

## A REVIEW ON THE CONCEPT OF AMAVATA (RHEUMATOID ARTHRITIS) AS PER AYURVEDA

Kamath Nagaraj<sup>1</sup>, Patel Yashesh<sup>2</sup>

<sup>1</sup>Asst. Professor, Department of Shareera Kriya, Sri Dharmasthala Manjunatheshwara College of Ayurveda & Hospital, Hassan-573201, Karnataka, India.

<sup>2</sup>Asst. Professor, Department of Kriya Shareera, Shree RMD Ayurvedic College & Hospital, Valsad, Gujarat, India

Email: [nagaraj.kamath1989@gmail.com](mailto:nagaraj.kamath1989@gmail.com)

### ABSTRACT

*Ama* is produced whenever the factors governing mechanisms that render the gross nutrients assimilable and compatible to the body elements are overwhelmed both at the digestive and metabolic levels. Though the major sources of *Ama* is from the *Adishtana* of *Jatharagni* initiated by *Prakupita Doshas*, it is also produced at the *Dhatwagni* level when the inherent compatibility of an equilibrium of contradictions in the *Gunas* of *Doshas* are disrupted, a concept consistent with the description of autoimmunity in modern medicine. The *Ayurvedic* approach to the treatment is the need of the hour as no system is successful in providing the complete cure to this disease. A comprehensive *Ayurvedic* management with *Langhana* - a concept over sighted by the modern scientists as accidental and inconsequential - promises to make a significant difference in the management of R.A. The treatment modalities for *Amavata* listed by *Chakradatta* can be organized into three groups, to be administered in the following order. The treatment aimed at *Amapachana* - *Langhana*, *Swedana*, *Tikta*, *Katu*, *Deepana* drugs. *Shodhana* - *Virechana* and *Basti*. *ShAmana* - *Snehapana*.

**Keywords:** *Amavata*, *Rheumatoid Arthritis*, *Agni*, *Ama*

### INTRODUCTION

The history of medical science hence begins with the advent of Ayurveda and takes many twists and turns gifting the modern world with awesome discoveries and inventions enough to create a revolution. The process of research hence continues with renewed momentum whenever a medical problem is encountered especially that which becomes more knotty and mysterious each time attempts are made to decipher it. *Ama Vata* or Rheumatoid arthritis as perceived in modern parlance is one such medical problems that cripples a man to an extent to render

him unfit for independent living. The patient experiences pain, which is so miserable as to promote a statistical study on the suicide rates in Rheumatoid Arthritis (RA) patients.

Leave alone the articular manifestation the extra articular effects on the other systems are even more deleterious. In the musculoskeletal system it causes skeletal muscle atrophy and osteoporosis, pleuropulmonary manifestation of respiratory system, the vasculitis phenomenon of the vascular system peripheral neuropathies of nervous system,

scleritis and other manifestation of ophthalmic system, haematological manifestation like anaemia and splenomegaly are the common complications of the disease. R.A. affects approximately 0.8% of the population without race bias. Females are affected three times more than males. Interestingly, studies indicate that climate and urbanization have a major effect on the incident and severity of R.A. studies to discover the mechanism of etiology, pathogenesis and treatment have been inconclusive at best and the disease continues to elude the modern researches in all perspectives of objectivity.

In this situation, the *Ayurvedic* viewpoint on the disease assumes significant relevance, according to which *Ama* the toxic byproduct of a transformative error in body's metabolic homeostasis conjugates with *Vata* the supreme controller of homeostasis and the prime *Dosha* to manifest the symptoms of *Ama Vata*.

The factors governing mechanisms that render the gross nutrients assimilable and compatible to the body elements are overwhelmed both at the digestive and metabolic levels leads to the production of *Ama*. The major source of *Ama* is from the *Adishtana* of *Jatharagni* initiated by *Prakupita Doshas*, it is also produced at the *Dhatwagni* level. The *Ayurvedic* approach to the treatment is the need of the hour as no system is successful in providing the complete cure.

**Vyutpatti of Amavata:** The word *Amavata* comprises of two meaningful terms *Ama* and *Vata* which form the pathogenic basis of the disease<sup>1</sup>. It signifies the propulsion of *Ama* by *Vata* to produce *Amavata*<sup>2</sup>. It is the result of improper digestion is *Ama* and with *Vata* the disease is popularly known as *Amavata*<sup>3</sup>.

**Definition:** *Amavata* is a condition where *Stabdhat*a of the body occurs due to lodging of vitiated *Ama* and *Vata* in the *Trika Sandhi*<sup>4</sup>. From the above definition it is clear that for well understanding of the disease *Amavata*, it is necessary to know the role of *Ama* and *Vata* in detail.

**Ama:** The first twin of the pathological duo of *Amavata*, *Ama* is the root cause of all *Vikaras* more so in *Amavata* and it prompts a detailed study as discussed below.

**Etymology:** "Am+Nich": 'Am' Dhathu with 'Nich' Pratyaya constitutes the word *Ama*.<sup>7</sup> The substance which goes into the process of digestion is *Ama*<sup>7</sup>. The substance which is incompletely digested or uncooked is *Ama*<sup>3</sup>. Substance which harms a group of Srotas is *Ama*. This etymology of *Ama* is nearer to the disease *Amavata*<sup>7</sup>.

**Etiological factors:** Invariably two factors are responsible for the manifestation of the disease *Amavata*. As the name indicates, *Ama* and *Vata* are those two factors. *Ama* and *Vata* get vitiated due to their own respective causes to promote disease. Hence, individual etiological factors responsible for the vitiation of *Vata* and those etiological factors which produce *Ama* may also be considered as etiological factors of *Amavata*. Following *Nidanas* for *Amavata* are explained<sup>1</sup>: *Viruddha Ahara* (incompatible diet), *Viruddha Cheshta* (Erroneous habit), *Mandagni* (diminished digestive fire), *Nischalata* (Sedentary habits), *Vyayama* soon after *Snigdha Ahara*. Besides this, consuming *Guru Ahara*, *Kanda Shaka* (tubers) in excess and indulging in excessive *Vyavaya* is the *Nidana* of *Amavata*<sup>2</sup>.

The disease *Amavata* is best compared with Rheumatoid arthritis in the modern parlance.<sup>9</sup> Rheumatoid arthritis (RA) is a chronic multisystem disease of unknown cause. It has been suggested that RA might be a manifestation of the response to an infectious agent in a genetically susceptible host. Because of the worldwide distribution of RA, it has been hypothesized that if an infectious agent is involved, the organism must be ubiquitous. A number of possible causative agents have been suggested, including Mycoplasma, Epstein-Barr virus (EBV), cytomegalovirus, parvovirus, and rubella virus, but convincing evidence that these or other infectious agents cause RA has not emerged.

The process by which an infectious agent might cause chronic inflammatory arthritis with a characteristic distribution also remains a matter of controversy. Recent work has focused on the possible role of "super antigens" produced by a number of microorganisms, including staphylococci, streptococci and *M. arthritidis*. Superantigens are proteins with the capacity to bind to HLA-DR molecules and particular  $V_b$  segments of the heterodimeric T cell receptor and stimulate specific T cells expressing the  $V_b$  gene products. The role of super antigens in the etiology of RA remains speculative. Of all the potential environmental triggers, the only one clearly associated with the development of RA is cigarette smoking<sup>10</sup>.

Sero positive RA aggregates in families Genetic factors versus their interaction with environmental facilitators is unclear HLA DR4 is found in 70% of Caucasian sero positive patients compared to 25% of controls. Increased relative risk of 4-5 times for the DR4 positive persons, although a minority are affected African Americans tend not to exhibit this predilection.<sup>11</sup>

#### **Pathogenesis of Rheumatoid Arthritis:**<sup>19</sup>

In contemporary medical science, *Amavata* can be best correlated to Rheumatoid Arthritis. It is described as an autoimmune disorder. The propagation of Rheumatoid Arthritis is an immunologically mediated event, although the original initiating stimulus has not been clear. One view is that the inflammatory process in the tissue is driven by  $T_4$  helper cells infiltrating the synovium. Evidence for this includes: The predominance of  $T_4$  cells in the synovium. The local production of lymphokines by these infiltrating T cells. Amelioration of the disease by removal of T cells by thoracic duct drainage or suppression of their function by total lymphoid irradiation. Since T lymphocytes produce a variety of cytokines that promote B cell proliferation and differentiation into antibody forming cells. T cell activation may also

produce local B cell stimulation<sup>18</sup>. The resultant production of immunoglobulin is rheumatoid factor that can lead to immune complex formation. With consequent complement activation there will be exacerbation of inflammatory process by the production of anaphylatoxins and haemostatic factors. This tissue inflammation is reminiscent of delayed type of hypersensitivity reaction occurring in response to soluble antigens or micro organisms. It is however unclear that whether this represents a response to persistent exogenous antigens or to altered auto antigen such as collagen or immunoglobulins.<sup>20</sup>

**Signs & Symptoms of *Amavata* & *Chikitsa*:** *Lakshanas* can be broadly classified into 3 categories. *Lakshana* specific to involvement of *Sandhi*, *Lakshana* specific to involvement of *Ama*, *Lakshanas* produced as a consequence of the disease process. They are elaborated below:

**Lakshana specific to involvement of *Sandhi*:** The *Lakshanas* such as *Shoola* and *Shotha in Hasta, Pada, Shira, Gulpha, Trika, Janu*<sup>2</sup> and so on are very specific to involved *Sandhi*. Further *Lakshanas* like *Shunata Anganam*<sup>3</sup> (swelling in *Sandhi*) *Sashabdha Sandhi*<sup>4</sup> (crepitation in joints) also indicates the same. *Gatrasthabdhata* (immobility of *Sandhi*), *Jadyata* (unable to do the physical work due to *Vedana* in the *Sandhi Pradesha*) *Sandhi Vikunchana, Sankocha, Kanja* and so on deformities in the limbs further show involvement of *Sandhi*<sup>4</sup>. As seen in the *Samprapti*, the vitiated *Dosha* and *Ama* will move to the *Kaphasthana*<sup>9</sup> i.e. *Sandhi Pradesha*. The involvement of the *Asthi* and *Sandhi* is very much pathognomonic of the disease. Hence, it can be said that *Sandhi Shoola* and *Shotha*<sup>2</sup> is one of the cardinal features of this disease. But keeping in mind the narration of multiple joints involvement in other diseases in the text, we should consider multiple joint involvement with *Ama Lakshana* only as the cardinal symptom of the disease *Amavata*.

**Lakshana specific to involvement of Ama:** Most of the *Lakshanas* other than *Lakshana* related with the *Sandhi* will refer to *Ama Dosha* in the body. If we scrutinize these *Lakshanas* some of them are specific to *Ama* in the *Annavahasrotas*<sup>6</sup>, where as some other refer to effect of *Ama* on the *Rasavahasrotas*<sup>6</sup>. *Chardi*, *Arochaka* and so on are the features suggestive of *Annavahasrotodushiti*<sup>6</sup> specifically by *Ama*. The symptoms produced due to *Rasavahasrotodushiti*<sup>6</sup> can be considered at two dimensional levels, the *Sthanika* and *Sarvadaihika Lakshanas*<sup>3</sup>. *Aruchi*<sup>3</sup>, *Anaha*<sup>3</sup> and so on are the *Sthanika Lakshanas* suggestive of *Ama*, where as *AngAmarda*<sup>3</sup>, *Alasya*<sup>3</sup> are *Sarvadaihika Lakshanas* suggestive of *Ama*.

**Lakshanas produced as a consequence of the disease process:** Remaining few symptoms such as *Nidraviparyaya*<sup>4</sup>, *BhrAma*<sup>2</sup> *Murcha*<sup>2</sup>, are neither the cardinal features nor the *Ama Lakshanas*. Basically they are the effect of pathological process in the body. *Shoola* is the culprit behind *Nidraviparyaya*, where as *BhrAma* and *Murcha* point towards the involvement of *Majjavahasrotas*<sup>10</sup>. Though in this disease is *Vata* predominant, involvement of *Ama* is invariable. Hence, we see *Sama Vata Lakshanas*<sup>7</sup> in the patients of *Amavata*. This might be the reason for not mentioning the disease *Amavata* separately by *Charaka*.

Among the different scholars of *Ayurveda*, there is a wide range of difference in relation to *Amavata Upadrava*. *Yogaratnakara*<sup>1</sup> has included all the advanced stage manifestations as its complications whereas *Vachaspati* includes all *Vatavyadhis* as its *Upadravas*. But, other *Acharyas* differentiate symptoms of *Amavata* from its complications. *Vijayarakshita* mentions *Sankocha* and *Khanja*<sup>2</sup> specifically. Others include *Kalaya Khanja*. *Anjana Nidana*<sup>4</sup> includes *Jadya*, *Antrakujana*, *Anaha*, *Trushna*, *Chardi*, *Bahumootrata*, *Shoola*, *Shayananasha* as *Upadrava of Amavata*<sup>3</sup>.

**Chikitsa:** The treatment modalities for *Amavata* listed by *Chakradatta*<sup>1</sup> can be organized into three groups, to be administered in the following order. The treatment aimed at *Amapachana* - *Langhana*, *Swedana*, *Tikta*, *Katu*, *Deepana drugs*. *Shodhana* - *Virechana* and *Basti*. *ShAmana* - *Snehapana*.

## DISCUSSION

Following are the *Upadravas* which are elaborated:

**Granthi (Rheumatoid nodules):** *Granthi* is one of the features of *Snayu Dushti*<sup>5</sup>. Develops in 20-30% of persons with RA. They are usually found on the peri-articular structures, extensor surfaces and other areas subjected to mechanical pressure, but are also seen in pleura and meninges. Common locations include *Olecranon bursa*, *Proximal ulna* and so on. Nodules vary in size and consistency.<sup>6</sup>

**Angavaikalya:**<sup>7</sup> *Angavaikalya*, one of the *Lakshana* mentioned by *Harita* can be considered as an *Upadrava of Amavata* as most of the different deformities of the body parts are produced in the later part of the disease RA.

### Deformity of joints:<sup>6</sup>

- Swan neck deformity
- Boutonniere deformity
- Ulnar deviation
- Eversion at the hind foot, plantar subluxation of the metatarsal heads, widening of the forefoot, hallux vulgus, lateral deviation and dorsal subluxation of the toes.
- Z-Deformity of wrist and fingers.

**Vatavyadhi:** *Vachaspati* mentions *Vatavyadhi* to manifest in the *Upadravavastha of Amavata*. But, *Vijayarakshita* mentions *Khanja*, *Sankocha*. Different neurological manifestations in RA are: The subluxation of *Atlantoaxial joint* is a severe complication and may lead to compression of spinal cord by the *Odontoid process* producing symptoms like bladder dysfunction, sphincter laxity, circummonal hypesthesia, and long tract signs may

occur. It may even lead to sudden death due to the laceration of the cord by the Odontoid process. Affliction of Crico-arytenoid joints leads to hoarseness of voice and even life threatening upper airway obstruction. Tenosynovitis in wrist causes Carpal tunnel syndrome due to median nerve compression. Vasculitis vasonervorum cause motor and sensory type of neuropathy. Autonomic nervous system dysfunction cause cold and damp extremities.

**Sankocha:** Inability to extend the limbs or normal fixed state of limb in flexion is *Sankocha*.<sup>8</sup> *Sankocha* is due to the affliction of *Snayu*, *Sira* and *Khandara*.<sup>9</sup> *Yogaratanakara* has used the term *Vikunchana* of different *Sandhis*. Inflamed joint is usually held in flexion to maximize joint volume and minimize distension of the capsule. Later, fibrous and bony ankylosis or soft tissue contractures lead to fixed deformities.<sup>6</sup>

**Khanja:**<sup>2</sup> Patients gait gets altered because of *Akshepana* of *Khandara*. *Gayadasa* clarifies *Akshepana* as reduced *Gati*.<sup>10</sup> This is usually due to painful joints, contractures and stiffness.<sup>6</sup>

#### Following aspects of *Chikitsa* are discussed below:

**Amapachana:** The first step in the management of *Amavata* is *Amapachana*, as it is the first step in the general management of all the diseases and as *Ama* is the prime pathogenic factor in *Amavata*. The modalities for *Amapachana* in the *Chakradatta's Chikitsa Sootra* are: *Langhana*, *Swedana*, *Tikta*, *Deepana*, *Katu Oushadhis* to be administered in order.

**Langhana:** In the management of *Amavata*, *Upavasa* is the ideal line of treatment. *Bhavaprakasha* in the context of *Jwara*, considers *Langhana* as *Upavasa*.<sup>2</sup> As both *Jwara* and *Amavata* are *Amashayotha* diseases, *Upavasa*<sup>3</sup> can be considered as the ideal method of *Langhana* in *Amavata* also. This is also because of unsuitability of the other methods of *Langhana*, analysed below:

*Chatusprakara samshudhi*, cannot be employed because *Samshodhana* is contraindicated in the *SAmavastha* of a disease.<sup>4</sup> *Pipasa* cannot be employed because in morbid patients *Jala* is *Pranadharaka*.<sup>5</sup> *Maruta* and *Atapa Sevana* are less efficient for *Jatharagni* impairment when compared to *Upavasa*. *Deepana*, *Pachana* cannot be employed as *Agni* affected by *Ama* is incapable of *Dosha*, *Ahara* and *Oushadha Pachana*.<sup>6</sup> *VyayaAma* is incompatible in the disease *Amavata*. For these reasons, *Upavasa* is the ideal method of achieving *Langhana* in *Amavata*, which can be achieved by *Anashana* or *Alpabhojana*. The *Langhana* thus achieved will have *Amapachaka* effects at the *Koshta* level as well as *Sarvadaihika* level.<sup>7</sup>

**Swedana:** The definition of *Sweda*<sup>8</sup> includes its benefits, viz. *Stambha*, *Gourava* and *Sheetagna*. Since these are antagonistic to the qualities of *Kapha* and *Ama*, *Swedana* has an important role to play in the treatment of *Amavata*. *Snigdha Sweda*, *Ruksha Sweda* and *Ekangasweda*, *Sarvangasweda* are the two fold classifications of *Sweda*<sup>9</sup> and in *Amavata*, the *Ruksha* type of *Sweda* should be administered for the following reasons; The pathogenesis of *Amavata* involves spread of *Ama* and *Vata* to the *Sleshmasthanas*, specifically *Amashaya* and *Sandhi*.<sup>10</sup> In all conditions of *Amashayagata Vata*, *Ruksha Sweda* should be administered.<sup>11</sup> As disease is localized in *Sandhipradesha*, *Ekangasweda* is ideal. The *Rukshasweda* can be advised to the affected *Sandhi* using *Valukapottali* or *Rukshopanaha*.<sup>12</sup>

**Tiktam Deepanani Katuni Cha:** Administration of *Tikta*, *Katu Deepana* *oushadhis* in *Ama* achieves *Ama pachana* both at the *Koshta* level and *Sarvadaihika* level. The methods used for *Ama Pachana* are potentially *Vataprakopaka*. But as *Langhana* is indicated in *SAmavata* condition the danger of *Vata Prakopa* is minimal because,<sup>13</sup> the *Amapachana* methods of *Langhana*, *Swedana* and *Tikta Katu Deepana* drugs are administered only

until *NirAmavastha* is achieved. After this, *NirAma Doshas* have to be eliminated from the body by *Shodhana*. The *Shodhana* methods which can be employed are *Virechana and Basti*.

**Virechana:** *Virechana* is the best preferred form of *Shodhana* in *Amavata* because *Vamana (Ullekhana)*,<sup>14</sup> though indicated by Charaka in *Amachikitsa* is unsuitable here as it aggravates the symptoms of *Amavata* caused by *Pratilomagati* of *Vayu* like *Anaha, Vibandha* and *Antrakoojana*. They can best be relieved by *Virechana*. Besides, the production of *Ama* involves the *Avarana* of the *Pachaka Pitta* by *Kledaka Kapha*. *Virechana* administered here provides dual benefits of removing the *Avarana* produced by *Kledaka Kapha* and acting on the *Sthanika Pitta Dosha*.

**Basti:** *Basti* forms the second method of *Shodhana*. Both *Niruha* and *Anuvasana Bastis* should be employed here. The *Niruha Basti* does the *Shodhana* of the *Doshas* brought to *Pakvashaya* and the *Anuvasana Basti* alleviates *Prakupita vata* as a consequence of *Niruha Basti*.

**Shamana Snehapana:** This is a third component in the plan of management of *Amavata*. The objective of *Snehapana* here is *ShAmana*. It is important to administer *Sneha* only after the disease has become *NirAma*. *ShAmana Snehapana* in *Amavata* provides the following benefits; *Snehapana* prevents the aggravation of *Vata* and *Rukshata* as a result of the previously employed therapeutic measures.<sup>15</sup> It helps in increasing the *Bala* of the patient who has been debilitated as a result of previously employed therapeutic measures.<sup>15</sup> *ShAmana Sneha* stimulates the *Agni*<sup>16</sup> which is an important component in the treatment of *Amavata*. Since the *Snehapana* has been prescribed in *Asthi Majja Gata Vata*, it can be comfortably used in *Amavata*. *Vataharana* is the inherent property of *Sneha*, an essential requirement in the treatment of *Amavata*<sup>17</sup>.

## CONCLUSION

*Amavata* is a condition where *Stabdhatata* of the body occurs due to lodging of vitiated *Ama* and *Vata* in the *Trika Sandhi*. *Viruddha Ahara* (incompatible diet), *Viruddha Cheshta* (Erroneous habit), *Mandagni* (diminished digestive fire), *Nischalata* (Sedentary habits), *Vyayama* soon after *Snigdha Ahara*. Besides this, consuming *Guru Ahara, Kanda Shaka* (tubers) in excess and indulging in excessive *Vyavaya* is the *Nidana* of *Amavata*. *Lakshanas* can be broadly classified into 3 categories. *Lakshana* specific to involvement of *Sandhi, Lakshana* specific to involvement of *Ama, Lakshanas* produced as a consequence of the disease process. The treatment aimed at *Amapachana - Langhana, Swedana, Tikta, Katu, Deepana drugs. Shodhana - Virechana and Basti. ShAmana - Snehapana*.

## REFERENCES

1. Agnivesha; Charaka Samhita; redacted by Charaka and Dridabala with Ayurveda Dipika Commentary by Chakrapanidutta; edited by Vaidya Yadavji Trikamji Acharya; 4<sup>th</sup> edition, 2001; published by Chaukhambha Surabharathi Prakashana Varanasi, Uttar Pradesh.
2. Agnivesha; Charaka Samhita; redacted by Charaka and Dridabala with Ayurveda Dipika Commentary by Chakrapanidutta; English translation edition 1997; by Ram Karan Sharma and Vaidya Bhagwan Dash; Chaukhambha Sanskrit Series Office, Varanasi, Uttar Pradesh.
3. Amarasinha; Amarakosh; with RAmasrani commentary of Bhanuji Diksita, edited with the easy Maniprabha hindi commentary by Haragovinda Shastri; 3<sup>rd</sup> edition, 1997; Chaukhambha Sanskrit Samsthan, Varanasi
4. Anonymous; Yogaratnakara; with Vidyotini Hindi Commentary by Vaidya Lakshmipathi Shastri; 7<sup>th</sup> edition, 1999; Chaukhambha Sanskrit Samsthan, Varanasi, Uttar Pradesh.
5. Baghel M. S.; Researches in Ayurveda; Ed. Gajendra Kumar Jain; 1<sup>st</sup> edition, 1997; Mridu Ayurvedic Publication and Sales, Jamnagar, Gujarat.

6. Bahadur Raja Radhakanthadeva; Shabda Kalpadruma; Reprint 1998; published by Nag Sharan Singh for Nag publishers; Delhi.
7. Basavaraj; Basavarajeeyam:edited by Goverdan Sharma,published by Gorakshanantralaya Nagpur; Also Chaukambha Sanskrit orientalia, Varanasi.
8. Bhavamishra; Bhavaprakasha; with Vidyothini Hindi tika by Bhishakratna Shri Bhramhashankara Shastri and Sri Roopalal Vaishya; 8<sup>th</sup> edition, 1997; Chaukhambha Sanskrit Bhavan, Varanasi, Uttar Pradesh.
9. Boyd, William; Boyd's textbook of pathology; Ed Ritchie A. C.; 9<sup>th</sup> edition, 1990; published by Lea and Febiger, Philadelphia / London.
10. Chakrapanidatta; Chakradatta with Vaidayaprabha hindi commentary by Dr. Indradeva Tripathi; 1997, Chaukambha Sanskrit Sansthan, Varanasi
11. C.Dwarakanatha; Introduction To Kayachikitsa; 1996, 3<sup>rd</sup> edition; Chaukhamba Orientalia.Varanasi.
12. Davidson, Sir Stanley; Davidson's principles and practice of medicine, ed C. R. W. Edwards et al; 17<sup>th</sup> International Student edition 1995, reprinted 1998; Churchil Livingstone, Edinburgh.
13. David J. Magee; Orthopedic physical assessment; 1997, 3<sup>rd</sup> edition; W.B.Saunders Company. Philadelphia.
14. Dhanavantari; Dhanavantari Nighantu; Commentary by Jharkhande Ojha, Umapathi Mishra; 2<sup>nd</sup> edition, 1996; published by Chaukhambha Surabharathi Prakashana Varanasi, Uttar Pradesh.
15. French, Herbert; French's Index of Differential Diagnosis; 13<sup>th</sup> edition; Ed. Ian A. D. Bouchiers, Harold Ellis., Peter R. Fleming. Butterwoth Heinemann; A division of Reed Educational and Professional Publishing Ltd.
16. Gayatri S.Gandhe. A Clinical Study On The Role Of Bhallakadi Vati And Rasayan In The Management Of *Amavata*. (Unpublished doctoral dissertation, Gujarat Ayurveda University, Jamnagar, Gujarat).
17. Govinda Dasa; Bhaishajya Ratnavali; redacted by Bhishakratna Shri Brahma Shankara Mishra with Vidyotini tika by Kaviraj Sri Ambikadutta Shastri; edited by Sri Rajashwara Dutta Shastri; 13<sup>th</sup> edition, 1999; published by Chaukhambha Sanskrit Samsthan, Varanasi.
18. Guyton Arthur. C; Hall Jhon. E. Text Book of Medical Phisiology;, 9<sup>th</sup> edition; Harcourt Brace and company Asia Pvt. Ltd, Singapore.
19. Hajra P. K. et al; The wealth of India; First Supplement Series; Vol. 2 (Raw materials) © 2000 published by National Institute of Science Communication; Pusa, New Delhi.
20. Harita; Harita Samhita; 1985, 1<sup>st</sup> edition; with Asha Hindi commentary by *Ramavalamba* Shastri; Prachya Prakashan, Varanasi.

**Source of Support: Nil**

**Conflict Of Interest: None Declared**

How to cite this URL: Kamath Nagaraj & Patel Yashesh: A Review On The Concept Of Amavata (Rheumatoid Arthritis) As Per Ayurveda. International Ayurvedic Medical Journal {online} 2018 {cited November, 2018} Available from: [http://www.iamj.in/posts/images/upload/2517\\_2523.pdf](http://www.iamj.in/posts/images/upload/2517_2523.pdf)