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Review Article

EFFECT OF *RASONADI KWATH* IN THE MANAGEMENT OF RHEUMATOID ARTHRITIS: A REVIEW

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ABSTRACT

Rheumatoid arthritis is a most common persistent inflammatory arthritis of unknown etiology marked by symmetric, peripheral poly arthritis and often result in joint damage and physical disability. Arthritis is always associated with arthralgia. It is 1.0-1.5% with a female to male ratio of 3:1 functional capacity decrease most rapidly at the beginning of disease and the function state of patients in their first year. R.A. Etiology like Immunological factor (HLA-DRB1), Hormonal factor, contraceptives pills, is also associated with a worse disease outcome in R.A. Particularly in genetically predisposed individuals, some environmental antigen trigger, probably a virus, stimulates the production of autoantibodies (IgM rheumatoid factor) against the body, own IgM immunologlobins. This process can become self perpetuating. The prominent feature is the formation of immune complexes. within the joint resulting from tissue damage. These complex activate complement and attract neutrophils. Phagocytosis of immune complexes by neutrophils leads to release of chemical mediators of inflammation. Continued inflammation stimulates the formation of a proliferative synovitis. This hypertrophic granulation tissue is called pannus. This process is responsible for the causing joint erosions. In *Ayurveda* it is clinically correlated with *Aamvata*. According to *Bhavprakash* Beautiful composition is given in *Aamvata chikitsa 26th chapter Rasonadi Kwath*. Conceptually it is play very effective role because of it's *Sothhara, Vedna-sthapana, Kapha-vatashamak, Deepan-Pachan, Anuloman, Shoola-prashman,* and also *Shunthi* is *Uttam Aama pachak*. The aim of this article is to provide a management for RA by *Rasonadi Kwath.*

KEYWORDS: Rheumatoid arthritis, *Rasonadi Kwath*, *Aamvata*, Arthralgia, HLA-DRB1.

INTRODUCTION

Rheumatoid arthritis is one of the collagen disease, rheumatoid arthritis term is derived from Greek word for a flowering stream or river. It is an autoimmune disease[8]. Rheumatoid arthritis (R.A.) is a inflammatory disease with unknown origin [1], the synovial become thick, leading to the development of swelling around joints and tendon. The symptoms are pain, stiffness of joint. The chronic inflammation occurs due to the continuous production of auto antibodies called rheumatoid arthritis factor[2]. Characterized by symmetrical relapsing ankylosing polyarthritis affecting mainly the peripheral small joint initially, associated with varied constitutional symptom and presence of Rheumatoid factor [3], primarily affecting the synovium and adjacent tissue[4]. People have been prone to become stressed or even depressed as a result of limited movement and who aren't able to do the activities that were once beyond their everyday lives. This result in inflammation process causing redness and swelling in joints and around them. Rheumatoid Arthritis is a chronic autoimmune disease that primarily involves the joints. In Ayurveda *Amavata* can be correlated to Rheumatoid Arthritis. The basic pathophysiology of *Amavata* primarily involves *Ama* and *Vata*[19]. usually with asymmetrical distribution. It's systemic manifestation include hematologic, pulmonary, neurological and cardiac vascular abnormalities. It is hetaro-genous disease with variable severity unpredictable course and a variable grasp once to drug treatment. The disease prevalence worldwide is approximately 0.8% of the population. In India the prevalence of R.A. is 0.5 to 0.75%. the peak age of onset is in the fourth & fifth decade of life with more the 75% patients developing disease between 30 & 50 years of age. The condition is high association with HLA-DR4 and HLA-DR1 and familial aggregation [5]. The onset of disease is insidious beginning with proderm of fatigue, weakness, joint stiffness of joint usually in symmetrical fashion especially involving joints of hand, wrist and feet.

Genitic and Risk Factor [8]

The disease is usually begins between 25 and 55 years but may affect both older and younger people, rheumatoid arthritis affect about 3% of female and 1% of the male population in temperature climate. It is seen 2 to 4 time more often in first degree relation. The disease concordance in mono Zygotic twins is approximately 30-50%. While it is similar to non-twins siblings in dizgotic twins. Non-genetic risk factor included gender and tobacco. Role of hormones, Pregnancy and related physiological alteration, fetal-maternal interaction have been implicated smoking causes repeated insult to the mucosa of Airways causing persist low grade inflammation that activates innate immune system through engagement of toll like receptors.

AIMS AND OBJECTIVES

(1) To provide a adequate knowledge about Rheumatoid arthritis.

(2) Management with the Ayurved perspective by *Rasonadi Kwath.*

Etiopathogenesis [3]

In present RA occur is an immunogenetically predisposed individual to the effect of microbial agents as trigger antigen, more role recently the role of superantigens which are produced by several micro-organism with capacity to bind to HLA-DR molecules and some others predisposing factors are following.

- Heredity – It may play a part in 5% to 10% of case.
- Infection – Septic foci in the teeth, tonsil, gums or anywhere may play some part.
- Trauma – In many cases history of trauma is present.
- Climate – It was though to be more common in temperature climates, however, it is equally prevalent in India also.
- Race – The disease does not occur in Negroes.
- Nutrition – Nutritional deficiency play a important part.
- Psychic factors – Psychic upstate is held responsible for this disease.

Clinical Features [18]: Insidious onset with fatigue, anorexia, weakness, and vague musculoskeletal symptoms & acute onset with rapid development of polyarthritis accompanied by constitutional symptoms-

- Morning stiffness more than 1 hour
- Arthritis of 3 or more joints
- Arthritis of hand joints
- Duration of 6 week or more
- Rheumatic nodules

Type of Presentation [4]

(1) Classical – Pain, stiffness and swelling of small joints of hand and wrist, symptoms fluctuate in severity from day to day.

(2) Palindromic – Intermittent episode of pain, swelling and redness usually of a single joint, followed by rapid return to normal after several days.

(3) Systemic – Weight loss, pleurisy and pericarditis but minimal joint involvement.

(4) Polymyalgic – Pain and stiffness in shoulder and hips with subsequent synovitis.

(5) Monoarthritis – Single joint involvement, usually the Knee.

(6) Acute onset – Sudden overnight onset with stiffness and pain.

Pathological Changes[8]: The predominant pathology lesion are found in the joints and tendons and less often, extra-articular lesion are encountered.

- **Synovium-Histology:** The synovial lining of an affected joint is inflamed and hyperplastic and proliferates to form swollen congested, thick villus process which project into the joints space.
- **Articular cartilage:** Prominent pannus may form over the articular cartilage, which may undergo organization, leading to fibrous ankylosis and sometimes bony ankylosis, in some patients with rheumatoid arthritis, chronic inflammation leads to the destruction of cartilage, bone and ligament causing deformity of joints.
- **Synovial Fluid analysis:** It is less viscous than normal. Joint fluid analysis usually reveals a WBC count of 2000-5000/cumm. The concentration of protein in fluid is increased.

Articular Manifestation [9]

Hand & wrist

- Swelling of the proximal but not the distal interphalangeal joint, result in Spindling of the fingers.
- Hyperextension of the proximal interphalangeal joints with flexion of the distal interphalangeal joints result in Swan-nesck deformity.
- Extensor tendo rheumatoid granulomata and tendon rupture result in Dropped finger.
- Radial deviation of the wrist with ulnar deviation of the digit often with palmer subluxation of the proximal phalanges result in the Z deformity.

Foot & ankle

- Swelling of the metatarsophalangeal joints result in broadening of the forefoot.
- Lateral deviation and dorsal subluxation of the toes.
- Eversion at the hind foot.

Other joint

- Flexion contracture of elbow, wrist, knee and hips,
- Shoulder joint involvement can occur as glenohumeral arthritis and rotator cuff fraying and rupture.
- Cervical spine involvement can result in atlanto-axial subluxation with progressive spastic quadriparesis.

Extra-Articular Manifestation [9]

Rheumatoid nodules

- Rheumatoid nodules are clinical predictors of more severe arthritis, sero-positivity, joint erosion and rheumatoid vasculitis.

Pleuropulmonary manifestation

- Pleural involvement result in effusion with low levels of pleural fluid glucose.
- Pulmonary involvement resulting in interstitial fibrosis.
- Caplans syndrome- Multiple nodules and interstitial lung disease due to pneumoconiosis.

Cardiovascular manifestation

- Pericarditis and chronic constrictive pericarditis.
- Premature atherosclerosis.
- Valvular involvement.
- Conduction defect.

Neurological manifestation

- Nerve entrapment syndrome.
- Spinal compression due to atlanto-axial subluxation.
- Peripheral neuropathies.

- Felty syndrome
- This is the association of spleenomegaly and neutropenia with RA.

Osteoporosis

- Osteoporosis secondary to rheumatoid involvement is very common. It may be aggravated by corticosteroid therapy and immobilization.

Haematological manifestation

- Normocytic normochromic anaemia
- Thrombocytosis
- Eosinophilia and mild leucocytosis

INVESTIGATION [4]

- Markers of acute inflammation- raised ESR, anaemia, thrombocytosis, increase levels of acute phase protein (CRP).
- Rheumatoid factor
- Anticitrullinate protein antibodies (ACPA), usually detected by anticyclic citrullinated peptide (CCP) antibodies.
- Ultrasonography & MRI for the detection of soft tissue synovitis before joint damages.
- Synovial fluid analysis, Synovial biopsy and arthroscopy.

DIFFRENTIAL DIAGNOSIS [3]

- Rheumatic arthritis
- Tubercular arthritis
- Osteoarthritis
- Troumatic arthritis
- Gouty arthritis
- Pyogenic arthritis
- Gonorrhoeal arthritis
- Psoriatic arthritis
- Haemophilic arthritis

Management of Rheumotoid Arthritis

In *Ayurveda* RA is conceptually very well correlated with *Aamvata.*[13] It is a joint disorder joint are made into two varieties- (1) *Cestavanta* (Mobile) and (2) *Sthira* (Non-mobile). This is important to note during the examination of joints because disease like *Sandhivata* always occur in *Cala sandhis* but not in *Sthira sandhi*, because of predominance of *Vata* in *Cala sandhi*.

absence of *Slesmadhara kala* in which *Slesaka kapha* is absent or slightly present. This is an important diagnostic features that *Amavata* condition prevail in *Slesaka kapha sandhi* (synovial joints) only. That means *Amavata* affects the joints in limbs, mandible and vertebrae only[18]. According to *Bhavprakash* Beautiful composition is given in *Aamvata chikitsa* 26th chapter *Rasonadi Kwath*. Conceptually it is play very effective role because of its rich properties [6].

***Rasonadi Kwath* [6,7]**

Table 1: *Rasapanchak*

S.No.	*Dravya*	*Rasa* [14]	*Guna* [15]	*Veerya* [16]	*Vipaka* [17]
1	*Rasona* [10]	*Madhura, Lavana Katu, Tikta, Kashaya*	*Snigdha, Tikta, Pichala, Guru*	*Ushana*	*Katu*
2	*Shunthi* [11]	*Katu*	*Laghu, Snigdha*	*Ushana*	*Katu*
3	*Nirgundi* [12]	*Katu, Tikta*	*Laghu, Ruksha*	*Ushana*	*Katu*

(1) *Rasona* [20]

Table 2: Active Properties of *Rasona*

S. No	Active Principle	Action
01	Adenosine	Immunomodulator
02	Ajoene	Anti-iflammatory,COX-2inhibitor
03	Allicin	Anti-inflammatory
04	Alpha-tocopherol	Anti-arthritic, Immunomodulator
05	Ascorbic acid	Anti-arthritic, Immunomodulator
06	Beta-carotene	COX-1,2 inhibitor
07	Caffeic-acid	COX-2 inhibitor
08	Calcium	Anti-arthritic, Anti-inflammatory
09	Chromium	Immunomodulator
10	Copper	Anti-arthritic, Anti-inflammatory, Immunomodulator
11	Eicosapentaenoic-acid	Immunomodulator
12	Kaempferol	Anti-inflammatory, COX-2 inhibitor
13	Magnesium	Immunomodulator
14	Manganese	Anti-arthritic
15	Phosphorus	Immunomodulator
16	Qurecetin	Anti-arthritic, COX-2 inhibitor
17	Selenium	Anti-arthritic, Anti-inflammatory, Immunomodulator
18	Tryptophan	Anti-rheumatic
19	Zinc	Anti-arthritic, Anti-inflammatory, Immunomodulator

(2) *Shunthi* [20]

Table 3: Active Properties of *Shunthi*

Ser. No	Active Principle	Action
01	1,8-Cineol	Anesthetic, Anti-rheumatic
02	10-Dehydrogingerdion	Anti-inflammatory, Antiprostaglandin
03	10-Gingerdion	Anti-inflammatory, Antiprostaglandin
04	6-Dehydrogingerdione	Anti-inflammatory, Antiprostaglandin
05	6-Gingerdione	Anti-inflammatory, Antiprostaglandin
06	6-Gingerol	Antiprostaglandin, Analgesic
07	Alpha-curcumene	Anti-inflammatory, Immunomodulator
08	Ascorbic-acid	Anti-inflammatory, Immunomodulator
09	Beta-carotene	COX-1,2 inhibitor
10	Beta-sitosterol	Anti-inflammatory
11	Caffeic-acid	Anti-inflammatory, COX-1,2 inhibitor, Analgesic
12	Calcium	Antiarthritic
13	Camphor	Analgesic
14	Chromium	Immunomodulator
15	Citral	Anti-inflammatory
16	Copper	Antiarthritic, Anti-inflammatory, Immunomodulator

(3) *Nirgundi* [20]

Table 4: Active Properties of *Nirgundi*

S. No	Active Principle	Action
01	Beta-sitosterol	Anti-inflammatory
02	Artemetin	Anti-inflammatory
03	Isorhamnetin	Anti-inflammatory
04	Luteolin	Anti-inflammatory

RESULT

Due to all above properties and mentioned properties on Table 1 to Table 4 each drug of this compound are Anti-inflammatory, Immunomodulator, Analgesic, Antiarthritic, COX-1,2 inhibitor, Anti-prostaglandin which is also help to treat RA so this particular drug *Rasonadi Kwath* is conceptually play a very effective role in the management of Rheumatoid arthritis (R.A.).

DISCUSSION

Sedentary life style, stressful situations and fast food dietary patterns are responsible factors for the manifestation of disease. The etiological factors like *Guru Ahara*, *Viruddhahara*, *Viruddha Cheshta, Mandagni, Snigdha bhuktavata Vyayama* etc are responsible for *Amavata*. Derangement of *Agni*, that is *Agnimandya*, (hypo-functioning of *Agni*) is a chief factor responsible for the formation of *Ama*. *Asthis* (bones) and *Sandhis* (joints) are the most affected parts in *Amavata*. Root source of these are *Majjavaha Srotas* which are directly afflicted with *Viruddha Ahar-Vihar*. So we can say that *Viruddha Ahara* and *Viruddha Cheshta* both contribute as *Nidanas* in pathogenesis of *Amavata*. Again *Vyayama* is said to be a causative factor for the *Shakha Gati* of *Doshas*. If there is already *Ama* condition and *Vyayama* is done, the increased *Vata* will take the *Ama* to the *Shakha* then causing its *Sthanasamshraya* in the *Sandhis*, leading to *Amavata*. After studding the etiopathogenesis of *Amavata*, it is found that above factors individually or together lead to the *Kapha Prakopa* or *Vataprakopa* or both Along with this role of psychological factors also should be considered [25]. The drug *Rasonadi Kwath* which is also described in *Bhaisjya Ratnawali* 29/29 the combination of these drug is *Katu pradhan tikta rasa* and except *Amla rasa* all others *Rasa* are present in small amounts. It is *Pradhanataha Ruksha* and *Teekshna* in *Guna*, *Ushana veerya*, *Pradhanatah Katu Vipaka, Kapha-Vatahara* and *Deepana. Kwath* is *Laghu* to digest as compared to *Swarasa* and *Kalka. Rasonadi kwath* is *Karshaka* in nature. It acts against the *Snigdha, Pichila pradhana Gunas* of *Ama,* and it reduced the *Sarrvadaihika Ama lakshanas* which are nothing but *Samanya lakshana* of *Amavata*. so it has a 37.5% drug has *Katu rasa*, 25% *Tikta rasa* & 12.5% drug *Kashay rasa*. 100% drug is *Ushana veerya* and 66.6% drug is *Katu vipaka* which has also a *Vatapitta Vridhi* and *Kaphahara* properties, 33.33% is *Madhura vipak* and very importantly 100% drug is *Kaphavata shamak* due to *Ushana veerya* other properties are *Shothhara, Vedna sthapana, Deepan-pachan, Shoolaprashmana, Aamapachan* and *Shunthi* is *Uttam Aamapachak,* In this 100% drug are *Ushana veerya* so it very much *Kapha shamak* properties & also prevent the formation of free radical and Ketone bodies. Due to *Tikta rasa Rason* and *Nirgundi* has a *Shothhara* property which is also useful to reduce the inflammation in related joints, *Vata dosha* is mainly responsible for this disease but *Kapha* is also involved because it is a *Shothatmak vikriti* and *Sotha* is a *Rasapradosaj vikar* and *Mala* of the *Rasa dhatu* is *Kaph* so that *Kapha* is essentially involved.

CONCLUSION

About *Aamavata* especially described by *Aacharya Madhava* in his book *Rogvinaschaya* that's why also known as a *Moulik avdana* of *Madhava*. It is a *Krichasadhaya Vyadhi* but in modern it's a autoimmune disease as well as metabolic disorder because involvement of *Aama* & it is mainly responsible for this disease and *Aama* means a intermediated product which is form during a abnormal metabolism of food. Due to *Aama* sited in *Trika sandhi*, *Janu Sandhi, Manibandha, Kurpara sandhi,* and all small joints of the body and show some specific symptoms like Pain, redness, swelling, stiffness these are the sign & symptoms of RA. From the above study will be concluded the preparation *Rasonadi kwath* is play much effective in

R.A. because it has a very rich property like *Sothhara, Vedna-sthapana, Kapha-vatashamak, Deepan-Pachan, Anuloman, Shoola-prashman,* and also *Shunthi is Uttam Aama pachak* and The formation is potent enough to act at the level *Asthi Sandhi* which is a part of *Madhyama Roga marga*. all the above things are conceptually very helpful to treat the Rheumatoid arthritis.

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