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DIFFERENTIAL DIAGNOSIS ON AMAVATA, SANDHIVATA, VATARAKTA W.S.R. TO RHEUMATOID ARTHRITIS, OSTEOARTHRITIS AND GOUTY ARTHRITIS PARTICULARLY

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ABSTRACT

According to *ayurveda* concept, the inequality of basic constituents causes different diseases. The balance of different fundamental elements in the body (*sharira*) is the sign of good health. *Ayurvedic* remedies are found very effective and useful to sustain the equilibrium. *Amavata, sandhivata, vatarakta,* etc are few *vata* associated diseases. The *nidana* and *lakshana* of the diseases are entirely different however all the diseases affect the joints in the body. Whenever the function of *agni* is disturbed in the body, *ama* is produced. Such produced *ama* gets together with *dushit vata / prakopit vata* and circulates and gets stuck in *kaphasthana* i.e. *sandhi* and *amavata* is developed. Elderly age, unhealthy diet like junk food and hectic journey by vehicle etc. overall aggravates disease like *Sandhivata*. The "*dhatukshaya*" leads to aggravate *vata* and the aggravated *vata* gets accumulate in the joints (*Sandhi*) resulting in *sandhivata*. Similarly, the disease of joints which involves *rakta, asthi*, and *dhatus* are considered as *vata-rakta roga*. The *nidana*, symptom, *samprapti ghatak* and differential diagnosis of the *vyadhis* are deliberated in detail along with their correlation to modern allopath system.

KEYWORDS: Joint disease, Arthritis, Vata vyadhi, Differential diagnosis, Sandhigata roga.

INTRODUCTION

Different type of joint diseases such as *amavata*, *sandhivata* and *raktavata* etc is mentioned by various *ayurvedic Acharyas* in their *Samhitas*. Though, mostly *vata* is responsible for control of all the central nervous functions in the body and it is responsible for all the movements in the body accordingly responsible for these diseases. Diseases caused by *vata* in its vitiated condition is called "*Vatavyadhi*." The word *vatavyadhi* itself indicates the meaning of diseases caused due to *vata*.^[1]

The *ayurvedic* science believed on the entities like *dosha, dhatu* and *mala. Tridoshas*, which are *vata, pitta* and *kapha* are called as the *Tristhuna* by *Acharyas*.^[2] Among these three, *vata* is the most important one. *Vata* is the only *dosha* which is responsible for vitiation of other two *doshas* as well as the *dhatus* and *malas*. It is also said that *pitta* and *kapha* are *pangu* (lame) without the involvement of *vata*^[3] *Acharya* Sushruta has called it as "**Swayambhu bhagwana**".^[4] It is the cause of origin, existence and destruction of all living beings. *Ayurveda* is mostly based on three *Doshas i.e. Vata, Pitta* and *Kapha*.^[5] The primacy of *vata* is prominent in *Tridosha. Vayu* is told as *Ayu, Jeevan* and *Bala.* When these three *Dhosas* are in equilibrium then they become *Niroga* and

vice-versa. Due to various causative factors, *vata dosha* gets vitiated which in turn vitiate the *dushyas* and cause *vyadhi*. A comparitive study of the these *vatavyadhies* are needed for the proper understanding of the concept of *vatavyadhi*, as they are the most severe types of diseases which afflict the individuals. A better understanding will be helpful in further diagnosis, treatment and prevention also.

Ayurveda is an ancient medical and health care science which is accepted universally to manage chronic diseases. However, new researches and revalidation of old *ayurvedic* principles mentioned in *ayurvedic* classics are in progress worldwide as *Ayurveda* is very old Genre which is related to our life style. ^[6] The text from the "Brihattyrees" (Sushruta Samhita, Charaka Samhita & Asthanga Samgraha) has demonstrated in detailed, the concept of *vatavyadhi* with many diseases and highlighted means of their signs-symptoms. However, this review is confined to the differential study of three important and identical joints diseases i,e *amavata*, *sandhivata* and *vatarakta*.

AIM AND OBJECTIVES

1. The conceptual study of joint disease

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- 2. A comparative review of *amavata*, *sandhivata* and *vatarakta*
- 3. Co-relation among trio.

This conceptual study will be helpful in understanding of pathogenesis of joint diseases specially *amavata*, *sandhivata* and *vatarakta* in successive stages.

MATERIAL AND METHOD

Different *Ayurveda* texts, journals, research papers, articles and authentic websites are referred to study the *ayurvedic* concept of joint diseases, *vivechana* of these diseases and its usefulness in manifestation and sequelae of the *amavata, sandhivata* and *vatarakta*.

Terminology of Sandhigata Vata

The term *sandhigatavata* is a combination of two words i.e,

- 1. Sandhi (Joint)
- 2. *Gata vata* (state of *vata* reaching)

Sandhi

The word *sandhi* is formed by the combination of the *sam+dha+kihi*

In Amarkosha, we get the meaning of the *sandhi* as *slesha* which means union or combination.

Sandhi is considered as union of two structures. Acharya Charaka mentions that sandhi is the samyoga sthana of the two asthis. The asthi sandhis are only considered as the sandhis and the union of peshi, snayu and siras are not considered.

It is the *moola sthana* of *majjavaha srotas* and also considered as one of the *Madhyama roga marga*. There are 210 *sandhis* are present in our body.

Concept of Gata Vata-

Gata vata is further comprised of two words Gata and Vata

Gata

The word *gata* denotes the state of *vata* in which covering, reaching, pervading is the meanings of *gata*.

Vata

Among three *doshas*, *Vata* is given more importance. The word *Vata* originated from the root.

"Va Gati Gandhanayo" which when suffixed by 'Ktan', gives rise to the word Vata. There are five types of Vata, ie Prana, Udana, Samana, Vyana, and Apana. They are having the separate functions like, Purana, Udwahana, Viveka (rasa mootra prithakkarana), Praspandana and Dharana. Vyana vata has been given the karma in different treatises such as-

- Praspandana (Sushruta)
- Shareera chalana (Dalhana)
- Gati, Apakshepana, Uthkshepa (Vagbhata)

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Sandhicharitha (Dalhanana)

- Vahana (Rasa samvahana)
- Panch cheshta. [Prasarana, Akunchana, Unnamana, Vinamana, Tiryakgamana]
- Pancha cheshta [Gati, Prasarana, Utkshepa, Nimesha, Unmesha]

Although these functions said to be done by *vyana vata*, it can be seen in other places also. *Praspandana karma* can be seen in *prana vata* during *shwasa prashwasa kriya*. By the above reference we infer that any act of *praspandana* etc. function happen only with the coordinated union of all the types of *vayu*. To maintain the coordinated union of *vayu*, *Vahana* is important which is performed by *vyanavata*. In *Ayurvedic* literatures, *Sthita, Milita, Gata* are to be considered as synonymous words.

The pathogenesis of *Gatavata* can be occurs in two ways **1.** *Margavarana janya* - due to *margavarana* there will be *srotorodha* which leads to *shoshana* of *dhatus* and also vitiation of *vata*. The vitiated *vata* situates the *srotas* which became *rikta* by *shoshana* of *dhatu*.

2. *Dhatu kshaya janya* - the *rikta dhatuvaha srotas* will be filled by the vitiated *vata*.

NIDANA

Nidana is defined as the factors which disturbs the active state of *doshic* equilibrium aggravates the disease is known as *nidana*. This *nidana* not only supports us to decide the line of treatment as well as prognosis of the disease but management of the disease also.

Amavata

Amavata ninda is of many-sided various *acharyas* mentioned their different views for the productions of *ama* in *amavata*. A separate *nidana* according to Madhavakara,^[7] is mentioned Besides these few *nidanas* which are etiological factors opined by Harita.^[8-10] and Anjana Nidana, the factors which vitiates *vata*, *pitta* and *kapha* are considered under *nidana*.^[11-12] These all above *nidana* are included in table No.1

Sandhivata

Ayurvedic texts describe the different *nidana* of *vatavyadhi*. However particular *nidana* for *sandhivata* is not mentioned by any *Acharya*. Therefore, common *nidana* for *vatavyadhi* along with *asthi* and *majjavahastroto dushti* is applied in *ayurvedic* literature.^[13] Different causative factors like *ahara*, *vihara*, *manasika*, *kalaja*, and others are reflected in Table No.1. These are considered as the causative factors for *sandhivata*. *Sandhivata* is a *vatavyadhi* hence it is *kastasadhya* as it occurs in old people and it is situated in *marmasthana*.

Vata-rakta

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Ayurvedic texts describe the different *nidana* of *vata-rakta*. *Vata-rakta nidana* is classified in *ayurvedic* literature ^[14-15] which is shown in Table No.1. *Vata-rakta* is primarily caused by *aharaj* and *viharaj nidana sevena*

i.e. Vataprapopaka hetu and Rakta prakopaka hetu. This prakopit vata leads to Raktadusthi and moves all over the body and sthanasamshraya occurs at Padangustha

sandhi due to its *Vyadhiprabhava*. This is expressed as *Anyonya avarana* by Chakrapani.

Caused by	Nidana of Amavata	Nidana of Sandhivata	Nidana of Vatarakta
<i>Aahara</i> (Related to dietary habits)	 Viruddha Aahara Viruddha Aahara (Incompatible food) Milk along kulatha, Panasa fruit with matsya Mixtures of equal quantities of honey & ghee Boiled curd ^[8] Snigdha Ahara followed by immediate exercise. Intakes of kanda mula, sakha and Unwholesome diet. 	 Aahara including Ruksha Laghu Sheeta 	 Excessive intake of kashaya, katu, tikta rasa etc. Snigdha, ushna,ruksha etc. aahar sevena in excess Alpabhojan, abhojan etc.
Vihara (Related to individual habits and environmental factors)	 Viruddha Chestha (Incompatible actions) Nischala (Lack of exercise) Excessive exertion Erroneous habits. 	 Ati Vyayam Langhana Abhighata 	 Mithya vihara etc. Ativyayam, vibhrama etc. SthulaAchankramansheelata etc.
Manasika	• -	 Chinta Shoka Bhaya 	• Related to physiological factors (<i>Krodha</i> etc.)
Kalaja	-	• Shishiira ritu Greeshma	-
Others	• <i>Mandagni</i> (Hypo functioning of <i>agni</i>)	 Weakness Injury Emaciation (dhatu kshaya) 	 Agantuj Nidana Exogenous factors (Abhighata etc.) Prakriti Based Nidana Miscellaneous factors (Sukumar etc.)

Lakshana

These diseases (*amavata*, *sandhivata* and *vatarakta*) usually attack in different joints of body and the few of the *lakshana* are seems common to each other. However,

symptoms are specific for each disease. The *lakshana* (Symptoms) of *amavata, sandhivata* and *vatarakta* are summarised in Table No. 2

Table 2: The Lakshana (Symptoms) of amavata	, sandhivata and vatarakta.
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Sr. No.	Lakshana of Amavata ^[16]	Lakshana of Sandhivata ^[17]	Lakshana of Gambhir Vatrakta ^[18]
1	Angamarda (Body ache)	Shandhishoola (Pain in joints)	Sandhi shotha (Joint inflammation)
2	Aruchi (Anorexia)	Sandhi shotha (Joint inflammation)	Daha (Joint are warmth)
3	Trishna (Thirst)	Vatapooranadritisparsha	Sthabdhata (Joint stiffness)
4	Malaise	Hatasandhi (Loss of movement)	<i>Kathinyata</i> (Limited joint movement)
5	Gourav (Feeling of heaviness)	Prasaranakunchanayoh vedana	Shyavtamratwacha (Very red purplish skin)
6	Jwara (Fever)	Atopa (cracking sound) (crepitus)	Abhyantara sandhi pida (Joint tenderness)
7	(Apaki) Indigestion	-	<i>Sandhi toda (</i> Thrombing and crushing pain <i>)</i>
8	Inflammation of body parts (Mainly joints)	-	Pakayukata (Infection in joint)
9	Aalasya (Lethargy)	-	Sphurana
10	Sandhi shotha (Swelling in multiple joints)	-	Itching, burning sensation,

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11	Sandhi shoola (Pain in joints)	-	Ache, extension, pricking pain,
12	<i>Gatra stabdhata</i> (Stiffness in the body)	-	Throbbing sensation & contraction.

Table 3: Differential Diagnosis of joint disease as per ayurvedic concept.

Factors	Amavata	Sandhigata vata	Vatarakta
Amapradhanya	Present	Absent	Absent
Jwara	Present	Absent	Absent
Hridgaurava	Present	Absent	Absent
Prone Age	Any age	Old age	Middle age
Vedana	Vrishchik danshavata and Sanchari	At Prasarana akunchana Pravritti	Mushika damshavat Vedana
Shotha	Sarvanga and Sandhigata	Vatapurna Driti sparsha	Mandala yukta
Sandhi	Starts from small joints, later effects big <i>Sandhi</i>	Weight bearing Joint (Knee Jt.)	Small sandhi
Upashaya	Ruksha svedana	Abhyanga	Rakta shodhana

Table 4: Samprapti ghatak for joint diseases i.e. amavata, sanshivata and vatarakta.

Samprapti Ghataka	Amavata	Sandhigata vata	Vatarakta
Nidana	Amaprakopak and vata prakopaka nidana	Vata prakopaka nidana	Vata and rakta prakopaka nidana
Dosha	Vata pradhan tridosha	Vata dosha especially. Vyanavayu, Shleshaka Kapha	Rakta dosha
Dushya	Rasadi dhatu, asthigata snayu, sira	Asthi, majja, meda	Rakta
Agni	Jatharagni, rasadhatwagni	Mandagni	Mandagni
Ama	Jatharagnijanya & rasadhatwagnijanya	-	Mandaganijanya
Srotas	Rasavaha, asthivaha	Asthivaha, majjavaha and / or medovaha	Rasavaha, asthivaha majjavaha
Udbhava Sthana	Amashaya	Pakvashaya	Amapakvashaya
Adhishthan	Asthisandhi	Sarva sandhi	Pada angushtha mula
Rogamarga	Madhyama	Madhyama	Madhyama
Srotodusti	Sanga	Sanga	Sanga

Table 5: Differential diagnosis for Rheumatoid arthritis, Osteoarthritis and Gouty arthritis.

Sr. No.	Criteria	Rheumatoid arthritis (RA)	Osteoarthritis (OA)	Gouty arthritis
1	Onset	Slow-90% Acute-10%	Slow	Sudden
2	Age	20-45 years	>40	>35
3	Family history	+ve	-ve	+ve
4	Symptoms	Inflammation in multiple joints, morning stiffness > 30 mins	Pain and swelling on major weight bearing joints, stiffness, crepitations, tenderness, enlargement of joint space	Polyarticular pain, swelling and Inflammation, tenderness
5	Mode of onset	Gradual	Gradual	Acute
6	Joints involved	Poly articular	Weight bearing joint	Metatarsophalangeal joints
7	Systemic feature	Auto immune diseases, rise in temperature, anemia	NA	NA
8	Pathological phenomenon	Auto immune vasculitis	Degeneration	Hyper uricaemia
9	Investigation	ESR-raised, X-Ray- soft tissue swelling	RA-ve, ESR -normal, X- Ray-narrowing of joint space	Serum uric acid raised

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Fig. 1: Visual images of Amavata, Sandhivata and Vatarakta.

DISCUSSION

The wide-ranging joint diseases which are generally complaint by patients are *amavata*, *sandhivata* and *vatarakta* as per *ayurveda* therapy however these are resembled with rheumatoid arthritis, osteoarthritis and gout respectively in allopath.

Amavata - *Amavata* is a chronic joint disorder accompanied by swelling of the synovial joints which involve *ama* and *vata*.^[19] It is a disease of *madhyam roga marga* as it affects *sandhi* and *hridaya marma*. Though *ama* and *vata* are the predominant pathogenic factors but the disease represents *tridoshic* vitiation. The affliction of *sandhis* by *vata dosha* in association with *ama*, reflects the equal role of both *dosha* and *dushya* in the causation of this disease.

Changing life-styles play a vital role in disturbing agni to manifest with several diseases. Agnimandya leads to formation of *ama* which is again root cause for many diseases. It can be produced as a consequence of jatharagnimandya, prathama dosha dushti janya which is referred as rasadhatvagnimandyajanya and malasanchayajanya. Unhealthy eating and behaviour habits in pre-existing agnimandya leads to further vitiation of ama which can be considered as rasadhatvagnimandyajanya ama or sama rasa dhatu which is said to gain *vidagdhata*. When it is carried with samavayu and takes shelter in kaphasthana-Sandhi, it produces amavata with sandhishoola, sandhishotha, sandhigraha, angamarda, aruchi, trishna, jwara, and gaurava. It may further produce complications as nidraviparyaya, bahumutrata, hridgraha according to dosha dushti.^[20-21]

Rheumatoid Arthritis (RA) - As per Allopath, Rheumatoid Arthritis (RA) is a long lasting auto immune disorder that primarily effects joints. One of the main problems in RA is joint inflammation. The joints swell and the cartilage protecting the end of the bones in the joints get damaged. Rheumatoid arthritis (RA) is a chronic systemic inflammatory polyarthritis that primarily affects small arthrodial joints of the hands and feet in a symmetrical pattern.^[22-24]

Sandhivata - Sandhivata is a disease which is very common and growing worldwide. As per Avurveda, such diseases belong to *vatavyadhi* category of disease.^[25] The prevalence of sandhivata is common due to genetic, infection, infestation, systemic environmental age related during different stages of the human life and so on.^[26] These joint diseases are emerging as main health problem in the present era and the disease of joints which involves Asthi and Majjavahastroto Dushti are considered Sandhivata as Sandhigat roga. The current life style not only disturb the healthy Aahar (Diet) but Vihar (daily exercise etc.) also. Elderly age, unhealthy diet like junk food and messy journey by automobiles etc. overall aggravates disease like Sandhivata. The "Dhatukshaya" leads to aggravation of vata and the aggravated vata gets accumulated in the joints (sandhi) resulting in sandhivata and patient suffer from severe pain and impairment.

Osteoarthritis (OA) - Osteoarthritis (OA) is a chronic disease characterized by deterioration of cartilage in joints which results in bones rubbing together and creating stiffness, pain, and impaired movement ^[27]. It is commonly affecting the joints in knee, hands, feet, and spine. In addition to this, it is relatively common in shoulder and hip joints. OA is related to aging. The common reason of disability in older adults is OA.^[28-29] Osteoarthritis (OA) symptoms often develop slowly and deteriorate over time. Signs and symptoms of Osteoarthritis (OA) include pain in joints throughout or movement, stiffness, tenderness when apply light pressure, loss of flexibility, grating sensation, bone spurs and swelling.

Vatarakta - *Vatarakta* is imbalance causes abnormal physiological disorders i.e. diseases. *Vata* is major responsible for almost all disease amongst *tridosha*, and *vata-rakta* is known as disease associated with *vata*. As name indicates, it is disease of *sammurchana* of *vata* and *rakta*. *Vata-rakta* also known as *adhayavata*, by *Acharya* Charaka. The name of disorder itself describe that it is

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more prevalent among *adhya* (rich people). In this disease aggravated *vata* is obstructed by aggravated *rakta*, and this obstructed *vata* is again aggravates *rakta*. Finaly these overall affects the entire *rakta* this occurs in conditions like, injury, fasting cumbersome journey and walking in hot climates. *Vata-rakta* is also known as *khuddaroga*, *vatabalasa* and *vatashra*.^[30-32]

Gouty arthritis - Gouty arthritis is the condition which causes recurrent episodes of joint inflammation, tissue deposition of uric acid crystals and joint destruction, it is marked by transient painful attack of acute arthritis initiated by crystallization of urea about and within joint and then eventually leads to chronic gouty arthritis. The most commonly affect joints. There is peeling and itching of skin around joints. Diagnosis should be conforming by serum uric acid level, synovial fluid examination and other procedures.^[33-34]

CONCLUSION

Amavata

Amavata occurs in all over the world in all races, genders, age, and climates. It is equated with Rheumatoid arthritis. *amavata* is caused due to amadosha and vatadosha. Ama produces metabolic disorders. amavisha is an important factor for the pathogenesis of the most of the diseases. Amavata occurred by combination of ama and prakupita vatadosha due to nidana sevana and agnimandya. The stage of vitiation of ama and aggravation of vata should be proper analysed. When amadosha undergoes to fermentation and forms Amavisha. This amavisha absorbed in the body through gastrointestinal tract due to its properties like sukshma, laghu and tikshana. Then amavisha circulates in whole body and produces many diseases. We should know about presence and absence of ama in a patient before commencing the treatment because in case of presence of ama (samavastha) and absence of ama (niramavastha), line of treatment is totally different.

Sandhivata

Osteoarthritis (OA) can be judiciously compared to sandhivata as per the description found in avurvedic classics. Sandhivata comes under 80 nanatmaj vatavvadhi described in charaka Samhita. This disease occurs mostly in movable joints where the "Khavaigunya" is more due to hyperphysical activity which leads to "Kshaya" (degeneration) of dhatu (tissue constituents) and "sleshaka kapha" (comparable to synovial fluid of the joints). This "dhatukshaya" leads to aggravation of *vata* and the aggravated *vata* gets accumulated in the joints (Sandhi) resulting in sandhivata. Acharya Charaka described this disease as "sandhigata Anila" with symptoms of "Shotha" (which reveals as air filled bag on palpation) with "Shula" on "akunchana" and prasarana (flexion and extension of joints).^[35-36]

Vatarakta

Vata-rakta which is resembled as gout in allopath health system is elaborately described in Charaka Samhita as an independent disease. The main causative factors for vatarakta are excessive intake of guru, lavana, stringent food stuffs, excessive use of pulses, alcohol, meat, sedentary life style, and psychological components such as excessive anger, emotional distress, mainly observed in Sukumar. Aggravated rakta quickly obstructs the path of already aggravated *vata*. On obstruction in the route of vata its gatis obstructed leading to further aggravation. This vitiates the whole *rakta* and manifests as *vata-rakta*. Various *pathya* and *apathya* mentioned by *Acharya* Charaka plays important role in its prevention. Changing lifestyle is causative factor for *vata-rakta*. So, Dinacharya & Ritucharya as mentioned in avurvedic texts must be followed for upkeep of health. Yoga by improving physical, emotional, mental and spiritual status plays a vital role in the prevention and management of vata-rakta. All the lakshanas of gambhira vata-rakta are similar to Gouty Arthritis so gambhira vata-rakta is nothing but a heterogeneous joint arthritis.

Comparatively Study

The differential diagnosis of the joint disease as per *Ayurveda* concept are mentioned in Table No. 3. The *samprapti ghatak* involved are stated in Table No.4 for these joint diseases i.e. *amavata, sandhivata* and *vata-rakta*. Similarly, the differential diagnosis with various criteria such as symptoms, mode of onset, joints involved, systemic features, pathological phenomenon and investigations are for equitant diseases in allopath i.e. with rheumatoid arthritis, osteoarthritis and gout respectively are shown in Table No.5 and detailed in general pathological differential analysis is given in Table No.6. The visual looks of these diseases are also shown in Fig. No.1

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