



## AN AYURVEDIC APPROACH TO RHEUMATOID ARTHRITIS

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### ABSTRACT

Rheumatoid arthritis is a chronic immuno-inflammatory systemic disorder mainly affecting synovial joints. Major complaints for which a patient seeks medical attention is pain, swelling in and around the joints, stiffness and limited range of motion. Other tissues and organs are also involved in patients with more extensive disease in the form of heart diseases, respiratory complications, sicca syndrome, gangrene etc. Modern medical science has made so many advancements but exact aetiopathogenesis of the disease is yet to be conclusive. Modern system of medicine has drugs like NSAIDs, Corticosteroids, DMARDs and Biologics which ameliorate the symptoms and overcome agony and crippling caused by the disease but the underlying pathology remains unchecked. A disease clinically resembling to RA is described in Ayurvedic texts as amavata with detailed aetiopathogenesis, symptomatology complications, prognosis and treatment. Amavata has been named so taking into account the underlying two predominant pathological factors i.e. Ama and Vata. Ama formed due to disturbed functioning of agni along with vitiated vata circulates in the body and get lodged in shleshma sthanas particularly synovial joints causing manifestations of RA. Preventive measures are described along with modalities like langhana, deepana-pachana, shodhana and shamana have been described for the management of amavata which directly targets the root cause of the disease. Ayurveda can do a lot for mankind in preventing as well as treatment of this dreadful disease.

**Keywords:** Amavata, Ama, Vata, Agni

### INTRODUCTION

Rheumatoid arthritis is a chronic immuno-inflammatory systemic disorder with clinical signs and symptoms mainly affecting synovial joints.<sup>1</sup> Major complaints for which a patient seeks medical attention is pain in and around the joints, swelling, stiffness and limited range of motion. Course of the disease is quite variable. In some patients it can present as mild oligoarticular illness with minimal joint damage whereas most of patients have progressive poly arthritis with marked functional impairment.<sup>2</sup> The typical clinical presentation is symmetrical, deforming small and large joint poly arthritis often associated with systemic extra-articular manifestations. RA is prevalent throughout the world irrespective of races. Onset of the disease is most frequent in 4<sup>th</sup> and 5<sup>th</sup> decade of life with increasing incidence with increase in age.<sup>3</sup> Women are affected three times higher than men. Modern medical science has made so many advancements but exact aetiopathogenesis of the disease is yet to be conclusive. RA is considered to be a multi factorial disease with possibility of genetic and environmental factors. MHC-II alleles HLA-DR4, HLA-DR1 and its other alleles are found to be in association with development of RA but not in all the population groups. It has also been hypothesized that infection with microbial agents like CMV, EBV, Mycoplasma, rubella virus etc. are responsible for RA but there is lack of exact evidence.<sup>4</sup> Concept of autoimmunity and free radical damage is also there. Drugs employed in the management of RA are NSAIDs, corticosteroids and DMARDs. A disease resembling clinically to RA is described in Ayurvedic texts as amavata. Amavata as a separate disease entity was described for the first time in detail by madhavakara in his famous treatise Madhava Nidanam dealing with the aetiopathogenesis of the disease in a systematic manner besides the signs, symptoms, complications and prognosis.<sup>5</sup> Amavata has been named, taking into account two predominant pathological factors i.e. ama and vata as they have important place in nidana and chikitsa of this disease. Amavata is the disease affecting

madhyama roga marga, as it involves marma, asthi and sandhis. The disease is a product of vitiation of tridosha though ama and vata are the initiating factors in its pathogenesis.<sup>6</sup> Term amavata reflects the equal role of both vata and ama though ama is the initiating factor of this disease. Moreover, the chief pathogenic factors, being contradictory in nature possess difficulty in planning the line of treatment. No doubt allopathic system of medicine has got an important role to play in overcoming agony or pain, restricted movement and crippling caused by the disease. Drugs are available to ameliorate the symptoms due to inflammation in the form of NSAIDs and the long term suppression is achieved by the DMARDs. But most of the NSAIDs have gastrointestinal side effects whereas DMARDs cause marrow, renal and hepatic suppression. Hence, the management of this disease is merely insufficient in other systems of medicine and Ayurveda can do a lot to overcome the challenge in treating rheumatoid arthritis.

### Importance of Agni and Concept of Ama

According to Ayurveda proper diet and its digestion is considered as one of the basic pillars of our life.<sup>7</sup> Every day we take different forms of food for sustaining our lives. Our ability to properly digest and metabolize these different types of foods determine to a large extent the state of our health and agni (Digestive power) has important role to play in digestion of food and various toxins that we ingest along with food. Ayu (long life), Varna (complexion), Bala (strength) and Ojas (immunity) etc. are all under the influence of Agni.<sup>8</sup> The basic function of agni in the body is to disintegrate the food into their simplest possible components to make it fit for absorption and assimilation. An improper diet and inadequate agni results in undigested material left in the body, leading to production of ama, a toxic material that initiates and promotes disease processes.<sup>9</sup> This can occur at the level of GIT as well as at cellular level due to impaired cellular metabolism. At the level of gross digestion poorly digested food results in a thick slimy material that lines the walls of

bowel, impeding absorption and assimilation of nutrients. At the cellular level impaired dhatvagni and bhutagni can lead to production and accumulation of metabolic and cellular waste products. Toxins can also come from external environment such as herbicides, pesticides, pollutants or various microbial agents which enter in our body and causes development of immune response. Thus ama can be understood as accumulated toxic substances at different levels of physiology like undigested food material (amarasa), metabolic and cellular waste products i.e. excessive free radicals generated from cellular stress (amavisha)<sup>10</sup> and external toxins (Garvisha).<sup>11</sup> Accumulation of ama can occur in the body at various sites depending upon the site of kha-vaigunya. In case of RA kha-vaigunya is at the level of shleshma sthanas particularly sandhis (synovial joints) where ama gets lodged being circulated by rasavahi srotas and initiates the disease.<sup>12</sup> We can understand the concept of ama in terms of free radicals and reactive oxygen species which are unstable molecules produced as a by product of cellular metabolism. When they are produced in excess in the body they cause cellular damage and start the disease process.

### Aetiopathogenesis

The root cause behind the pathogenesis of amavata is agnimandya. State of agnimandya leads to production of ama and further leads to vata prakopa along with impairment of other doshas.<sup>13</sup> Hence it can be said that any factor whether dietary, environmental or psychological, which causes impairment of agni is responsible for the production of ama and gets lodged in shleshma sthanas especially in the sandhis (synovial joints) and produce various symptoms of amavata.<sup>14</sup> Among five types of vata, vyana vayu and samana vayu which are responsible for the circulation of rasa dhatu and control agni respectively are mainly vitiated in amavata.

### Cardinal Symptoms of Amavata

- Sarujam Shotha (Pain and Inflammation) in multiple joints like joints of hands, feet, knee, sacrum etc.
- Character of pain is described as Vrishchik Dansha Vata Vedana (Migratory pain like pain in scorpion bite)
- Agnidaurbalya (Loss of appetite)
- Utsahhani (Lassitude)
- Nidra Viprayay (Disturbed sleep)
- Gauravam (Heavyness)
- Jwara (Fever)
- Angamarda (Bodyaches)
- Karmahani (Loss of function)
- Jadta (Stiffness)<sup>15</sup>

Other generalized symptoms of aggravated ama and vata like aruchi (anorexia), praseka (excessive salivation), bahumutrata (increased urine frequency), kukshishoola (dull pain abdomen), vibandha (constipation) etc. are also seen in patients of amavata. When pitta dosha is involved along with ama and vata there is appearance of inflammatory signs such as daha (burning sensation), raga (redness) whereas when kapha is involved there is feeling of heaviness and itching in the affected parts.<sup>16</sup>

### Prognosis

It is difficult to plan the management of amavata as both components of the disease i.e. ama and vata are having properties opposite to each other so when treatment is aimed keeping one factor in mind other got aggravated and vice versa. However disease with early onset and single dosha

involvement can be cured. Patients with involvement of two doshas are yarya and as the disease become chronic, it involves multiple joints along with systemic complications which make the disease difficult to treat.<sup>17</sup>

### Treatment

Chakradatta was first to describe the line of treatment of amavata in detail. Langhana, swedana, tikta, deepana and katu drugs, virechana, snehapana and saindhavadi anuvasana as well as ksharabasti are advised for treatment of amavata.<sup>18</sup> In addition ruksha balukasweda and upanaha without sneha have been mentioned in bhavaprakasha for the management of amavata.<sup>19</sup> Main pathological factor behind amavata is ama which initiates the disease process and is responsible for aggravation of vata dosha. Hence the first target in the management of amavata should be removal of already formed ama and checking the further production of ama. Management of amavata should be aimed at following

- Checking the formation of ama.
- Digestion and excretion of ama dosha already accumulated in the body.
- Srotoshodhana (Cleansing the circulatory channels)
- Pacifying the vitiated vata dosha.

Management principles described in Ayurvedic texts for the management of amavata can be categorised under three headings

1. Langhana
2. Shodhana Chikitsa
3. Shamana Chikitsa

### Langhana

Langhana is the first line of management in amavata. Langhana means either absolute fasting or light diet. Amavata is a rasa dushti janya amashyotha disease and langhana is best suited in these disorders. Langhana increases the digestive and metabolic power and also helps in digestion of already formed ama.<sup>20</sup>

### Shodhana Chikitsa

It is the cleansing of the body by using panchkarma therapy. It helps in removal of accumulated ama from the gut and micro channels so that vata can circulate and perform its physiological functions in the whole body without any hindrance. Snehapana and dry svedana is given to the patients of amavata prior to the administration of virechana (purgation) as purvakarma. For snehapana oils or ghrita preparations medicated with drugs having katu, tikta and deepana properties are generally used such as saindhavadi tail and panchtikta ghrita. In amavastha of disease, patients are given ruksha svedana such as baluka sveda whereas in niramavastha, snighda sveda can also be given. Heat causes vasodilation and increases blood circulation and thus helps in removal of tissue metabolites. It helps in muscular relaxation along with producing analgesic effect. Shodhana procedures employed in the treatment of amavata are virechana (purgation) and vasti (medicated enemas). For virechana mainly eranda taila is used. Vastis (enemas) given in patients of amavata are generally kshar vasti and anuvasana vasti with saindhavadi oil.<sup>21</sup> These help in scraping out the accumulated toxins in the form of amadosha and also help in pacifying vata dosha being oily in nature.

### Shamana Chikitsa

Shamana chikitsa checks further production of ama by correcting agnimandya and keeping the doshas in balance. Various drugs having katu, tikta rasa and deepana properties are used in the treatment of amavata.<sup>22</sup> The drugs having katu rasa stimulates jatharagni, removes obstruction of srotas and checks aggravation of kapha. The drugs having tikta rasa are deepana, pachana and pitta-kapha shamak. Deepana drugs also increases the digestive fire due to their laghu, ushna and tikshna guna. Thus, these drugs increases agni, digest ama, removes excessive kapha, prevent further production of ama, clear srotorodha and mobilizes doshas from shakha to koshtha which can be removed from the body using shodhana procedures. These drugs are prescribed from the beginning of treatment.

### Common Drugs used in Formulations used for Treatment of Amavata

#### Eranda Tail (Castor oil)

Eranda taila is ushna (hot) in nature. Due to its property of hotness it digests the accumulated ama. Due to its teekshana guna (penetration power) it disintegrates the ama. Due to its sukshama guna (subtle nature) it clears the micro channels. It helps in reducing vata and purges the bowel. It helps in clearing the accumulated ama which acts like free radical causing various diseases.<sup>23</sup> It cures low back pain.<sup>24</sup> Bhavamishra has compared eranda taila with lion which kills the elephant like disease of amavata.<sup>25</sup> Ricinoleic acid is the main constituent of eranda taila and it has anti-inflammatory properties along with purgative action. Ethanolic extract of *Ricinus communis* possesses acute anti-inflammatory and anti arthritic activity and these effects are dose dependent. Anti-inflammatory and anti-arthritic effect might be speculated due to phyto-chemicals present such as flavonoids and saponin.<sup>26</sup>

#### Guggul (*Commiphora mukul*)

The aqueous extract of guggul significantly inhibited both the maximal oedema response and the total oedema response during six hours of carrageenan induced rat paw oedema. Fraction containing gum guggul in experimental arthritis decreased the thickness of the joint swelling during the course of drug treatment.<sup>27</sup>

#### Bhallataka (*Semecarpus anacardium*)

According to an experimental study significant increase in the level of lipid peroxides (LPO), reactive oxygen species (ROS) and decreased levels of antioxidant enzymes in arthritic rats were observed. On treatment with Bhallataka, the above changes were reverted back to near normal levels as conducted in one study. The increment in C-reactive protein (CRP) level and Erythrocyte sedimentation rate (ESR) observed in arthritic animals were found to be significantly restored in drug treated rats.<sup>28</sup> The in vivo carrageenan induced paw edema assay resulted in dose dependent anti-inflammatory effect of major COX inhibitory principle of Bhallataka seeds, tetrahydroamentoflavone (THA) and the activity was comparable to that of ibuprofen, one of the well-known NSAIDs.<sup>29</sup>

#### Shunthi (*Zinziber officinale*)

Ginger has been used for centuries in Indian Ayurvedic medicines and traditional medicine system as an anti-inflammatory and immuno-modulatory agent. Ginger extract

blocks the production of inflammatory mediators like thromboxane, prostaglandins and leukotrienes.<sup>30</sup> According to a study on rat models ginger oil effectively reduced swelling and inflammation in the arthritic joints. In another study, 56 patients (28 with rheumatoid arthritis, 18 with osteoarthritis and 10 with muscular discomfort) used powdered ginger against their afflictions. Amongst the arthritis patients more than three quarters experienced, to varying degrees, relief in pain and swelling with no adverse effects during the period of ginger consumption which ranged from 3 months to 2.5 years. At least one of the mechanisms by which ginger shows its ameliorative effects could be related to inhibition of prostaglandin and leukotriene biosynthesis, thus it works as a dual inhibitor of eicosanoid biosynthesis.<sup>31</sup>

#### Garlic (*Allium sativum*)

Garlic has anti-inflammatory properties as oil prepared from garlic and used in rheumatic pain showed improvement in joints pain. Garlic also acts as free radical scavenger and helps in preventing the free radical induced tissue damage.

#### Turmeric (*Curcuma longa*)

Turmeric is commonly used herb in house hold cooking and Ayurvedic medicines. Curcumin is the main active component of this herb, and exhibits anti-inflammatory and antioxidant properties. Significant improvement in morning stiffness, walking time and joint swelling have been observed as anti-arthritic effects after regular curcuma consumption by RA patients.<sup>32</sup>

#### Harshingar (*Nyctanthes arbortristis*)

It has been used widely as a decoction for the treatment of arthritis and sciatica in ancient system of medicine since centuries. Arbortristosides, Nyctanthic acid and Crocetin are the main active principles of harshingar. Water soluble ethanolic extract of nyctanthes leaves have been reported to reduce significantly the levels of inflammatory cytokines (IL-1, TNF- $\alpha$ ) in experimental arthritis.<sup>33</sup>

#### Shallaki (*Boswellia serrata*)

Strips of Boswellia bark are peeled away, yielding a gummy-oleo resin. It contains  $\beta$  – boswellic acid in resin portion, which has shown anti-inflammatory, anti-atherosclerotic and anti-arthritic activities. It is also known to regain integrity of the vessel in the joints from damage or spasm. Boswellia mainly contain volatile oil, terpenoids and sugars. Extract of *Boswellia serrata* have natural anti-inflammatory activities at sites where chronic inflammation is present by switching off pro-inflammatory cytokines and mediators which initiates the process.<sup>34</sup>

### CONCLUSION

From the above discussion now it is evident that Rheumatoid arthritis vis-à-vis Amavata can be cured completely through the principles of Ayurveda. Even the modern science also acknowledges that different Ayurvedic drugs used for treating this disease have definite scientific basis with promising results and no adverse effects. However even after complete cure recurrence can occur if patient does not modify his lifestyle and again indulges in causative factors.

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