Review Article

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AN ETIOPATHOLOGICAL STUDY OF AMAVATA: A CRITICAL REVIEW

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ABSTRACT

Rheumatoid arthritis (RA) is a systemic, autoimmune disease most commonly found in today's era. Rheumatoid arthritis can be correlated with Amavata in Ayurveda, where acharyas well explain the etiopathology of the disease. Nidana plays a vital role in the progression of the disease. Hence, knowledge of nidana is essential for avoiding disease conditions and treatment. Rheumatoid arthritis is a disease with an unknown cause or genetic susceptibility, according to modern science. Therefore, we need to find causative factors explained in Samhitas that can correlate with the modern era.

Keywords: Amavata, Virudhha, Rheumatoid arthritis, Genetic.

INTRODUCTION

There has been a rapid transition in accordance with health issues in the past several decades where a shift from infectious diseases to non-communicable diseases has been taking place[1]. The western diet, which includes high fat and cholesterol, high protein, excessive salt intake, along with frequent consumption of food, is more trending nowadays, which promotes many lifestyle disorders like obesity, cardiovascular diseases, rheumatoid arthritis, etc. and these are now considered as due to chronic inflammatory processes in the body[2].

Amavata is a chronic systemic disease involving multiple joints[3]. Among ancient Ayurveda Samhitas, Madhava nidana mentioned the Amavata as a specific disease entity for the first time, where ama and vata play a predominant role in the samprapti of the disease[4]. This is mainly due to ahitakara aaharavihara, which causes the derangement of agni and, subsequently, the production of ama[4]. Ama undergoes circulation resulting in its stagnation in the body leading to sandhishoola, sandhishotha and graha. Along with these localized symptoms, some associated symptoms like aruchi, aalasya, shariragaurava, etc[5].

The clinical manifestation of Amavata can be correlated with Rheumatoid arthritis in modern science, an autoimmune disorder of unknown etiology[6]. But in Ayurveda, acharya gives nidana, i.e., causative factors of Amavata. So, it is important to find out more causative factors based on Samhitas, which help to prevent disease progression.

Literary Study

Though in Samhita kaal, we do not find any references to Amavata as a complete clinical entity in any of the Ayurvedic classics, some references available are mentioned as –

1. **Charaka Samhita**: In Charaka Samhita, ama is described as a causative factor of the disease and a description of its production, similarity with visha gunas, and dietary and therapeutic interventions for its management are also mentioned. The word Amavata has been used in the following context –
a) Therapeutic uses of Kansa Haritaki: Ch. Chi. 12/50-52
b) Therapeutic uses of Vishaladi phanta: Ch. Chi. 16/60-63
c) Chikitsa of aavarana of vata by ama: Ch. Chi. 28/195
d) Kaphavritta vyana lakshanas resembles Amavata: Ch. Chi. 28/228

2. **Sushruta Samhita**: Acharya Sushruta has mentioned the details in accordance with kaphavritta vyana. The symptoms of this condition can be correlated with Amavata: Su. Ni. 1/39 3.

3. **Harita Samhita**: In this samhita, a separate adhyaya on Amavata with its full description of aetiology, pathology, clinical manifestations, prognosis and treatment. The description is different to that mentioned in Madhava nidana. The classification of Amavata is unique. Any of the later authors have not followed such a description. (Haritha 3-21)

4. **Madhav Nidana**: Acharya Madhavakara is the first to consider Amavata as a separate disease entity. A comprehensive description of nidana, samprapti, samanya lakshanas, pravriddha lakshanas and dosha vishishta lakshanas, upadravas, and sadhyasadhyatva have been made. (Madhava nidana 1 -25)

5. **Sharangdhara Samhita**: The classification of Amavata is mentioned into four types vataja, pittaja, kaphaja and sannipatika. (Sharangdhara 1-7/41)

6. **Bhavaprakasa Samhita**: Acharya Bhavmishra has explained Amavata in detail along with its treatment and has described the importance of Eranda in managing the disease. (Bhavaprakasa 2-26)

Causative factor of Rheumatoid arthritis as per modern medicine

Rheumatoid arthritis is a chronic multisystem disease of unknown causes. Rheumatoid arthritis is the most common disease, with a peak incidence in 3rd to 4th decades of life, with 3-5 times higher preponderance in females. The condition has a high association with HLA-DR4 and HLA-DR1 and familial aggregation. This association is particularly marked in those Rheumatoid arthritis cases with cyclic citrullinated polypeptide (CCP) antibodies.

Severity is also under genetic influence, with DR4 positivity more common in those with severe erosive disease. Although it is thought that Rheumatoid arthritis may be triggered by an infectious agent in a genetically susceptible host, a specific pathogen has not been identified. Susceptibility is increased post-partum and by breastfeeding. Cigarette smoking is a strong risk factor for developing Rheumatoid arthritis and also associates with greater severity[7].

As Per Ayurveda

Acharya Madhavakara has described the causative factors of Amavata briefly. Acharya Bhavamisra and Yogaratnakara have mentioned the same hetus as Madhava nidana. These can be classified as,[4]

Virudhha Ahara: The substances opposite to dosh-dhatu bhavas act as virodhi to them[8]. Viruddha ahara is considered the most critical factor responsible for the causation of many diseases. Acharya Charaka stated that a particular diet and its combinations, which interrupt the metabolism of tissue, which inhibits the process of tissue formation, and which have the opposite property to the tissue, are called viruddha anna or incompatible diet. This food combination has undergone wrong processing, consumed in the incorrect dose, and/or consumed at the incorrect time of the day and in the wrong season, which can lead to viruddha ahara.

With the help of modern technology and biochemistry aspects, it becomes easy to elaborate on the effect of viruddha ahara. Food–food interaction is a serious issue, but not a much alert. Most of this food–food interactions are harmless, but it is always better to know about some of them.

Ayurveda literature has described various types of viruddha ahara, which can be summarized as follows[9]

1. Desha (place) Viruddha
2. Kala Viruddha
3. Agni Viruddha
4. Matra (quantity) Viruddha
5. Satmya (wholesome) Viruddha
6. Dosha Viruddha
7. Sanskar (mode of preparation) Viruddha
8. Veerya (potency) Viruddha
9. Koshtha Viruddha
10. Avastha (state of health) Viruddha
11. Kram (sequence) Viruddha
12. Parihar Viruddha
13. Upachar (treatment) Viruddha
14. Paak (cooking) Viruddha
15. Samyoga (combination) Viruddha
16. Hriday Viruddha
17. Sampad (richness of quality) Viruddha
18. Vidhi (rules for eating) Viruddha

Virudhha Cheshta: (Incompatible activity)
It includes the activities that are antagonists to the body's normal physiology. The activities that exert unfavourable effects on the body and their continuous application led to dosha vaishamya can be considered viruddha cheshta. More conditions of viruddha chestha include,

1. Vega vidharana - Suppression of natural urges like mala, mutra, etc.
2. Divaswapa - Day time sleeping
3. Ratrau jagarana - Awakening at night
4. Atisahasa - Performing the acts beyond one capacity
5. Ati vyavaya - Excessive indulgence in a sexual act
6. Ati vyayama - Excessive physical exercise
7. Vishama Shayya, Aasana - Sleeping or sitting on an uneven bed

Mandagni
Acharya Vagbhata has stated that mandagni is the root cause of many diseases[10]. Proper functioning of jatharagni is very important because it also affects the functions of bhutagni and dhatvagni[11].

Nischalatva
Any type of physical inactivity can be termed as nischalatva. Individuals who are mostly less active and have a sedentary lifestyle are the most sufferers of this disease.

Snigdha Bhojanottara Vyayama
After taking snigdha aahara, a large quantity of kaphodeerana takes place during the first digestion phase, madhura avasthapaka[12]. Vyayama leads dosha to travel from koshtha to shakha[13]. Ama is unique and important concept explained in Ayurveda science. Ama hampers the bio- transformation activity i.e., Agni. As in Ayurveda described that all disease formation is due to the Agni mandya. Therefore, concept of ama and Agni is very important. Ama is described as substance, of our own body which is not digested properly and need further digestion or a substance which is incompletely metabolized or partially metabolized. It acts as factor which cause immune suppression and leading to auto immune disorders.

DISCUSSION

Virudhha Ahara
According to Acharya Sushruta,
Tara- tama yukta bhava ahara[13], like atisnigdha, atiruksha, atiushna, and atisheeta, should be avoided. E.g., milk and fish have madhura rasa-madhura vipaka –maha abhishyandi property called balvan saman guna (similar strong property). Milk has sheeta virya, and fish has ushna virya property called balvan viruddha guna (strong contradictory property), which causes dhatu dushti, so it is called virudhha ahara.

Some common examples of virudhha ahara in routine life are –

- Drinking normal or cold water in large quantities in the morning without passing urine and stool/exercise.
- Drinking water before meals, after meals, or not in between meals.
- Drinking chilled water in summer or drinking chilled water in the winter season.
- Frequent consumption of sizzling brownies.

Rheumatic diseases lead to many diseases with a loss of immune self-tolerance, chronic inflammation, and degeneration in multiple organs or tissues. The cause of rheumatic diseases remains to be decoded, though both environmental and genetic factors are required for the progression of rheumatic diseases.

Over the last several decades, rising studies suggested that alteration of intestinal microbiota, known as gut microbiota, contributed to the occurrence or development of rheumatic diseases, including rheumatoid arthritis, systemic lupus erythematosus, ankylosing spondylitis, systemic sclerosis, and Sjogren's syndrome, through extremely affecting the balance between pro- and anti-inflammatory, immune reaction.

How the Microbiota shapes Rheumatic Diseases

- Gut microbiota shape immune responses
- Both innate and adaptive immunity are influenced by gut microbiota, locally in the gut as well as systemically
- Intestinal dysbiosis is a feature of several inflammatory rheumatic disorders
- HLA-shared epitope alleles, smoking and specialized microbiota at mucosal sites modulate the development of anticitrullinated protein antibodies
- Gut inflammation in spondylarthritis is linked to a more severe disease course and risk of developing Crohn's disease and is associated with intestinal dysbiosis
- Restoring intestinal homeostasis by altered microbiota is an attractive therapeutic strategy to combat rheumatic diseases

Thus, gut microflora can be a factor in ama's production, leading to rheumatism.

Virudhha chestha

Acharya Madhukosh stated in tika that doing exercise, sexual acts, swimming even in indigestive condition[5]. Thus, two ahariya dravya, two vihariya dravya, one ahariya and one vihariya dravya, which causes dhatu dusthi, is called virudhha, which is the ultimate cause of the production of ama.

It is proposed that hyaluronic acid, produced in the joint tissue structures and accumulated at rest, is carried by the lymph vessels to the general circulation during physical activity. In Rheumatoid arthritis, the more pronounced HA outflow is probably due to enhanced synthesis, and thus accumulation, of HA in the inflamed joint tissue. This may cause morning stiffness because HA excessively accumulated in the joint tissue could immobilize water and mechanically hinder joint movements. [16]

According to a study, circulating hyaluronic acid levels vary with excessive physical exercise in healthy persons and Rheumatoid arthritis patients. So, again here, ama is the predominant causative factor that leads to Amavata, i.e., Rheumatoid arthritis.

Mandagni

Agnimandya, in turn, results in the formation of ama, leading to srotorodha (obstruction). Due to dhatvagnimandya, proper nutrition to rasadhatu does not occur, resulting in dhatukshaya ultimately leading to vitiation of vata. Thus, it can be stated that mandagni results in the production of ama and the vitiation of vata, which are the two predominant factors in the pathogenesis of Amavata.

Nischaltva

Physical inactivity is responsible for the kapha vriddhi in the body, resulting in agnimandya and eventually forming ama. Thus, the ama slowly accumulates in the body, and the pathogenesis continues.

The term Sedentary Behaviour (SB)—derived from the Latin term *sedere*, meaning to sit—is often simply defined as too much sitting.[16] Until recently, a common misapprehension has been that sedentary behaviour merely reflects the absence of purposeful physical activity. Current thinking recognizes that sedentary behaviour and physical inactivity are separate constructs. So physically inactive individuals can also be non-sedentary, where, in the absence of moderate-intensity activity, they still engage in substantial amounts of light physical activity and spend little time sitting.[17] Similarly, sedentary individuals can also be physically active, i.e., they spend large portions of the day engaged in low-energy sitting behaviours.

Sedentary Behaviour and Rheumatoid arthritis

Common sequelae of uncontrolled high inflammatory load in Rheumatoid arthritis include joint pain and stiffness, fatigue, compromised psychological well-being (e.g., depression), reduced quality of life, increased CVD risk and cachexia, among others.

Since sedentary behaviour may relate to increased inflammation, it may hold implications for such Rheumatoid arthritis features. This may lead to a vicious cycle, where compromised physical function, heightened fatigue and increased local disease activity may increase sedentariness, which, in turn, may further exacerbate inflammation and contribute towards the severity of Rheumatoid arthritis related health outcomes. [16]

Snigdha Bhojanottara Vyayama

Nowadays, the young generation follows gym activities to increase muscle strength. So pre work out shakes and proteins are usually taken before exercise. So, when exercise is done just after consumption of snigdha aahara, the kapha dosha produced travels towards shakha from koshtha with the help of vayu, which later lodges at shleshma sthana, manifesting a disease. Thus, all of these nidana is responsible for ama production, which can be converted into Amavata.

The present study was done on limited and common etiological factors. So, further study can be conducted on a large population with a survey study.

CONCLUSION

According to modern studies, Rheumatoid arthritis is a disease mainly causing due to genetic susceptibility, although according to Ayurveda, Acharya Charaka explained that virudhha ahara, which is the most important factor responsible for ama, could remain in the body for a long term in untreated condition and further it can be converted into santana dosha, i.e., genetic disorders. People with sedentary routines and who don't follow proper dietary habits and exercise daily are predisposed to develop the disease. Agnidushti is the main reason responsible for the pathogenesis of the disease, i.e., mandagni is the most important and ignored factor by today's generation.

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