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 9th century A.D., Indian physician, Madhava wrote a full description of Aamavata 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 Barin 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. 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.
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.[8] Unlike the current system of medicine, which predominantly uses an offense strategy in treating disease, Symbiohealth 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.[5] 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.[4] In the past decade or so, epigenetic processes causing gene modification without affecting the DNA sequence have been identified.[3] DNA methylation and histone modification are examples of the epigenetic mechanisms.[6] 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.[2] 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.[7]

In contrast to modern medicine, Ayurveda understands the following five levels or sheaths of human physiology called “Pancha Kosha”[9] [Figure 2].
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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 Pragyaparadha 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.[9] 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. There are 13 Agnis responsible for the entire process of digestion of food and all aspects of metabolism, including elemental/molecular...
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.[11,12]
- Second set of five Bhutagnis is for elemental/molecular metabolism dealing with the five Mahabhuthas or five elements, the basic elements of physical matter.
- Third set of seven Dhatus or tissue Agnis transform or metabolize 20 Ganas (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[13] 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.[14]

Inflammation is a common denominator in Aamavata or RA, various autoimmune diseases, heart disease, obesity, diabetes, Alzheimer disease, and cancer, etc.[15] 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.[16]

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 aggravation 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

e. 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, cyclophosphine 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.[17]

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 Vikriti, 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 Nimrnavaastha 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.[19] 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.[19]

**Recommended foods or Pathya**

1. Warm water medicated with *Panchkola* (*Pippali, Pippaltmula, Chavya, Chitraka, Shanthi*) 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 (*Memordica charantia*), Neem (*Azadirachta indica*), Patola or luffa, *Gokharu* (*Trubulus 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* (*Perdicula asiatica*) prepared with traditional buttermilk.[20,21]

**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 (*Spinacia*), 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.

4. Fish and sea foods.[20,21]

**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 *Panchakarma* therapy.[22] 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 *Dashmoolaa, Rasna, Eranda, Eranda, Eranda, Eranda* (*Ricinum communis*) *Bala* (*Sida cordifolia*), *Shatavari* (*Asparagos racemosus*), *Guduchi* (*Tinospora cordifolia*), *Ashwagandha* (*Withania somniferaa*), and *Gokshura* (*Trubulus terrestrisa*).

Oil retention enemas help to replenish the depleted body constituents. Various oils used are *Panchkola Ghrita*, *Rasna Ghrita*, *Ashwagandha Ghrita*, castor oil, *Dhamantara Tailam*, and *Narayan 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 Rasnadi Kwatha, *Ashwagandharistha, 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*, *Dashamoolarishtha*, and *Amritarishtha*.

**Herbal powder mixtures/Churnas**

*Ajonodadi Churna*, *Panchakol Churna*, *Shunthi Churna*, *Ashwagandha Churna*, *Dashamool Churna*, *Rasna Churna*.[21]

*Musta Churna*,[24-27] *Vaishwanara Churna*, *Kariramoola*.[28]

**Tablets**

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

**Ghee/Oil**

*Panchakola Ghrita*, *Rasna Ghrita*, *Ashwagandha Ghrita*, *Dashamula Taila*, *Eranda Taila*.[29] (castor oil), *Narayan Taila*, *Dhamantara Taila*.

**Avaleha**

*Bhallatakav Avaleha*,[30] *Gorakha Avaleha*.[31,32]

Various preparations of *Bhallataka* can be used in *Aamavata*. [33]
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 message, 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. 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](image-url)
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. 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. 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 pathophysiology 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 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. Left-brain thinkers suffer from a disability to recognize right brain thinking.

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हिन्दी सारांश
आमवात की चिकित्सा में सिमबायोहेल्थ स्वास्थ्य प्‍रणाली का उपयोग

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आधुनिक चिकित्साशास्त्र में वर्तमान रमाटॉप्टिक आर्थ्रोडिस्ट का आयुर्वेद में वर्तमान आमवात रोग से नैदानिक एवं चिकित्सीय संबंध है। आमवात एक जोड़िल रोग है जिसमें Rheumatoid arthritis को समावेश किया जा सकता है। इस रोग की pathophysiology का तुलनात्मक अर्थविशेष और अर्थविशेष चिकित्सा प्रणाली द्वारा करने पर पता चलता है कि आधुनिक विज्ञान ने शोध के mechanism की गतिविद्या में जाकर आरक्रमक चिकित्सा रणनीति अभावाकर इसे नियंत्रित करने का प्रयास किया है। वर्तमान और आयुर्वेद चिकित्सा शाखा स्वास्थ्य रक्षण के रणनीति का अनुसरण करता है और नैदानिक प्रक्रिया पर अपनी खोज केंद्रित करता है, जहाँ शरीरक्रिया का उच्च स्तर पर अश्रृंखल जड़रंग संबंधी मार्ग को प्रभावित करता है तथा प्रतिक्रिया प्रतिक्रिया के परिणाम स्वरूप शोध उत्पन्न होती है। दोनों चिकित्सा प्रणालियों की pathophysiology का समझ चिकित्सक को उपचार करने में सहायता प्रदान करती है। जहाँ आधुनिक ओषधियों द्वारा आरक्रमक रणनीति और आयुर्वेदिक उपचार द्वारा संरक्षण रणनीति द्वारा दोनों 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 द्वारा खोलता है।