

## AMAVATA SAMPRAPTI WITH SPECIAL REFERENCE TO RHEUMATOID ARTHRITIS

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### ABSTRACT

Life comprises of states of health and diseases. Ayurveda, the unbeaten science deals with these states of life. Ayurveda incorporates both the preventive and curative aspects of human ailments, promising it to be a holistic science. The science of Ayurveda is renowned for healing of Musculoskeletal and Neurological complaints. It is feasible only through a proper comprehension of the etiology, pathology and ultimately the features of the disease. The following article “*AmavataSamprapti* with Special Reference to Rheumatoid Arthritis” is reviewed through Ayurvedic classics in integration to modern medical facts in the causation and the course of the disease *Amavata* with reference to Rheumatoid arthritis.

**Keywords:** *Amavata*, Rheumatoid arthritis.

### INTRODUCTION

Rheumatoid arthritis is a chronic systemic inflammatory polyarthritis that primarily affects small diarthroidal joints of the hands and feet in a symmetrical pattern<sup>[1]</sup>. The disease tends to be heterogeneous and seems to be variable in severity and unpredictable course<sup>[2]</sup>. Appropriate knowledge on the principles and manifestations of rheumatoid arthritis helps in the better comprehension and interpretation of the disease *amavata* told in Ayurvedic classics. Rheumatoid arthritis is the second most common form of chronic arthritis and affects approximately 1% of the population worldwide<sup>[3]</sup>.

**NIDANA:** Food is considered to be an indispensable entity for the human body. *CharakaSamhita* mentions the importance of food through stating that, body is derived from food and thus all the living beings are formed from food<sup>[4]</sup>. It is highlighted in *Samhitas* that an individual taking a beneficial diet is healthy and one con-

suming a harmful diet succumbs to various illnesses<sup>[5]</sup>. This can be understood as the reason for discussing *virudhaahara* as the first predisposing factor for *Amavata*<sup>[6]</sup>.

**AHARA:** *VirudhaAhara*<sup>[7]</sup> facilitates *doshaprakopa* and leads to the formation of *ayadatha rasa*<sup>[8]</sup>. This is a state of *amaavastha*. The same condition with chronicity is converted to *visha* and is possessing the trait as *ashukarivata*<sup>[9]</sup>, this state can be interpreted as the acute exacerbation of chronic stage of Rheumatoid arthritis. Therefore, *virudhaahara* can cause *doshaprakopa* which promote *agnimandya* or vice versa.

**VIRUDHA CHESTA:** *Chesta* can be better comprehended through the “*vyayama*” – physical exercise told in the classics. *Vyayama*<sup>[10]</sup> as *chesta* increases *vatadosha* with its reflection through its *gunas*. The right quantity of *vyayama* if performed can bestow strength for an individual. Therefore, an excessive indulgence in physical

activity increases the *rooksha*, *kharagunas* influencing *agni*. Excessive physical activity is grouped as one of the *nidanans* for *vata-vadyadhi*<sup>[11]</sup>.

**MANDAGNI:** *Mandagni* refers to a weak digestive fire. The relevance of this predisposing factor is the formation of *ayadartha rasa*. It leads to the formation of *amaavastha*, which in turn can trigger *doshaprakopa*<sup>[12]</sup>.

**NISCHALATA:** *Nischalata* refers to a state of inertia in inactivity. This can be comprehended in two levels. *Mano nischalata*<sup>[13]</sup> and the *shareeranischalata*<sup>[14]</sup>. Classical Ayurvedic treatises highlight the role of *manas* in producing *mandagni* and *ama*. *Shareeranischalata* refer to the sedentary lifestyle that is promoting *ama* through *agnimandya* and later, the *prakopa* of *dosha*.

#### **SNIGDHAM BHUKTAVATO HI ANNAM VYAYAMA KURVATASTATA:**

The *snigdhapadarthas* consumed carry long chain fatty acids or with a significant level of fat content. Such variety of food requires more digestive elements, improved circulation and stimulation. When the individual performs an increased physical activity, the circulation will be more in the peripheral parts of the body to release energy. This leads to a reduced core circulation. The fate is a diminished digestive activity<sup>[15]</sup>.

*Amavata* is a condition that can be triggered due to multiple predisposing factors. Hence, individually the *nidanans* may not be powerful enough to manifest into full blown disease. They are to be therefore comprehended as multifactorial in origin.

In contemporary science genetics plays a role in the manifestation of Rheumatoid arthritis. This can be inferred as the *rasa dushti* – *as rasa dhatu* is the prime entity to be formed<sup>[16]</sup>. In *rasa dhatudushti* – genes or amino acid sequences are not

properly arranged or formed. This is reflected in the functional and structural aspects of the body. The same can also hence lead to the manifestation of Rheumatoid arthritis<sup>[17]</sup>.

**SAMPRAPTI:** The above described predisposing factors contribute to *doshaprakopa* or and developing *amaavastha*, simultaneously or one after the other<sup>[18]</sup>. The *ayadartha rasa* or the *ama rasa* formed is distributed by the *vata-dosha* to different parts of the body – *shleshmasthana*<sup>[19]</sup>. It is mentioned specifically as *shleshmasthana*, because the *guna* of *ama* and *shleshma* are same. Therefore it initially manifests at the *shleshmasthana* like the musculoskeletal joints<sup>[20]</sup>.

*Madhukosha* mentions *shleshmasthana* as the *dhamani*<sup>[21]</sup>. Later with the chronicity, other *doshas* are also subjected to *dushti*. This brings addition of more symptoms with time to the existing disease. Distribution of *ayadartha rasa* by the *vata-dosha* results in developing *abhishyandata* to the body channels. At the same time *dhatu*s also get afflicted. Further, the individual manifests tiredness due to lack of nourishment or due to impaired *uttarouttaradhatuposhana*. Individual experiences heaviness of the body and are not able to perform his or her daily activities<sup>[22]</sup>.

Involvement of *hrudaya* and its impairment can be comprehended as because of circulation of *saama rasa*. Therefore, the circulation is deficient in nutrients. This creates more strain and work load to the heart, to pump more blood. There also can be an impaired nourishment of the body tissues. These factors contribute to other extra articular manifestations<sup>[23]</sup>.

The prominent features are associated with the joints or musculoskeletal system. From the contemporary science, the genetic mutation of HLA<sup>[24]</sup> area of gene DR1 – DW15, DW10, DW13, DW14

all can be referred to as the *rasa dush-ti*. *Rasadhatu* can be related to the defense system of the body. *Rasa* is predominant with *kaphadosha*<sup>[25, 26]</sup>. *Prakrutakapha* is *bala*. *Bala* can be acknowledged as *vyadhikshmatva*.

In the pathology of Rheumatoid arthritis lies altered *vyadhikshamatva karma*. In Rheumatoid arthritis a cascade of pathological events occur right from the activation of T – cells. T – Cells trigger the synovial fibroblast triggering the macrophages. T- Cells activate the B – Cells to produce the autoantibody immune complexes including rheumatoid factor and immunoglobulin. This in turn attacks the articular and extra articular parts. T – Cells also trigger macrophages followed by TNF- alpha. They produce the interleukins like the IL<sub>1</sub>, IL<sub>8</sub>, IL<sub>15</sub>, IL<sub>17</sub>, IL<sub>23</sub> and VEGF. This affects the endothelium of vessels, bone cells, chondrocytes and synovial fibroblasts. These inflammatory mediators contribute to the manifestation of pain, redness and edema<sup>[27]</sup>.

The stiffness arises due to the formation of lymphoid follicles within the synovial membrane followed by the pannus formation over and under the articular cartilage. This is progressively eroded and destroyed. Later the fibrosis or bony ankylosis may occur. The muscles adjacent to the inflamed joints will be flaccid and weak due to the release of TNF – alpha triggered by the macrophages. They also may be infiltrated with macrophages<sup>[28]</sup>.

**LAKSHANA:** The general features that are seen in the initial phase of the ailment are the *samanya Amavata lakshanas*<sup>[29]</sup>. They include body ache, anorexia, thirst, laziness, heaviness, fever, indigestion and swelling. As the disease become chronic, it is reflected with the *pravruddha Amavata lakshanas*<sup>[30]</sup>. They suffer from pain as if stung by a scorpion and swelling all over

the joints. It manifest in *hasta* – as in the proximal inter phalangeal joints, metacarpal joints associated with the ulnar deviation of metacarpophalangeal joints, boutonniere or button hole deformities. If the clinical disease remains active, hand function will slowly deteriorate. Synovial proliferation in and around the wrists occur, compresses the median nerve causing carpal tunnel syndrome. Chronic synovitis can lead to radial deviation of the wrists and severe cases to volar subluxation<sup>[31]</sup>.

Involvement of *pada* includes the metatarsophalangeal joints. Subluxation of toes at the metatarsophalangeal joints is common and leads to the dual problem of skin ulceration on the top of the toes and painful ambulation because of the loss of cushioning pads that protect the head of metatarsals<sup>[32]</sup>.

Involvement of *gulpha, trika, janu* and *uru* is common but generally occurs somewhat later than the involvement of small joints. Rheumatoid arthritis carries involvement in a symmetric fashion. Therefore rheumatoid arthritis is not only symmetric from one side of the body to other, but also symmetric within the joint too<sup>[33]</sup>.

*Shotha* and *anaha* can be comprehended as the swelling or a synovial cyst. They are seen as fluctuant mass around the involved joints – large or small joints. Synovial cyst from knee is the best examples of this phenomenon. E.g. Baker's cyst in the posterior knee. Rupture of Baker's cyst leads to the extravasations of the inflammatory contents into the calf thereby ultimately producing significant pain and swelling that may be confused with thrombophlebitis – pseudo thrombophlebitis syndrome<sup>[34]</sup>. Involvement of *shira* can be taken as the bony erosion and ligament damage occurring and leading to the subluxation of C<sub>1</sub> – C<sub>2</sub> articulation. Most often the subluxation

is minor and patients and care givers need only be cautious and avoid forcing the neck into position of flexion<sup>[35]</sup>.

So, wherever there is a synovial tissue *sandhi*, Rheumatoid arthritis may cause problems. They include temporal mandibular joint, cricoarytenoid and sternoclavicular joints. The cricoarytenoid joint is re-

sponsible for abduction and adduction of the vocal cords. Involvement of this joint may lead to a feeling of fullness in the throat to hoarseness or rarely to a syndrome of acute respiratory distress, with or without stridor, when the cords are essentially frozen in a closed position<sup>[36]</sup>.

Sl.No	Dhatu	Features
1.	Rasa	Fever; Swelling; Fatigue; Susceptible to infection
2.	Rakta	Normochromic normocytic anemia; Macrocytic anemia; Eosinophilia Thrombocytosis ; Vasculitis ESR; CRP; ANA
3.	Mamsa	Muscle wasting; Bursitis; Tenosynovitis Vasculitis; Episcleritis; Inflammatory myositis; Myopathy
4.	Medas	Rheumatoid nodules; Excess fat – free radical - inflammation
5.	Majja	Compression neuropathy; Peripheral neuropathy; Mononeuritis multiplex
6.	Asthi	Osteoporosis
7.	Shukra (Sarvadaihikashukra)	Wound healing

Patients with Rheumatoid arthritis have significantly increased morbidity and mortality from coronary heart disease. The reasons for this have not been elucidated. The involvement of *hrudaya* can be understood from this context. But, chronic inflammation with an elevated C – Reactive Protein, some of the medications used and sedentary lifestyle may be significant risk factors. Clinical manifestations of cardiac involvement directly related to Rheumatoid arthritis are uncommon. Rarely rheumatoid nodules develop in the conduction system and cause heart block. Pericardial effusions are common and are usually asymptomatic. Uncommonly, long standing pericardial disease resides in a fibrous pericarditis and constrictive pericarditis<sup>[37]</sup>. The characteristic features of Rheumatoid

Arthritis with reference to *dhatu*scan be assimilated from Table: 1.

Table: 1 *Dhatu* and its features.

**APPRAISAL:** *Amavata* does not merely point out to one disease. *Amavatasamprapti* is applicable for all those disease that are generating from *ama*. But, in the disease *Amavata*, the features mostly manifests in the *sandhi*. Moreover they are also associated with other extraarticular features too. The manifestation of symptoms depends on the location of stasis of *ama* due to the preceding *khavaigunya*. Therefore *Amavata* is a broad spectrum disorder, where rheumatoid arthritis reflects only a minor segment of the whole set of features of *Amavata*. This work shares a new perspective of understanding the whole disease of *Amavata* with reference to Rheumatoid arthritis. Un-

fortunately there is no one single finding on physical examination or laboratory testing that is diagnostic of Rheumatoid arthritis. Instead, the diagnosis of both *Amavata* and Rheumatoid arthritis remains a clinical one, requiring a collection of a proper history, physical examination added with the skill of the physician.

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