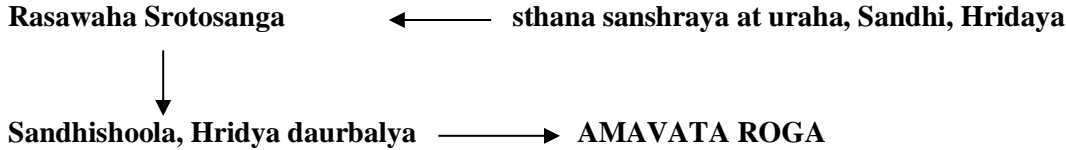
tomical area where the five anatomical structures i.e. *mamsa* (muscles), *Sira* (vessels), *Snayu* (ligament and nerve), *Asthi* (bone), and *Sandhi* (joint) are collectively present. The *Marma* point is the concentrated point of *Prana* (energy). *Marma* has its *Panchbhautika* constitution. Different types of *Marmas* consist of nerves. When this nerve gets damaged it causes diseases. For example-

- ✓ When the nerve roots of the sciatic nerve (*Kukundar* type of *Sandhi marma*) become pinched it causes **Gridhrasi** (*Sciatica*).
- ✓ **Facial paralysis (Ardita)** is caused by a cut in the facial nerve (*Vidhur* type of *Snayu marma*).
- ✓ Renal artery stenosis (RAS) is a narrowing or blockage of a renal artery (**Parshva sandhi marma**) to the kidney. It may cause kidney failure and high blood pressure. Nerve cells in the brain break down over time or early decay of nerve cells (**Huntington's disease**).
- ✓ Degeneration of nerve cells in the part of the brain called substantia nigra which controls movement (**Parkinson's disease**).
- ✓ **Angina pectoris (Vataja Hridya Roga)** is caused by reduced blood flow to the heart. It is a symptom of coronary artery disease.

One of the diseases that is difficult to treat when persists for a long duration of time and affects other organs i.e.

**RHEUMATOID ARTHRITIS** –Rheumatoid Arthritis is a long-term Auto-immune disorder that primarily affects joints. It typically results in Warm, Swollen, and Painful joints. Most commonly, the wrist and hands are involved, with the same joints typically involved on both sides of the body. The disease may also affect other parts of the body, including the heart, nerves, and blood. This may result in inflammation of the heart. Rheuma means heart and the complication of this type of arthritis leads to defects in the heart when persisting for a long duration. In Contemporary science, Rheumatoid Arthritis is known to be *Amavata*<sup>[11]</sup>, caused by

**Guru Snigdha sewan → Agnimandya → moves all over the body through various**



**Koshta gat or Abhyantara Roga Marga (Internal Pathway)**

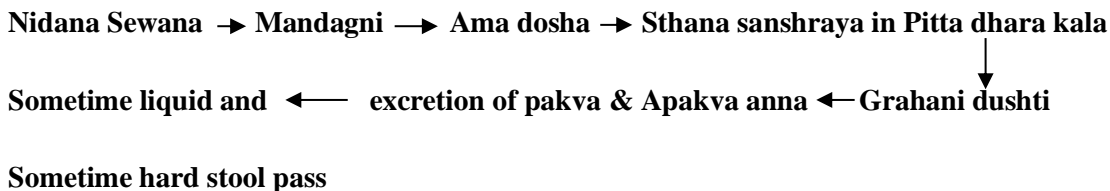
It is composed of all the *Kosthangas* (visceral organs), *Antah Koshta*, *Sarira Madhya*, *Mahagatra*, *Mahanimna*, *Amasaya*, and *Pakvasaya*, as well as *Mahasrota* (GI tract). The *Mahasrotas* is known to be a hollow portion of the body extending from the buccal cavity to the anus. Diseases including internally exhibited *Sopha* (swelling), *Arsa* (piles), *Gulma* (tumour), *Visrpa* (erysipelas), and *Vidradi* (abscess) as well as *Chardhi* (vomiting), *Atisara* (diarrhea), *Kasa* (cough), *Svasa* (breathing difficulties), *Jalodar* (ascites), and *Jwara* (fever) occur in this *marga*. It is interpreted as an Internal pathway of diseases. The diseases mentioned in *samhitas* are *Jwara*, *Murcha*, *Alasaka*, *Kasa*, *Gulma*, *Hikka*, *Arsha*, *Vishuchika*, *Anaha*, *Pleeha*, *Visarpa*, *Shvayathu*, *Vidradhi*, *Atisara*. Sushruta mentioned *koshta* in a way in which it includes *Amashaya*, *Pakwashaya*, *Agnashaya*, *Mutrashaya*, *Rudhirashaya*, *Hridaya*, *Unduk*, and *Phuphusa*. *Koshta* is known to be a hollow part through which substances move from one site to another and the structures included are *ashaya* and the synonym of *ashaya* is *srotosama*. Hence any *Vikriti* in *Srotas*, hollow part, and obstruction in movement of substances to different body parts leads to *rog utapatti*. The disease caused by *sroto dushti*, *agni dushti*, and *kha-vaiguniya* are included in *koshta gat* or *abhayantara roga marga*. When the *Parmanu* of *dhatu* gets obstructed inside the hollow part due to increased *rukshadi* gun of *vata dosha* in *srotas* leads to the lodging of molecules of *dhatu* at one place (*sthan sanshraya*) as a result of this the *parmanu*

starts moving towards the opposite direction (*Vimar-gaman*) called *margaavrodha udhiranam* causing diseases which are difficult to treat when it enters (deep) *abhayantar dhatu*. It is mentioned in *Chakrapani*, that diseases at *Twakashrit Rasa* are *shakha gat*, at *Hridaya ashrit rasa dhatu* under *Marmaasthisandhi Gat*, and *Yakritadi gat dhatu* are known to be *Antar margi Vyadhi*(*Abhyantara Roga Marga*). It is mentioned that *koshta* is divided into three parts i.e. *Urdhava Amashaya*, *Adhoamashaya*, and *Pakwashaya*.

The functional division of *Mahasrotas* will be as follows – *Amashaya* (stomach), *Pakwashaya*(large intestine), and *Pachyamashaya*( between *amashaya* and *pakashaya* i.e small intestine). The *Pachamanasaya* is also known as *Grahani*.

**GRAHANI (IBS)**

*Acharya Sushruta* describes the *Pittadhara Kala*, located between *pakwashaya* and *Amashaya*, as the site of *Grahani*, a disease caused by the *Agni dosha*. The *Agni*, *Jatharagni*, is located in the gastrointestinal tract and plays a vital role in the digestion and absorption of food. *Acharya Vagabhatta* states that *Jatharagni's* function is based on *Grahani*, and vice versa. *Grahani vikara* causes *Agni Vikaras*, leading to *Grahani Vikar* or deformity. The main cause of *Grahani roga* is *Virudhaya*, *Apathya Ahara vihar*, *vegadharan*, and *manshika karan*, which leads to *agni dushti*. Nowadays, exertion, over-eating, and stressful conditions can lead to *agni vikar*, causing *Ama* formation and *Grahani Dushti*.



↓  
**GRAHANI ROGA**

**IBS** Means the Inflammatory bowel disease of Gastrointestinal tract. It is psychosomatic.

<b>Kostha</b>	<b>Normal function</b>	<b>Abnormal Function</b>	<b>Symptoms</b>
Urdhva amasaya	Madhura Avastha paka	Suktapaka (Fermentation)	Guruta
	Amla Avastha Paka Bhinnasamghata Anna Mardava Karana	Apakvanna (non-digestion of food)	Utkleda Akshikuta sotha Udgara
Adho Amashaya	Amla Avastha Paka	Apakavanna (non-digestion of food)	Bhrama
	Rasasoshana	Ama Formation	Murcha
	Sarakitta- Vibhajana	Bahupicchilla	Osha Chosha
	Drava soshana	Daurgandhya(Foul smell)	Amla Udgara
	Mala mutra Vibhajana	Atidrava soshana	Shoola

**PROGNOSIS OF VYADHI**

Acharya Chakrapani and Gangadhara, two Ayurvedic commentators, discuss their opinions on the *Sadhyasadhyata* of Rogamarga.

- ✓ According to Gangadhara, the diseases of *Madhyama Rogamarga* (middle pathway) will be *Krichhasadhya* (difficult to cure) or *Yapya* (relieves but does not cure),
- ✓ *Abhyantara Rogamarga* (internal pathway) will be *Sukhasadhya* (easily curable), *Krichhasadhya*, or *Yapya* or *Asadhya* (incurable), depending on manifested symptoms.
- ✓ Serious issues will arise from *Madhyama Rogamarga* diseases.

**TREATMENT OF VYADHI ACCORDING TO ROGAMARGA**

*Madhava Nidana Samhita* mentions *Rogamarga* for the aim of *Chikitsa Bhedartha*.

Since vitiated *Doshas* pass through *Rogamarga*, a thorough comprehension of it is essential to stop the pathological process. Through *Rogamarga*, the vitiated *Dosha* travels and disperses. Thus, the *Rogamarga* idea is critical to the effective treatment of a disease.

[12]

***Abhyantara Rogamarga***

- ✓ The primary cause of the illnesses associated with *Abhyantara Rogamarga* is *Jatharagni Mandya*. Increasing digestive fire should be the goal of the therapeutic strategy. Various therapy techniques, such as *Deepana*, *Pachana*, *Vamana*, or *Virechana*, should be used depending on the illness.
- ✓ It is known to be *sthula amarasa* condition in which the body always tries to eliminate it in either way, if it is in *amasaya* it causes *chardi*, and *adhobhaga* it causes *atisara* hence the *chikitsa* for this should be *vaman* and *virechan*.

***Madhyama Rogamarga***

- ✓ The disorders that are prevalent in *Madhyama Rogamarga* are characterized by severe pain, abrupt loss of function, and persistent stress-related manifestations. *Shodhana* will be the course of treatment in this case. Nevertheless, when *Marma* is involved when combined with *Basti Chikitsa*, *Paripalana* of *Marma* is highly efficacious. *Nasya* can, however, be used to cure *Shira* illnesses including *Ardita*, *Manyastambha*, *Pakshaghata*, etc.



- ✓ This consists of ama and nirama conditions. In this condition both *sthula / Sukshma ama* condition treatments should be followed

### **Bahya Rogamarga Vyadhi:**

*Dhatvagnimandhya* (slow metabolism) is the outcome of *Ama* development in the case of *Bahyarogamarga* sickness. As a result, *Snehana* and *Swedana* should assist in returning morbid *Doshas* to their original locations. As it is known to be *Sukshma ama* rasa condition the *chikitsa* should be *Langhana, Pachana, Dipana, Doshavasechana*. All *tikta Dravya* which are best in *twak roga* should be administered.

### **TREATMENT OF DHATU**

Rasaj Vyadhi: Langhan

Raktaj Vyadhi: Virechana, Upwasa, Raktamokshana

Mamsaj Vyadhi: Sansodhana, Sastra, kshar, Agnikarma

Medaj Vyadhi: Apatarpana chikitsa

Asthiashrit Vyadhi: Panchkarma

Majja and Sukraj Vyadhi: With the use of Madhur and Tikta rasa, Vyayama.

## **DISCUSSION**

*Dhatu* is known to be the structural and functional unit of our body. The anatomy, physiology, and pathology of dhatus are important and *Dhatu* are responsible for strength as it is known to be root and when it gets disturbed it spreads disease. The physiology of *dhatus* is well explained by *Dhatu Poshan Nyaya* where it is mentioned how seven *dhatus* formed and got nutrition.

The Pathology of *dhatu* is very important as it is the root and when the root gets injured whole tree will die, here root is *dhatu* and the tree is our body. The Causes of disease are *Agnidushti* and *Srotodusti*. The detail of Pathology is explained under *Rogamarga*. In all three types of *rogamarga*, *ama* formation occurs hence in all types *ama chikitsa* should be followed there after the specific treatment of disease comes under each *roga marga* should be given. And as the most important cause of *ama* formation is mental stress, the diseases of all the three *rogamarga* are psychosomatic hence treatment should be given which helps in relaxing the mind. In Ayurveda, the

psychosomatic is correlated with *mana*, which is one type of *ekadash indriya*.<sup>[13]</sup> In psychosomatic disorder, *Vishaya* of *Mana* gets disturbed. *Vishaya* are *chintya, vichar, uhya, dhya, sankalap*<sup>[14]</sup>. When this all gets disturbed, it causes psychosomatic disorder.

**CHINTYA:** The thought that goes to the mind as to whether or not to do an action.

**VICHAR:** The determination of the state of an object by the cause of origin.

**OOHYA:** To infer based on probability.

**DHYE:** The subject of knowledge of emotion, i.e. thought.

**SANKALAP:** Reaching a certain conclusion on the basis of merits and defects.

When a person loses all their control to think about *Vishaya* (subject) of *Mana* they don't able to live a healthy life.

Ayurveda posits that diseases are not only physical but also mental, affecting the body's constitution (*Dhatu*), which provides stability. When *Dhatu* is disturbed, diseases can occur. The prognosis of these diseases is explained by the *rogamarga*, which aids in treatment and recovery. The *rogamarga* is considered the *Samprapti* of diseases. In *kosthagat vyadhi* as it involves organs hence diseases of the liver, kidney, stomach, etc come under this type of *vyadhi*. Any disease in which there is blockage of water comes under *kosthagat*.

- ✓ **Gall stone**
- ✓ **Abscess in liver**
- ✓ **Pyloric Obstruction**
- ✓ **Retention of Urine**
- ✓ **Hemorrhoids**

In *Sakhagat* it involves the outer layer, which is formed by *dhatu*, hence the diseases such as *Dhatu Pradoshaj Vikar, Dhatu kshaya, Dhatu Vriddhi*.

*Directly or indirectly* the pathology of the disease involves a pathway according to the severity and involvement of *Dosha, Dhatu, and mala*. Hence *rogamarga* is very important for the treatment.

## **CONCLUSION**

*Dhatu* is a crucial element of our body. It provides strength, creates energy, and, when disturbed, causes disease. In the present era, with the advancing technologies and the field of modern science, the

knowledge of Dhatu given in Ayurveda is unknown to common people. The pathophysiology of dhatu is well explained by *Dhatu Poshana Nyaya* and *Roga-marga*. This article makes us aware of people by giving appropriate knowledge about dhatus, their physiology, pathology, and prognosis and treatment, which further helps to live disease-free lives.

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