

## Review Article

# Management of rheumatoid arthritis (*Aamavata*) using symbiohealth healthcare system

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## Abstract

Rheumatoid Arthritis (RA), according to modern medicine, and *Aamavata* according to Ayurveda, has an etiological and clinical relationship. *Aamavata* is a disease complex of which RA is a part. A comparative study of the pathophysiology of this disease by both systems reveals that modern medicine has investigated the mechanism of inflammation and has developed an offense strategy to control it. Ayurveda follows a defense strategy and it focuses its search on the etiological process, where disequilibrium at a higher level of physiology affects the gastrointestinal tract, causing an immune response that results in inflammation. Understanding the pathophysiology of both systems will help the treating physician to institute a dual treatment plan of modern medicine's offense strategy and Ayurvedic medicine's defense strategy at appropriate stages of the disease. Studying the pathophysiology of the two systems also gives insight into the genetic and epigenetic phenomenon in the treatment of disease and opens the doors for groundbreaking research.

**Key words:** *Aama*, *Aamavata*, defense, epigenetics, genetics, offense, symbiohealth

## Introduction

Rheumatoid Arthritis (RA) is a systemic disease that primarily causes joint inflammation, pain, loss of function and eventual joint destruction and deformity. The disease is of variable severity ranging from mild inflammation in a few joints to symmetric involvement in multiple joints, mainly in the hands and feet. One of the oldest records of the disease is a brief description in the *Rigveda*, which roughly dates back to 1500 B.C. In the 9<sup>th</sup> century A.D., Indian physician, Madhava wrote a full description of *Aamavata*<sup>[1]</sup> but it was not until 1800 that the disease, described by French physician Augustin Jacob Landré-Beauvais, was recognized in the western world. In 1859, British rheumatologist Alfred Baring Garrod, named the disease RA.

In the last 50 years, extensive research by modern medical scientists has shed light on various pathways of inflammation in RA, but the etiology of the disease is still unknown.<sup>[2]</sup> New research has revealed various biological agents that block the pathways of inflammation and provide much-needed relief to

a significant number of patients. However, these agents are very expensive, require close monitoring, have side-effects, and need to be used indefinitely. In spite of such advancements, a significant number of patients continue to suffer and require more effective relief and in their search, look for better treatments.

This paper looks at a different approach to treatment and explores how modern medicine employs a strategy of offense while Ayurveda employs a defense strategy. When the pathophysiology of the disease is examined, it becomes clear that modern medicine has studied the mechanism of inflammation in depth and provides a treatment plan to fight against inflammation. There is no well-recognized defense strategy in modern medicine. However, Ayurveda primarily uses a defense strategy in the management of disease. According to the Ayurvedic understanding of pathophysiology of disease, disequilibrium occurs at a higher level of physiology (explained later) and of the gastrointestinal tract to cause immune response and inflammation. In all aspects of competition or war a combination of defense and offense strategy is crucial to win. Why, are we only using the offense strategy to fight disease?

The objectives of this article are the following:

1. Briefly review the pathophysiology of RA known to modern medicine practitioners and the Ayurvedic concepts of *Aamavata*.

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2. Provide a brief account of clinical manifestations especially insights from Ayurveda that have a direct bearing on the management of RA.
3. Based on this information, a treatment plan using both an offense and defense strategy will be presented. To better understand the concepts of offense and defense strategies, refer to the article on Symbiohealth.<sup>[3]</sup> Unlike the current system of medicine, which predominantly uses an offense strategy in treating disease, Symbiohealth system utilizes a dual strategy of offense and defense together to treat and prevent disease. This, in turn, creates a healthcare system that is more effective, less expensive, less toxic and creates a healthier society.

### Pathogenesis of RA as per modern medicine

The pathogenesis of RA is highly complex and involves interconnected cellular and molecular pathways that ultimately cause joint inflammation and damage.<sup>[2]</sup> There is evidence of genetic predisposition to RA. It is more common in first-degree relatives of patients with RA and other connective tissue diseases. If one monozygotic twin develops RA, the other twin has a 10-15% chance of developing the condition, suggesting that other factors also play a role in its pathogenesis.<sup>[4]</sup> In the past decade or so, epigenetic processes causing gene modification without affecting the DNA sequence have been identified.<sup>[5]</sup> DNA methylation and histone modification are examples of the epigenetic mechanisms.<sup>[6]</sup> The etiological agent that triggers the disease process is unknown; however, it is believed that an infectious agent is most likely the culprit, and trauma, in many cases, is the initiating factor. The main pathological changes that occur in RA include synovial inflammation, cellular hyperplasia and hypertrophy, micro vascular injury, neovascularization, thrombosis, edema with infiltration of mononuclear cells, and increased amount of adhesion molecules.

An unknown trigger causes antigen-presenting cells to activate CD4 + T cells, which in turn activate various other cells: Macrophages, fibroblasts, B-lymphocytes, monocytes, and dendritic cells. These activated cells produce various cytokines, which cause inflammation and destruction of the involved tissue.<sup>[2]</sup> Of clinical significance at this time are Tumor necrosis factor (TNF)-alpha, interleukin (IL)-1 and IL-6. TNF-alpha also stimulates the secretion of other cytokines [Figure 1].

### Pathogenesis of Aamavata as per Ayurveda

The main pathogenic event in RA or *Aamavata* is the formation and deposition of *Aama* (explained later) at all levels of body physiology including gastrointestinal and macro and micro channels of the inner transport system of the body. At this point, it is critical to understand the difference of human physiology described by the two healthcare systems. Although, in the recent years modern medicine has started paying credence to mind body medicine it largely studies the working of physical body by using a reductionist approach of understanding the physiology of various organs like lungs, heart, endocrine glands, etc., The understanding of modern biology too is now turning back from over emphasis on molecular biology toward the new approach of systems biology.<sup>[7]</sup>

In contrast to modern medicine, Ayurveda understands the following five levels or sheaths of human physiology called “*Pancha Kosha*”<sup>[8]</sup> [Figure 2].

1. The first level is the physiology of physical body or “*Sthula Sharira*” and is called *Annamaya Kosha* because it depends upon food or *Anna* for sustenance and is prone to disease.
2. The second level is *Pranmaya Kosha* or the energy sheath. It is composed of vital *Prana* or *Vata* factor (combination of air and space, explained later). It is responsible for all the movements for proper functioning of the body like beating of the heart, breathing, peristalsis, etc., Obstruction to flow of *Prana* or disequilibrium of *Vata Dosha* causes various diseases including pain, which is an important symptom of RA.
3. The third level is *Manomaya Kosha* or the sheath of the mind, which is responsible for cognitive functions. After receiving information from the five senses our actions are directed after communicating with fourth level, intellect.
4. The fourth level is called *Vigyanmaya Kosha* or intellect/intuition sheath.
5. Fifth level or layer is *Anandmaya Kosha* or the sheath of joy or bliss. Transcending the four lower sheaths results in extreme joy or *Ananda* and freedom from distress and disease.

Continuing with the pathophysiology of *Aamavata*, the initial event is the “mistake of the intellect” or *Pragyaparadha*. All of us are connected to the “source” or unified field and are

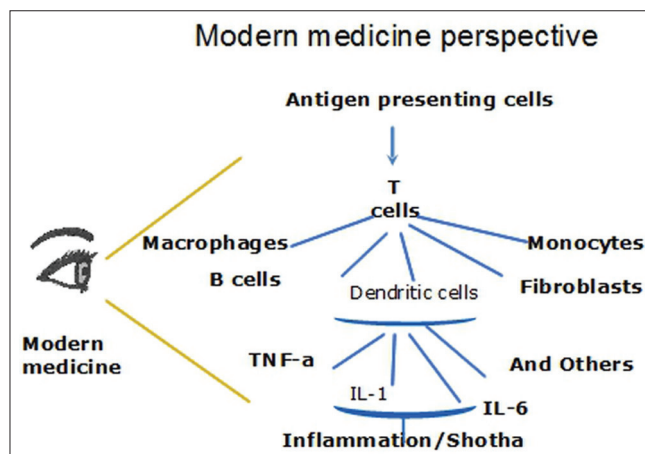


Figure 1: Pathophysiology of rheumatoid arthritis-Aamavata

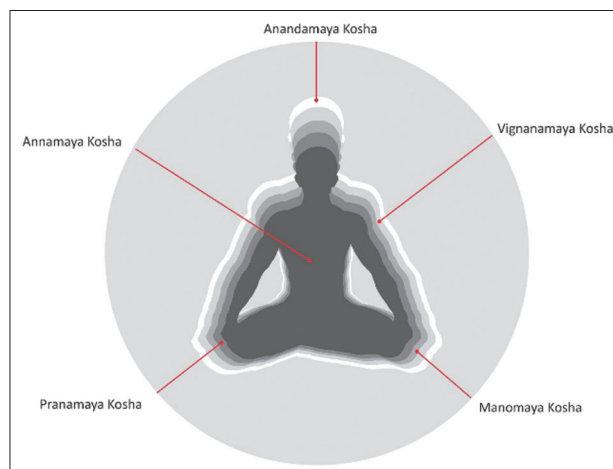


Figure 2: Sheaths of Human Physiology - Ayurveda

guided to follow the natural laws of nature to have perfect health. As we experience the outside world with our five senses and start imitating what others are doing and eating, we lose that connection to the source. As a result, we start consuming food not conducive to our body and follow a life-style not suitable to our body. The primary event of “mistake of intellect” or *Pragyapradha* occurs in the following three areas [Figure 3]:

- Diet
- Activity of mind
- Daily regimen.

The results of “mistake of the intellect” or *Pragyapradha* include the following:

1. *Tridoshik* disequilibrium: There is a parallel between modern medicine and Ayurveda. According to modern medicine, a person with a particular genotype is more likely to develop RA. According to Ayurveda each person is born with a unique “*Prakriti*” or body-mind type. This is based upon unique combination of three bio-principles called *Doshas* viz. *Vata*, *Pitta*, and *Kapha*. People with predominant *Vata* or *Kapha Prakriti* and/or their disequilibrium are more likely to suffer from *Aamavata*/RA. *Vata* and *Kapha Prakriti* person is more likely to have decreased digestive-metabolic fire or *Agni* in the body (explanation of *Agni* is described later), resulting in impaired digestion and absorption of food. This leads to formation of an immunogenic and toxic substance called *Aama*, which is the causative factor for inflammation. *Pitta Prakriti* individuals have stronger *Agni*, but in some of them *Agni* may be very high and erratic or *Vishama* and therefore is not able to digest food well. Restoration of

*Agni* and correction of imbalanced state is an important component of treatment strategy in Ayurveda.

At this point it is important to better understand the parallel and relationship between the genome and *Prakriti*. The genotype of a person is identified at the sub-cellular level. On the other hand, *Prakriti* is identified by the phenotype determined by structure, function, and mental activity. *Prakriti* of a person, like the genome, remains unchanged during the life of a person except minor changes occurring as an impact of the environment and life style. After birth, many changes start to occur in the body due to growth and aging, this change in *Prakriti* is called *Deha Prakriti*. Recently, scientists have discovered epigenes, which cause genes to turn on and off based upon environment, diet, and lifestyle.<sup>[9]</sup> According to Ayurveda, when there are excessive environmental, dietary and life-style changes experienced by the body, *Doshik* disequilibrium or “*Vikriti*” occurs. *Vikriti* is a precursor to disease.

It appears that both systems of medicine are referring to the same phenomenon but at two different levels. Modern medicine identifies the uniqueness of a person by knowing the genotype and Ayurveda more by the phenotype. The significance of understanding this phenomenon is that if genetic researchers collaborate with Ayurvedic researchers, a complete phenotypic map of the genome can be created.

2. Decreased *Agni* or metabolic fire: *Agni* corresponds to enzymes, chemicals, hormones, neurotransmitters and cytokines known to modern science. Ayurveda proposes a well-conceived concept of *Agni*.<sup>[10]</sup> There are 13 *Agnis* responsible for the entire process of digestion of food and all aspects of metabolism, including elemental/molecular

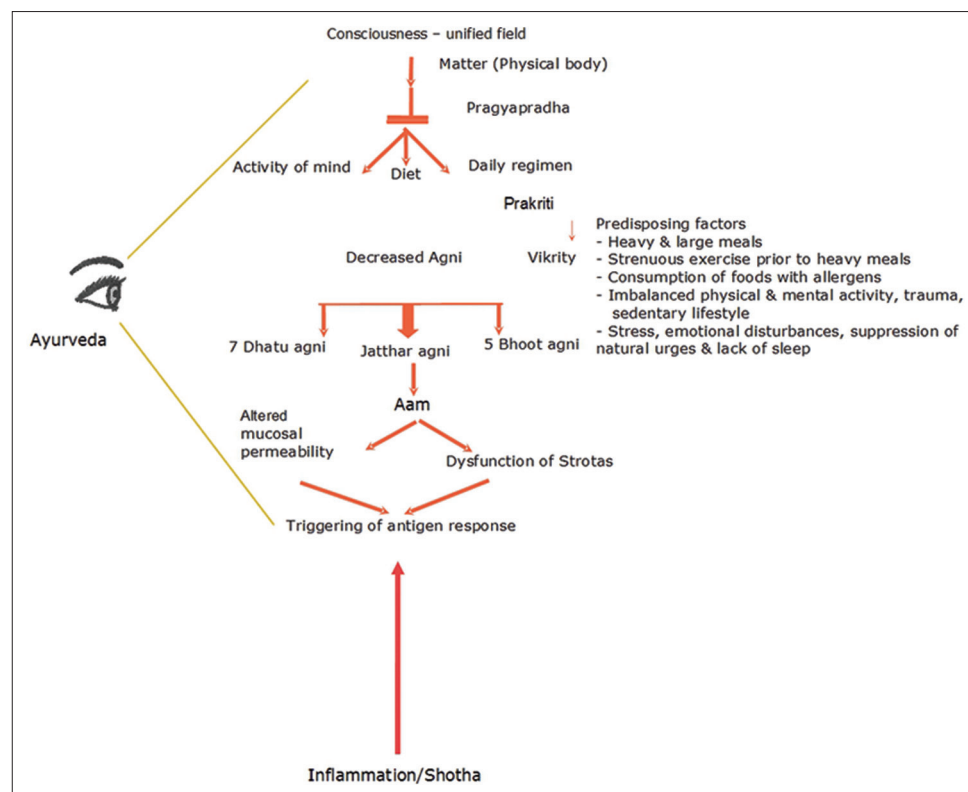


Figure 3: Pathophysiology of rheumatoid arthritis-Aamavata Ayurvedic perspective

metabolism. These *Agnis* are categorized into the three groups according to their function:

- *Jatharaagni* works at the gastrointestinal tract for digestion and assimilation of food. It is the strongest of all *Agnis* and is most important in the pathogenesis of RA/*Aamavata*.<sup>[11,12]</sup>
  - Second set of five *Bhutagnis* is for elemental/molecular metabolism dealing with the five *Mahabhutas* or five elements, the basic elements of physical matter.
  - Third set of seven *Dhatus* or tissue *Agnis* transform or metabolize 20 *Gunas* (qualities) of food into body tissues. When these *Agnis* are depleted due to continued lifestyle errors and faulty eating, the body begins producing a range of unwanted and unfinished byproducts. These abnormal byproducts tend to accumulate in the body. Such digestive and metabolic products are called *Aama*, which is believed to block the micro channels or *Strotas*<sup>[13]</sup> of the inner transport system of the body in varying degrees. Because *Aama* is a toxic, biologically unwanted and antigenic product, the body tends to react to it and reject it. Such a blockade effect and antigenic reactive process may give rise to a variety of diseases. RA is one of those diseases.
3. Alteration of bacterial flora of the gut or dysbiosis: The human body is a composite of 10 trillion karyotypic cells and 100 trillion micro-organisms. There is a symbiotic relationship between the microbes and the human body. Microbes provide nutrients to the body by helping metabolize various foods like plant carbohydrates and glycans in mother's milk, which cannot be digested by human enzymes. They also produce various vitamins like vitamin B2, B12, and folic acid. If foreign bacteria attack our body, they help the body's defense system to destroy them. Intestinal mucosa is able to selectively absorb the digested food and prevent the absorption of undigested, partially digested food or toxic substances in the body. Intestinal mucosal permeability and peristalsis is impaired in *Aamavata*.<sup>[14]</sup>
- Inflammation is a common denominator in *Aamavata* or RA, various autoimmune diseases, heart disease, obesity, diabetes, Alzheimer disease, and cancer, etc.<sup>[15]</sup> Alteration of bacterial flora of the gut occurs because of lack of *Agni* and indiscriminate use of antibiotics. Impaired permeability and motility of the gut results in absorption of not fully digested and partially detoxified food. It starts the chain reaction described earlier to cause inflammation.
4. Dysfunction of the macro and micro channels of transport or *Strotas*: Occurs from the gastrointestinal tract and vasculature all the way down to the membrane transport system.<sup>[16]</sup>
5. Increased formation of free radicals: Studies at sub-cellular levels were not available to Ayurvedic researchers to identify the free radicals but potent antioxidants in the Ayurvedic treatments are being used. Large number of preparations used in Ayurvedic practice is essentially antioxidants besides their basic molecular nutrient effect. Most of these medications are essentially nutraceuticals with minimal pharmaceutical attributes. This is why they have no known adverse side-effects and they have health promotive impact.

## Predisposing and contributing factors

- a. Heavy and large meals in relation to digestive fire or *Agni*.
- b. Strenuous exercise or physical activity after a heavy meal.
- c. Consumption of food with allergens, e.g., animal products, nuts, wheat products, and seafood.
- d. Imbalanced physical activity based upon the body type, trauma on the one hand and sedentary life-style on the other.
- e. Inflammatory bowel disease.
- f. Stress, emotional disturbances, suppression of natural urges, and lack of sleep.

## Clinical manifestations of RA or *Aamavata*

Generally, the disease begins with gradual pain, swelling, and stiffness of the multiple joints in the hands and feet at the metacarpo-phalangeal, proximal interphalangeal, metatarso-phalangeal, wrist and ankle. Elbows, shoulders, knees and temporo-mandibular (TM) joints are also commonly affected. Hip and lower back pain is less common. The neck joints are frequently affected in children. Morning stiffness lasting for 1 h or more is very common. There are also complaints of muscle pain, fatigue, low-grade fever, depression, weight loss, lack of appetite and thirst in about one-third of patients. Less frequently, patients may experience monoarticular arthritis at the onset of the disease, with more joints affected later. In palindromic rheumatism, there is episodic pain and swelling of the joints lasting anywhere from a few hours, to a few days and may reoccur days, weeks, or months later. Aside from manifestations in the joints, muscles, and tendons, there are also extra-articular manifestations in the form of uveitis, scleritis episcleritis, rheumatoid nodules, anemia, pleural and pericardial effusions, sicca syndrome, splenomegaly, vasculitis, neuropathy and renal disease. Moreover, there is increased incidence of coronary artery disease in patients suffering from RA.

According to Ayurveda, articular symptoms fall under three categories:

1. The first category of patients predominantly experience pain and tenderness of the joints with little or no palpable synovitis or joint swelling. The rheumatoid factor and/or cyclic citrullinated peptide antibodies are positive. Moreover, their pain symptoms are out of proportion to the physical signs, and these patients may be suspected of a psychosomatic component. These patients predominantly suffer from aggravated *vata*.
2. The second category is patients who have an aggravated *Pitta* which is manifested by redness of joints and burning pain.
3. The last category is patients with *Kapha* aggravation. They experience swelling with synovial hypertrophy, stiffness, and relatively less pain. Patients with one *Dosha* imbalance have better prognosis, whereas those with three *Dosha* aggravations have a poor prognosis.

## Treatment of RA – *Aamavata*

### Goals of treatment

Patients and physicians should begin working toward achieving these three sets of goals simultaneously to treat RA or *Aamavata*:

- a. Short-term: Relieving pain and restoring joint function
- b. Intermediate term: Controlling inflammation, which is the



core of the disease pathogenesis; protection of joints; and preserving body and joint function

- c. Long-term: Achieving remission, preventing complications and minimizing toxic effects of medicines.

In order to be successful, the treatment plan for RA must implement the most effective known offense and defense strategies.

## The offense strategy for treatment of RA or *Aamavata*

### Anti-inflammatory agents

In the offense strategy, the target is inflammation. Aspirin and non-steroidal anti-inflammatory drugs (NSAIDs) have mild-to-moderate success in relieving pain and inflammation. However, aspirin is no longer used due to its toxicity. NSAIDs block the activity of cyclooxygenase (COX) enzymes, which inhibit the production of prostaglandins, prostacyclins, and thromboxanes; and thus, exhibiting anti-inflammatory analgesic and antipyretic effect. The toxic effects of NSAIDs include: Impaired renal function, antiplatelet effects, sodium retention, hypertension and increased incidence of heart disease. The main toxicity associated with NSAIDs is gastric irritation, which results in peptic ulcer, perforation, and bleeding.

Recently COX-2 inhibitors are being used with less gastric irritation. Even though the irritant effect is less these medicines require frequent use of antiulcer medications to reduce the acid production, which decreases the digestive fire, and facilitates the production of *Aama*. Glucocorticoids are very effective in reducing inflammation and improving joint function and are used in the early stages of treatment in small dose of 10 mg or less along with disease modifying agents (DMARDS) as a "bridge" until the effect of DMARDS is noted. There is evidence that glucocorticoids retard the development and progression of bone erosions. Intra-articular injections of glucocorticoids in a few persistently inflamed joints provide short-term relief.

### Disease-modifying agents (DMARD)

These agents exert an indirect effect in controlling inflammation and pain by acting on various pathways of inflammation that are not well understood. Their administration is concomitant to anti-inflammatory agents, and their effect can be slow, taking several months. These agents include methotrexate, plaquenil, sulfasalazine, leflunomide, azathioprine, cyclosporine and cyclophosphamide. DMARDS are immunosuppressive and have toxic effects that require frequent follow-up with laboratory investigations. Minocycline is an effective drug in early RA and reactive arthritis.

### Biological agents

With better understanding of the pathophysiology and various pathways of inflammation, biological agents provide very effective relief of inflammation and pain within days and weeks. TNF blockers such as etanercept, infliximab, adalimumab, certolizumab pegol, and golimumab are proteins that selectively inhibit the tumor necrotic factor and stop the inflammatory process. If there is no response to one of these five TNF blockers, a trial with a second TNF blocker may be conducted, and if there is no response to two TNF blockers, other agents, such as a T-cell costimulation blocker or abatacept, a B cell depletor or rituximab or an IL-6 blocker or actemra (tocilizumab) IL-6

blocker is used. Kineret (anikara) IL-1 receptor antagonist is also another alternative. Biological agents are potentially toxic; most common side effect is lowering the body's resistance to fight infection. Moreover, activation of hidden tuberculosis and fungal infections is a possible side-effect of biological agents and hence the patients should be screened for tuberculosis before initiating treatment with any of these agents.<sup>[17]</sup>

### Surgery

Patients who develop deformities and loss of function require the use of surgery to regain function. Synovectomy has been used, but since the advent of stronger anti-inflammatory agents and better control of RA, it is being used much less.

## Defense strategy for management of RA-*Aamavata*

Before executing the defense strategy, healthcare providers should keep in mind two fundamental points: In contrast to the offense strategy of modern medicine, there is no target in the defense strategy and the tools and processes employed in the defense strategy of Ayurveda have multiple effects. These effects are usually weak, but their cumulative effect is powerful. The second point to take into account is Ayurveda's concept of the six stages of disease. In the first four stages, accumulation, aggravation, dissemination and localization of *Doshas* occur. There are no clinical manifestations and symptoms are vague. Characteristic symptoms appear during fifth and sixth stages of manifestation and disruption of disease. A health-care provider who is an expert in identifying *Vikrti*, or disequilibrium of *Doshas* in the body can reestablish equilibrium and prevent disease manifestations in the first four stages of disease. When symptoms appear in the last two stages, manifestation and disruption, both the offense and defense strategies are to be employed appropriately.

Based upon the Ayurvedic concepts of pathophysiology discussed earlier, the defense strategy consists of:

1. Balancing the *Doshas*.
2. Increasing the digestive and metabolic fires, or *Agni*.
3. Stopping the formation of *Aama* at different levels.
4. Increasing digestion and excretion of *Aama*.
5. Restoring the damaged intestinal mucosa and absorption.

Since Ayurvedic procedures and therapies have multiple effects, management will be enumerated and described by the therapy rather than the effect.

Meditation and *Pranayam* (disciplined breathing): These help in re-establishing the connection to the source to correct the "mistake of the intellect" and balancing the *Doshas*.

Yogic *Aasanas*, massage and sweating or saunas: Yogic exercises help in regaining strength, correcting deformities and improving posture. Self-massage/*Abhyanga* with sesame oil in winters and coconut oil in *Niramavastha* and in chronic conditions in summers has detoxifying, rejuvenating, anti-inflammatory and *Vata* pacifying effect. Using the sauna or sweating using various herbal preparations also has detoxifying effect. Local fomentation with *Nirgundi* has anti-inflammatory effect.<sup>[18]</sup> A qualified Ayurveda practitioner should be consulted to ensure appropriate procedures and monitor progress.

Diet: According to Charaka Samhita "Disease is the result of faulty nutrition and the distinction between health and disease arises as a result of the difference between a wholesome

and unwholesome diet.” The father of modern medicine, Hippocrates taught his students “Leave your drugs in the pot at the pharmacy if you cannot cure your patient with food” Scholars of Ayurveda find a very narrow gap between food and drugs.

The normal response to food intake is to produce an optimum amount of *Agni* or digestive enzymes. Normal or increased food intake when *Agni* is low causes a feeling of heaviness. When this feeling of an “increased load” on the gut and body tissues is felt, it is important to create “lightness” in the body and gut so the digestive and metabolic functions are allowed to return to normal. The diet should be smaller in amount, easily digestible and should be consumed when the *Agni* is high. High *Agni* is clinically manifested by increased appetite and low *Agni* by lack of appetite and a feeling of heaviness in the abdomen. *Agni* is high around noon time so morning snacks and evening dinners should be light, and lunch should be heavy. A diet containing bitter and astringent tastes is beneficial because it is rich in tannins and bioflavonoids. Tannins are good antioxidants that possess free radical scavenging activity. Bioflavonoids constitute the group of polyphenols that have the greatest antioxidant potency.<sup>[19]</sup>

### Recommended foods or *Pathya*

1. Warm water medicated with *Panchkola* (*Pippali*, *Pippalimula*, *Chavya*, *Chitraka*, *Shunthi*) in small quantity at a time helps in digestion and disintegration of *Aama*.
2. Barley, horse gram, kodo millet and the red variety of rice are recommended. These foods are light and easy to digest. Barley kernels and other products made from barley lower inflammatory markers.
3. Green leafy vegetables and fruits contain a variety of polyphenols, bioflavonoids, catechins, carotenoids, vitamin C, riboflavin, vitamin E, and low molecular weight compounds. These constituents have antioxidant, fibrinolytic and anti-inflammatory characteristics. Vegetables preferably with bitter taste like bitter melon (*Momordica charantia*), Neem (*Azadirachta indica*), *Patola* or luffa, *Gokharu* (*Tribulus terrestris*) are recommended.
4. Spices like ginger, turmeric and garlic help to add flavor to these dishes and also have antimicrobial, anti-inflammatory and analgesic properties besides their *Agni* promoting impact.
5. Wine-old wine, *Asava* and *Arishta*.
6. Meat of *Laav Pakshi*-Jungle bush quail (*Perdica asiatica*) prepared with traditional buttermilk.<sup>[20,21]</sup>

### Foods to avoid or *Apathya*

The majority of allergens come from dairy and animal products, which cause an increased production of pro-inflammatory prostaglandins.

1. Cold and impure water
2. Lentils like *Urad* and heavy foods.
3. Vegetable like arabi or eddo (*Colocasia antiquorum*) Indian spinach (*Basella rubra*).
4. Fish and sea foods.<sup>[20,21]</sup>

**Panchakarma** therapy: For increasing the *Agni*, excretion of *Aama* and removal of vitiated and accumulated *Doshas*, purification or *Shodhana* and pacifying or *Shamana* treatments

are given. This category of treatment comes under *Panchkarma* therapy.<sup>[22]</sup> It consists of

1. Medicated or retention enemas.
2. Medical emesis.
3. Medical purgation
4. Nasal medication.
5. Bloodletting.

Out of these five treatments the medicated enema is considered to be the most effective and specific therapy for this category of diseases. Emesis and purgation may reduce *Agni* and hence are not much used in *Aamavata*. Bloodletting is effective but because of its invasive nature is not used much. Medicated or retention enemas include herbal retention enemas and oil retention enemas. Herbal retention enemas remove *Aama* and accumulated *Doshas*. Various herbs used are *Dashmoola*, *Rasna*, *Eranda* (*Ricinis communis*) *Bala* (*Sida cordifolia*), *Shatavari* (*Asparagus racemosus*), *Guduchi* (*Tinospora cordifolia*), *Ashwagandha* (*Withania somnifera*), and *Gokshura* (*Tribulus terrestris*).

Oil retention enemas help to replenish the depleted body constituents. Various oils used are *Panchkola Ghrita*, *Rasnadi Ghrita*, *Ashwagandha Ghrita*, castor oil, *Dhanvantara Tailam*, and *Narayana Tailam*.

Based upon the clinical condition of the patient and judgment of the treating physician these enemas can be prescribed every other day or less frequently.

Pacifying treatments are called “*Shamana* treatments” and are recommended when the patient is not able to tolerate the *Shodhana* or purifying treatments. These are also given as maintenance treatments following the purifying treatments. These treatments help eliminate accumulated *Doshas*, *Aama*, and toxins and to regain strength. The following are various Ayurvedic herbal preparations used in the management of *Aamavata*.

### Decoctions

*Maha Rasnadikwatha*, *Ashwagandharishta*, *Bhallatakasava*-this can give rise to severe reactions in some patients especially with *Pitta Prakriti* hence it has to be used under medical supervision, *Rasna Panchak Kwatha*, *Rasna Saptaka Kwatha*, *Dashamoolarishta*, and *Amritarishta*.

### Herbal powder mixtures/*Churnas*

*Ajmodadi Churna*, *Panchakol Churna*, *Shunthi Churna*, *Ashwagandha Churna*, *Dashamool Churna*, *Rasna Churna*,<sup>[23]</sup> *Musta Churna*,<sup>[24-27]</sup> *Vaishwanara Churna*, *Kariramoola*.<sup>[28]</sup>

### Tablets

*Simhanad Guggulu*, *Mahayogaraja Guggulu*, *Yogaraja Guggulu*, *Punarnava Guggulu*, *Triphala Guggulu*.

### Ghee/Oil

*Panchakola Ghrita*, *Rasnadi Ghrita*, *Ashwagandha Ghrita*, *Dashamula Taila*, *Eranda Taila*<sup>[29]</sup> (castor oil), *Narayana Taila*, *Dhanvantara Taila*.

### Avaleha

*Bhallataka Avaleha*,<sup>[30]</sup> *Gorakha Avaleha*.<sup>[31,32]</sup>

Various preparations of *Bhallataka* can be used in *Aamavata*.<sup>[33]</sup>

## Symbiohealth Management of RA

A comparative study of the pathogenesis and treatment of RA according to modern medicine and Ayurveda gives many insights helpful in the management of this potentially crippling disease [Figure 4]. It broadens the horizon of the treating rheumatologist. He has more “tools” and knows how to execute a “defense” and “offense” strategy to win the war against disease. He is able to provide evidence-based treatment at all levels of physiology as shown in Figures 5 and 6. The treatment depends on the severity and stage of disease. Parents with RA frequently ask the treating rheumatologist if their children will also develop the disease and what they can do to prevent it. Periodic physical examinations and early detection of onset of symptoms to treat the disease is the current standard of care by the rheumatologist practicing modern medicine. As shown above, in the first four stages of disease there are no disease specific symptoms. First-degree relatives of patients with RA/*Aamavata* or asymptomatic patients with positive rheumatoid serology should have periodic guidance to keep the *Doshas* in equilibrium and prevent the formation of *Aama*. This preventive management has the potential to reduce the suffering of millions of would be potential sufferers of RA/*Aamavata*.

Patients with mild symptoms should use combination of anti-inflammatory agents, DMARDS, *Panchacola*, antioxidants, sesame oil massage, yogic exercises, *Pranayam* and diet that includes all six tastes. The use of NSAIDS is avoided because of gastric irritation and possible need to use an antiulcer treatment, which reduces the *Agni* and may play a role in perpetuating *Aama* deposition and thus inflammation. Defense strategy of treatment should be used in palindromic type of RA. During acute attacks they should be treated with anti-inflammatory agents until these acute attacks subside. Patients with moderate and severe RA are treated aggressively with both offense and defense strategies including biological disease modifying agents.

## Lessons Learned and Critical Questions

1. The modern system of medicine has focused on the cellular and molecular level to understand the RA and has found and continues to find new cellular/cytokine pathways to provide much needed help to suffering patients with this disease. In the last few decades, epigenetics has drawn attention to the phenomenon of suppressing the bad genes and stimulating the good genes by diet and life-style changes.<sup>[9]</sup> Scientists are working on developing drugs to inactivate bad genes to prevent disease. We also know

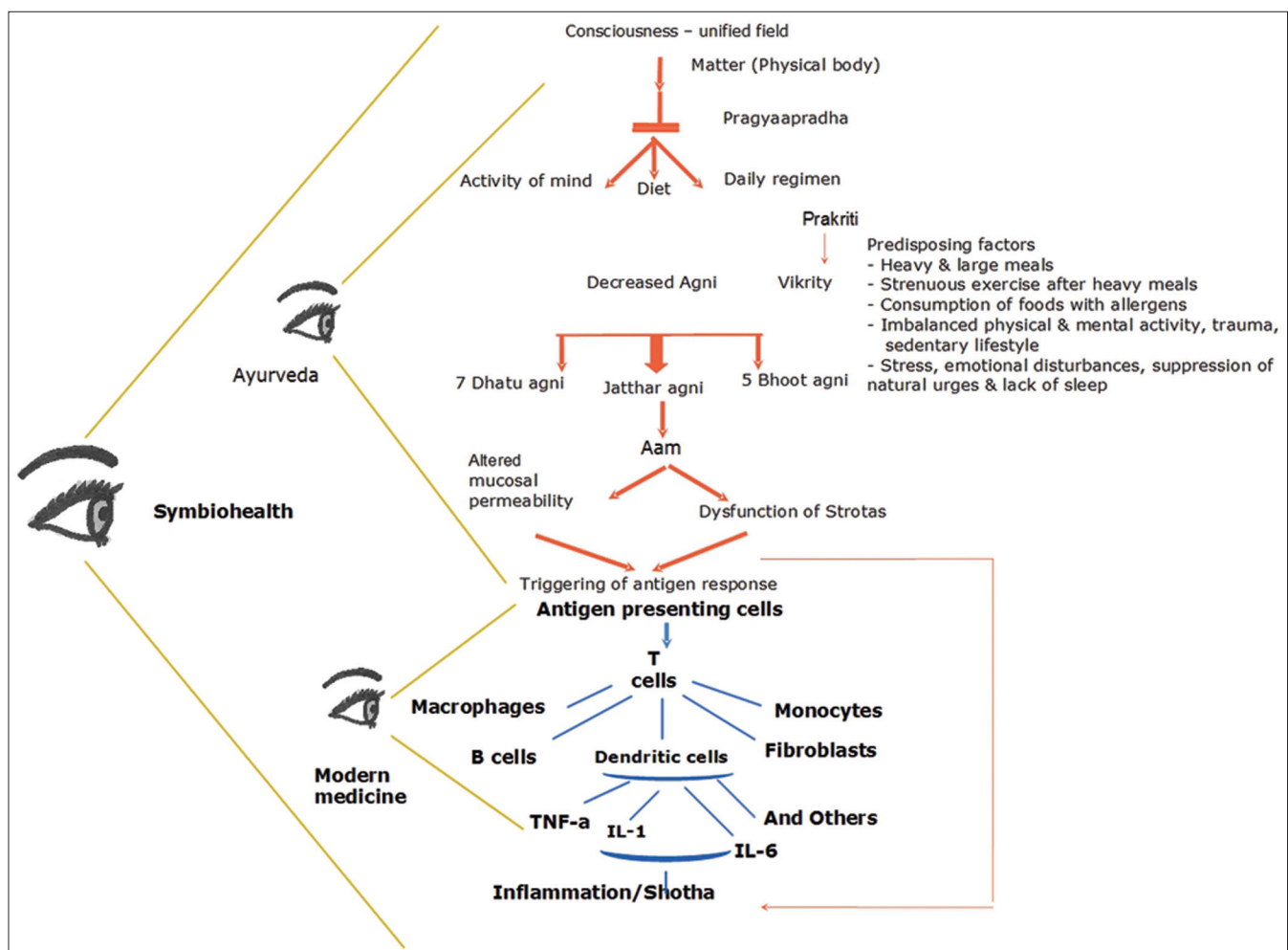


Figure 4: Pathophysiology of rheumatoid arthritis-Aamavata symbiohealth perspective



Figure 5: Three levels of health management

there are about 25,000 genes and millions of epigenes. It will be a formidable and extremely expensive endeavor to develop such drugs. On the other hand Ayurveda has a system to suppress multiple bad genes and stimulate good genes. There is a need for research in Ayurvedic system to document the benefits. Ayurvedic treatments can be compared to a shield while modern medicine treatment is like a sword. Would we like to be protected with a shield or only with a sword?

2. Recent research has highlighted the role of inflammation in all chronic diseases like autoimmune diseases, heart disease, obesity, diabetes, Alzheimer's disease and cancer, etc.<sup>[15]</sup> According to Ayurveda everyone develops *Aama* but defense system removes it. Gastrointestinal tract plays the central role in the etiology of *Aama*. Depletion of *Jatharaagni* or digestive and metabolic fire, impaired mucosal permeability and intestinal motility, altered colonic bacterial flora or dysbiosis and "leaky gut" are the main events triggering disease.<sup>[14]</sup> In turn, the disease is exacerbated further by the use of NSAIDS, anti-acid agents and indiscriminate use of antibiotics. Because *Aama* is precursor to inflammation, should we not investigate it with aggressive research?
3. Why has no attempt been made to understand two pathophysiologies of one disease so far? The reason is we have two different kinds of thinking behind each system of medicine. Ayurveda has used predominantly right-brain thinking, and modern medicine scientists have used left-brain thinking. In the post Newton era, when modern medicine started to develop, people's mode of thinking shifted predominantly towards the left-brain. Some characteristics of left-brain thinking are the ability to have a sharp focus with attention to detail and fragmenting a problem to solve it. Modern medical scientists have identified inflammation as the hallmark of RA and have found effective ways to control it. On the other hand, right brain thinking is broad, vigilant, open and contextualized. Ayurveda, using the right brain, has scanned the possible etiology of the disease and has defined ways to prevent and treat the disease. All of us use right and left-brain thinking in variable ways in daily life. One example is the vision. We use central vision for closer look at the details

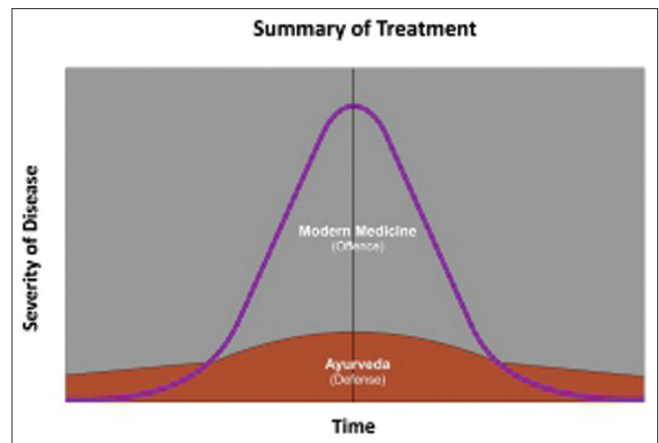


Figure 6: Summary of symbiohealth management

and peripheral vision to scan. A clinician, who uses dual thinking as and when needed, can provide better care to the people. The major problem is left-brain thinking is less corroborative and is controlling.<sup>[34]</sup> Left-brain thinkers suffer from a disability to recognize right brain thinking.

## References

1. Madhava Nidana of Madhavakara, Amavata Nidana, 25. Sanskrit commentary by Sri Vijayarakshita and Sri Kanthadatta and Vidyotini Hindi commentary noted by Sri Sudarshana Shastri, revised and edited by Y. N. Upadhyaya. Varanasi: Choukhamba Sanskrita Series; 1970.
2. Arend WP. Physiology of cytokine pathways in rheumatoid arthritis. *Arthritis Rheum* 2001;45:101-6.
3. Basisht GK. Symbiohealth-Need of the hour. *AYU* 2011;32:6-11.
4. MacGregor AJ, Bamber S, Carthy D, Vencovsky J, Mageed RA, Ollier WE, et al. Heterogeneity of disease phenotype in monozygotic twins concordant for rheumatoid arthritis. *Br J Rheumatol* 1995;34:215-20.
5. Li LC, Carroll PR, Dahiya R. Epigenetic changes in prostate cancer: Implication for diagnosis and treatment. *J Natl Cancer Inst* 2005;97:103-15.
6. Bird A. Perceptions of epigenetics. *Nature* 2007;447:396-8.
7. Valiathan MS. *Ayurvedic Biology*. New Delhi: Indian National Science Academy, GOI; 2008.
8. Dilipkumar KV. Yoga the secret of self-aware healing. *Ayurveda Health Tourism* 2012;7:44-9.
9. Ornish D, Magbanua MJ, Weidner G, Weinberg V, Kemp C, Green C, et al. Changes in prostate gene expression in men undergoing an intensive nutrition and lifestyle intervention. *Proc Natl Acad Sci U S A* 2008;105:8369-74.
10. Agnivesha, Charaka, Drdhabala, Charaka Samhita, Chikitsa Sthana, Grahani Chikitsa, 15/3-4. Reprint ed. Varanasi: Choukhamba Surbharati Prakashana; 2009. p. 512.
11. Rastogi S, editor. Chiapelli F, Ramchandani MH, Singh RH, co-editors. Evidence based Practice of Alternative and Complementary Medicine. Special Monograph. Germany: Pub. Springer Vart of Berlin Heidelberg; 2012.
12. Rastogi S, Singh RH. *Advances in Ayurvedic Medicine on Diseases of the Joints*. Vol. 5. Varanasi: Choukhamba Vishwabharti; 2005.
13. Agnivesha, Charaka, Drdhabala, Charaka Samhita, Viman Sthana, Srotovimaniya Adhyaya, 5. Reprint ed. Varanasi: Choukhamba Surbharati Prakashana; 2009. p. 249.
14. Sharma H. Leaky Gut syndrome, dysbiosis, Ama, free radicals and natural anti-oxidants. *AYU* 2009;30:88-105.
15. Libby P, Ridker PM, Maseri A. Inflammation and atherosclerosis. *Circulation* 2002;105:1135-43.
16. Singh RH. Exploring quantum logic in Ayurveda with special reference to



- Srotovigyan of Ayurveda. AYU 2009;30:360-8.
17. Genovese M, Harris E. Treatment of rheumatoid arthritis. In: Harris E, Budd R, Genovese M, Firestein G, Sargent J, Sledge C, editors. Kelley's Textbook of Rheumatology. 7<sup>th</sup> ed., Vol. II., Sec. VIII. Philadelphia: Elsevier Saunders; 2005. p. 1079-101.
  18. Singh RH, Chaturvedi GN. Certain clinical and experimental studies on the anti-arthritis effect of an indigenous drug *Vitex negundo*. Rheumatism 1966;1:125.
  19. Sharma H, Mishra RK, Meade JG. The Answer to Cancer. 1<sup>st</sup> ed. New York: Select Books, Inc.; 2002. pp. 165.
  20. Sharma H, Clark C. Diet and digestion. Ayurvedic Healing. 2<sup>nd</sup> ed. Philadelphia: Singing Dragon; 2012. p. 71-93.
  21. Govinda Das, Bhaishajya Ratnavali, Amavata Chikitsa, 29, Commentary by Ambika Datt Shastri. Reprint ed. Varanasi: Chaukhambha Prakashan; 2012. p. 613-32.
  22. Singh RH. Panchakarma Therapy. Varanasi: Choukhambha Sanskrit Series; 2007.
  23. Sharma GP, Sharma PV. Experimental study of anti-inflammatory activity of some Rasna drugs. J Res Indian Med Yoga Homoeop 1977;12:18-21.
  24. Gupta MB, Singh N, Palit TK, Bhargava KP. Anti-inflammatory activity constitute of *Cyperus rotundus*. Indian J Pharmacol 1970;2:23.
  25. Gupta MB, Palit TK, Singh N, Bhargava KP. Pharmacological studies to isolate the active constituents from *Cyperus rotundus* possessing anti-inflammatory, anti-pyretic and analgesic activities. Indian J Med Res 1971;59:76-82.
  26. Gupta SK, Sharma RC, Agarwal OP, Arora RB. Anti-inflammatory activity of the oil isolated from *Cyperus scariosus*. Indian J Pharmacol 1971;3:11.
  27. Gupta SK, Sharma RC, Aggarwal OP, Arora RB. Anti-inflammatory activity of the oil isolated from *Cyperus scariosus* (R. Br.). Indian J Exp Biol 1972;10:41-2.
  28. Zhou H, Jian R, Kang J, Huang X, Li Y, Zhuang C, et al. Anti-inflammatory effects of caper (*Capparis spinosa* L.) fruit aqueous extract and the isolation of main phytochemicals. J Agric Food Chem 2010;58:12717-21.
  29. Sharma VN, Singh V, Prabhu S. Anti-inflammatory activity of *Ricinus communis*. J Res Indian Med 1969;4:47.
  30. Sharma P, Baghel MS. The role of Amrita bhallataka avaleha and virechana karma in the management of *Amavata*. AYU 2007;27:63-6.
  31. Kishore P, Tripathi SN. *Dalberia lanceolaria* in the management of rheumatoid arthritis: A clinical and experimental evidence. J Res Indian Med 1966;1:29.
  32. Singh RH, Chaturvedi GN. Further studies on anti-arthritis property of an indigenous drug *Dalberia lanceolaria*. Indian J Med Res 1966;54:363.
  33. Kishore P, Tripathi SN. Bhallataka in management of rheumatoid arthritis (*Amavata*): A clinical and experimental evidence. Rheumatism 1966;1:188.
  34. McGilchrist, Liain. The Master and His Emissary: The Divided Brain and The Making of the Western World. New Haven and London: Yale University Press; 2009.

## हिन्दी सारांश

### आमवात की चिकित्सा में सिमबायोहेल्थ स्वास्थ्य प्रणाली का उपयोग

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आधुनिक चिकित्साशास्त्र में वर्णित रूमाटॉयड आर्थ्राइटिस का आयुर्वेद में वर्णित आमवात रोग से नैदानिक एवं चिकित्सीय संबंध है। आमवात एक जटिल रोग है जिसमें Rheumatoid arthritis को समाविष्ट किया जा सकता है। इस रोग की pathophysiology का तुलनात्मक अध्ययन प्राचीन एवं अर्वाचीन चिकित्सा प्रणाली द्वारा करने पर पता चलता है कि आधुनिक विज्ञान ने शोथ के mechanism की गहराई में जाकर आक्रामक चिकित्सा रणनीति अपनाकर इसे नियन्त्रित करने का प्रयास किया है। वहीं दूसरी ओर आयुर्वेद चिकित्सा शास्त्र स्वास्थ्य रक्षण की रणनीति का अनुसरण करता है और नैदानिक प्रक्रिया पर अपनी खोज केंद्रित करता है, जहाँ शरीरक्रिया का उच्च स्तर पर असंतुलन जठरांत्र संबंधी मार्ग को प्रभावित करता है तथा प्रतिरक्षा प्रतिक्रिया के परिणाम स्वरूप शोथ उत्पन्न होती है। दोनों चिकित्सा प्रणालियों की pathophysiology की समझ चिकित्सक को उपचार करने में सहायता प्रदान करती है। जहाँ आधुनिक औषधियों द्वारा आक्रामक रणनीति एवं आयुर्वेद उपचार द्वारा संरक्षण रणनीति द्वारा दोहरी उपचार योजना उपयुक्त होगी। दोनों चिकित्सा प्रणालियों द्वारा रोग की pathophysiology का अध्ययन इस रोग की चिकित्सा में आनुवंशिक और epigenetic घटनाक्रम की जानकारी देता है और मूलभूत अनुसंधान के नये द्वार खोलता है।