



Received on 25 November, 2013; received in revised form, 08 January, 2014; accepted, 09 March, 2014; published 01 April, 2014

## RHEUMATOID ARTHRITIS: AN AYURVEDIC PERSPECTIVE

Pramod Kumar Mishra\* and N.P. Rai

Department of Kayachikitsa, Faculty of Ayurveda, Institute of Medical Sciences, BHU, Varanasi, Uttar Pradesh, India

### Keywords:

Ayurveda, amavata, ama, DMARD, bio-purificatory measures, *Ricinus communis*, *Allium sativum*

### Correspondence to Author:

**Pramod Kumar Mishra**

Department of Kayachikitsa, Faculty of Ayurveda, Institute of Medical Sciences, BHU, Varanasi, Uttar Pradesh, India

E-mail: shandilyapk11@gmail.com

**ABSTRACT:** Ayurveda, an ancient system of medicine explains well about joint disorders like vatarakta, sandhivata, amavata etc. Among these, amavata is a disease which is caused due to hypo-functioning of digestive fire. Rheumatoid arthritis is the disease which keeps clinical similarity with amavata. Ama is main pathogenic factor in the disease amavata. Factors causing formation of ama have direct impact on gastro-intestinal system. So, GI regulation is the mainstay of Ayurvedic therapy in amavata (RA). There are mental factors too which cause formation of ama & hence the disease. Modern system of medicine uses anti-inflammatories, DMARDs, immuno-suppressive agents. But these drugs have bad impact on the quality of life & have so many side effects. In Ayurveda, there are pharmacological and bio-purificatory measures which remove the toxins (ama) from the body without any side effect. Among pharmaco-therapy there are herbal, herbo-mineral preparations & various decoctions. Ayurveda also emphasizes on healthy life style and dietary behaviour to check the pathogenesis of the disease. There are researches which prove, that an Ayurvedic line of management is a better way to improve quality of life in an RA affected patient.

**INTRODUCTION:** Disorders of musculoskeletal (MSK) system are prevalent throughout the world, affecting all ages & ethnic groups. Musculoskeletal complaints account for >315 million outpatient visits in US. The Centre for Disease Control & Prevention estimates that 22% of the US population has diagnosed arthritis & 19 million have significant functional limitation<sup>1</sup>. These MSK disorders are broadly in two categories- inflammatory and non-inflammatory disorders.

Non-inflammatory conditions like osteoarthritis (OA), osteoporosis are far more prevalent than inflammatory one like gout, rheumatoid arthritis (RA).

With the evolution of erect or plantigrade posture in man, the two limbs despite their basic similarities have become specialized in different directions to meet the new fundamental need. The emancipated upper limb is specialized for prehension & free mobility whereas lower limb is specialized for support and locomotion. Our joints were designed in an evolutionary sense, for brachiating apes, animals that still walked on four limbs. We thus develop OA in the joints that were ill designed for human tasks such as pincer grip (OA in the thumb base) and walking upright (OA in hips & knees).

<p>QUICK RESPONSE CODE</p>	<p>DOI: 10.13040/IJPSR.0975-8232.5(4).1090-94</p>
	<p>Article can be accessed online on: www.ijpsr.com</p>
<p>DOI link: <a href="http://dx.doi.org/10.13040/IJPSR.0975-8232.5(4).1090-94">http://dx.doi.org/10.13040/IJPSR.0975-8232.5(4).1090-94</a></p>	

Osteoarthritis is the most common joint disorder. Among inflammatory joint disease RA accounts most common form of arthritis & often results in joint damage and physical disability. Because it is a systemic disease, RA may result in a variety of extra-articular manifestations including fatigue, subcutaneous nodules, lung involvement, pericarditis, peripheral neuropathies, vasculitis & hematologic manifestations.

In adult Indian population prevalence of RA is 0.75%, giving a total of about 7 million patients in India. This prevalence of RA is quite similar to that reported from the developed countries. About 1% of the world population is afflicted by RA, women 3 times more often than men<sup>2</sup>.

Ayurveda is the most ancient system of medicine practised in India. The great 3 classics & most authoritative writings of ayurveda are Charaka, Sushruta & Vagbhata samhitas. There is well explained knowledge of joint disorders like sandhivata & vatarakta. Sandhivata is a disease of joints in which there is pain & swelling in the big joint<sup>3</sup>. Sandhivata is correlated with osteoarthritis. Another joint disorder vatarakta, in which pain arises initially in great toe & then spreads to all other joints like fingers, wrists, toes etc<sup>4</sup>. This is same condition as occurs in tophaceous gout. Amavata is another class of joint disorder which is caused by ama, a toxic by-product of improper digestion. However this disease is not explained in the major classics of ayurveda.

It is Madhavakar<sup>5</sup>, a physician of 8<sup>th</sup> century, who first explained detail knowledge of the disease. However he hadn't told about its management aspect. In 11<sup>th</sup> century, Chakrapani Dutta<sup>6</sup> first gave knowledge about principle & management of the disease in his book Chakradutta.

Its very clinical correlate is rheumatoid arthritis. Symptoms of amavata are much similar to that of RA.

**DISCUSSION:** Rheumatoid arthritis in Ayurveda is described as amavata. Modern system of medicine is not sure, why this disease appears in the body all of a sudden. There are many hypotheses to describe the aetiology of this disease, but none of these is affirmative. Now it is believed that this is an auto-immune disorder.

Ayurveda has different opinion regarding pathology of the disease. Ayurveda believes that the reasons which cause loss in the potency of digestive & metabolic fire inside the body to digest and assimilate the available foods are responsible for this disease. This disturbance in digestion & assimilation of foods leads to ama formation. Hence amavata is a condition of ama and aggravated vata (air-one of the 3 body humours viz. vata, pitta & kapha).

**Formation of Ama:** The word ama, in ordinary parlance means unripe, uncooked, immature, undigested or unprocessed substance. In context of medicine, it is the consequence of impaired functioning of digestive fire. According to Vagbhata<sup>7</sup>, due to hypo-functioning of digestive fire, first dhatu (tissue) viz. the rasa is not properly formed. As a result the taken food material undergoes fermentation which is retained in stomach. This state of rasa is called ama. Vijayrakshita in the chapter on amavata stated that due to poor strength of digestive fire, a residue of taken food material is left behind undigested at the end of digestion and it is known as ama which is the root cause of all diseases. Further he adds, that some describe ama as improperly digested food while some say it is accumulation of malas (waste product)<sup>8</sup>.

**Aetiological Factors of Ama**<sup>9, 10</sup>: Unwholesome foods & life style sedentary work habit leads to impairment of digestive function and hence formation of ama. Charaka has very elaborated view regarding causative factors of ama. He says that not only food taken in excess quantity cause production of ama but heavy, cold, dry, impure diets may also cause ama. Abstinence from food, frequent fasting, irregular diet habits, indulgence in incompatible food items, wasting of tissues due to disease, unfavourable changes in place, climate, season & suppression of natural urges cause impairment of digestive fire which fails to digest even the most easily digestible light food.

This disease also has a relation with mind. According to Ayurveda mind is one of the three realms of life (mind, body & soul). It is commonly seen that RA attacks women mostly. It shows that there is some emotional reason also, whether these are responsible for causing it or for aggravation of this disease.

Charaka indicates mental factors causing ama like anger, greed, jealousy, grief, fear etc. When individual afflicted with these mental states takes even wholesome food in proper quantity, becomes unable to digest.

**Pathogenesis of Amavata**<sup>11, 12</sup>: The toxin ama is carried by imbalance air (vata) & reaches kapha (phlegm) predominant sites like joints, stomach etc. The toxin being sticky in nature blocks micro-channels (srotasa) which nourish the body. When this ama accumulates in the joints, it produces the disease amavata. Simultaneously it spreads all over the body. The channels (like arteries, intercellular spaces, pores in the cells) which allow nutrients to flow through and nourish the body tissues, get partially blocked this leads to decreased supply of nutrients to body tissues and cells. As a result immunity of the body gets lowered, appetite reduces & body becomes weak.

The ama which gets harboured in the joints acts like a foreign substance & triggers the immune system. This leads to inflammation of linings of joints.

**Symptomatology of Amavata**<sup>13</sup>: Symptoms produced in this disease are local as well as systemic. Among local symptoms pain, swelling, and stiffness in joints are main. Pain is intense & like a scorpion sting. Joints involved are hand, foot, cervical/neck, sacrum, knee, hip & ankle joint. Systemic symptoms are body ache, loss of taste, malaise, thirst, lack of enthusiasm, heaviness in precordial region, constipation, fever, indigestion etc.

**Treatment:** Ayurveda has holistic approach. Its main objectives are maintaining health of an individual & alleviating the ailment of diseased<sup>14</sup>. Disease is faulty interaction of individual with environment. As per Ayurveda all defects in the body are result of body's own malfunctioning. On the contrary, modern medicines are mostly busy to neutralize the effect of external factors.

Ayurveda believes to manage the body to perfection so that no external factor can harm the body. While allopathic treatment of RA is improving, remission remains rare but treatment is still unsatisfactory. Thereof a search for effective alternative and additional therapy for this disease continues.

In the management of amavata (RA) the foremost work is to stop the production of ama in the body by potentiating the body fire. This will reduce the toxins, which are causing inflammation in the body. Once metabolism is under control, next step is to remove the deposited wastes from the body i.e. purification of body system. Line of treatment for the management of amavata is:

- Langhana (lightness therapy)
- Sodhana therapy (bio-purificatory measures)
- Shamana therapy (treatment for subsiding the symptoms)

These above 3 lines comprise 6 main procedures, which are<sup>15</sup>:

1. **Langhana:** This is the process which brings lightness in the body. It includes abstinence from food or taking food which are light & easily digestible, like giving green gram/rice/barley soups. This process removes heaviness from the body.
2. **Swedana** (fomentation): It is very useful mode of treatment in amavata especially in the form of dry fomentation (ruksha sweda). Dry fomentation is done using sand or rock salt packets. Dry fomentation relieves pain also. Upanaha (poultice) of non-unctuous substance are also effective.
3. **Deepana:** Deepana causes potentiation of digestive fire. For this bitter & pungent drugs or herbs are used like chitraka (*Plumbago zeylanica*), pippali (*Piper longum*), shunthi (*Zingiber officinale*), maricha (*Piper nigrum*) etc.
4. **Virechana** (purgation): Purgation therapy removes toxins from the gastro-intestinal tract. Castor oil is used specially for purgation.
5. **Snehapana** (ingestion of liquid unctuous substances): Various oils specially prepared with rasna (*Pluchea lanceolata*), dashmula (root bark of 10 plants), nirgundi (*Vitex nigundo*) are used for this purpose. Specially castor oil is considered as the best oil to be used in the treatment of RA.<sup>16</sup>

6. **Basti** (medicated enema): Various medicated enema like vaitarana basti, dashmula kwatha basti, kshara basti, eranda mula, yapana basti etc. are administered per rectum & proved to be very effective in the treatment of RA<sup>17</sup>.

Shamana therapy<sup>18</sup> is done by using very effective & time tested preparations like decoctions like dashmula, rasna-saptaka (decoction of 7 drugs viz. rasna, guduchi, amaltasa, devdaru, gokshura, eranda, punarnava) powders like panchakola, vaishvanara churna, ajmodadi churna etc. herbo-mineral preparations like yogaraj guggulu, sinhanada guggulu, amavatari rasa. Garlic & castor are effectively used in the treatment of amavata (RA).

**Attributes of castor oil & garlic:** Castor (*Ricinus communis*) oil is a very effective natural anti-inflammatory agent. High vitamin E content contributes significantly to the anti-inflammatory properties of castor oil. The natural vitamin E present in castor oil has a number of tocopherol specific moisturizing, anti-inflammatory & anti-oxidant property. Also vitamin E contributes to improved microcirculation and UV protection. Castor beans have a total tocopherol 291 $\mu$ g/g<sup>19</sup>. Vitamin E found in castor oil has anti-inflammatory effect.  $\gamma$ -tocopherol &  $\gamma$ -CEHC {2,7,8-trimethyl-2- ( $\beta$ - carboxy ethyl) -6- hydroxyl chroman}, inhibit cyclooxygenase activity & thus possess anti-inflammatory properties.<sup>20</sup>

In a study conducted in 2009, it is found that castor oil effectively relieves arthritic symptoms.<sup>21</sup> Also in 2000, it was proved that topical application of ricinoleic acid, the main component of castor oil, exerts remarkable analgesic and anti-inflammatory effects<sup>22</sup>. Pharmacological characterisation has shown similarities between the effects of ricinoleic acid & those of capsaicin (a potent analgesic), suggesting a potential interaction of this drug on sensory neuropeptide mediated neurogenic inflammation<sup>23</sup>.

Garlic (*Lashuna- Allium sativum*) is a food rich in sulphur, plays an essential role in collagen production. Collagen is needed to form cartilage tissue, which cushion joints. It is an anti-oxidant, immune-modulatory & antimicrobial. An open controlled trial of 30 patients with RA taking alisate (a garlic preparation used in Russia) 300 mg

twice daily for 4-6 weeks, compared with a control group who received conventional anti-rheumatic therapy, found that the alisate group achieved a good & partial response in 86.5% of cases. The drug was well tolerated and had no side effects<sup>24</sup>.

In Ayurveda, use of garlic is in different ways- Remove the sprouts of garlic by splitting & soak it in buttermilk overnight. The next morning, wash the garlic with plain water & grind to a thin paste. Consume half a teaspoon of this paste with warm water every morning on empty stomach. Likewise, there are other dosage forms of garlic also described in Ayurveda.

**Preventive measures**<sup>25</sup>: Apart from this pharmaco-therapy there are some regimens & diets to be followed:

1. Avoid curds, fishes, milk, black gram, jaggery, Malabar spinach/vine spinach (poi leaf) & other constipating foods
2. Consume horse gram, ginger, bitter gourd, drum stick.
3. Always use hot water to bath & to drink.
4. Avoid cold breeze.
5. Don't consume unwholesome foods.
6. Empty bowel regularly.
7. Don't control natural urges.
8. Avoid late night & afternoon naps.
9. Add some trikatu (a mixture of pippali, maricha & shunthi) in salads & drinks.
10. Drink shunthi (dried & processed ginger) with hot water in morning.

Since there is also implication of mental factors, there should some yogic practices like pranayam also be performed to relieve mental stress.

**CONCLUSION:** Rheumatoid arthritis is an auto-immune disease that causes chronic inflammation of joints. In RA there may also be inflammation of the tissue around joints as well as other organs in the body. RA in Ayurveda is correlated with amavata.

Amavata is a disorder of ama which originates due to improper GIT function. However modern system of medicine does not explains its GI affection.

Treatment of RA provokes use of anti-inflammatory to check the inflammatory process primarily. NSAIDs as painkillers are a well-known necessary evil of this era. Up to how much extent it should be used it can't be predicted. However pain is a challenge to Ayurveda in this disease. Further use of other drugs like DMARDs, immune-suppressive agents deteriorates the quality of life.

On the contrary, Ayurvedic system of medicine practices a good care of disease & diseased as well. There is little or say no side effects of herbal & herbo-mineral preparations if used judiciously. An US study shows efficacy of Ayurvedic medicines in rheumatoid arthritis cure. Personalised Ayurvedic interventions have demonstrated clinically significant improvement in rheumatoid arthritis on a par with allopathic treatment with added advantage of lesser side-effect, according to a study<sup>26</sup>.

Again a study sponsored by WHO depicts that classical Ayurvedic treatment was effective in the first cohort of patients who completed the treatment. Even patients with functional limitations showed significant improvement.<sup>27</sup>

The central argument of this review is that, for the management of RA an Ayurvedic line of treatment must be followed to improve quality & longevity of the diseased as well as to treat the ailment.

## REFERENCES

- John J. Cush, Peter E. Lipsky: Harrison's Principles of Internal Medicine, Mc Graw Hill, New Delhi, 18<sup>th</sup> edition, Vol.2, 2012:2818.
- Malviya AN, Kapoor SK, Singh RR, Kumar A, Pande I: Prevalence of Rheumatoid Arthritis in the Adult Indian Population. *Rheumatology International* 1993; 13 (4):131-4.
- Agnivesha: Charaka Samhita (Chikitsasthana). Choukhambha Bharati Academy, Varanasi, Edited by Rajeshwar Dutt Shastri et al, 2010: 783.
- Sushruta: Sushruta Samhita. Choukhambha Sanskrit Sansthana, Varanasi, Edited by Shastri Ambika Dutta, Vol.1, 2009:232.
- Sharma PV: Ayurveda ka Vaigyanik Itihas (Scientific History of Ayurveda). Choukhambha Orientalia, Varanasi, 2009: 262.
- Sharma PV: Ayurveda ka Vaigyanik Itihas (Scientific History of Ayurveda). Choukhambha Orientalia, Varanasi, 2009: 229.
- Vagbhata: Astanga Hridaya. Choukhambha Orientalia, Varanasi, Edited by Gaur B.L, 2009: 237.
- Vijayrakshita: Madhava Nidana. Choukhambha Sanskrit Sansthana, Varanasi, Edited by Upadhyaya Yadunandana, Vol.1, 2010:509.
- Agnivesha: Charaka Samhita (vimanasthana). Choukhambha Orientalia, Varanasi, Edited by Sharma PV, 2009:311.
- Agnivesha: Charaka Samhita (chikitsasthana). Choukhambha Orientalia, Varanasi, Edited by Sharma PV, 2009: 252.
- Madhavakara: Madhava Nidana. Choukhambha Sanskrit Sansthana, Varanasi, Edited by Yadunadan Upadhyaya, Vol.1, 2010: 508-509.
- Singh R.H: Kayachikitsa. Choukhambha Sanskrit Pratisthana, New Delhi, Vol. II, 2009:536.
- Madhavakara: Madhava Nidana. Choukhambha Sanskrit Sansthana, Varanasi, Edited by Yadunadan Upadhyaya, Vol.1, 2010: 509-511
- Agnivesha: Charaka Samhita (Sutrasthana). Choukhambha Bharati Academy, Varanasi, Edited by Rajeshwar Dutt Shastri et al, 2010: 587.
- Chakrapani Dutta: Chakradutta. Choukhambha Sanskrit Sansthana, Varanasi, Edited by Tripathi ID, 2009:166.
- Govind Das Sen: Bhaishajyaratnavali. Choukhambha Krishna Das Academy, Varanasi, Commentary by Shastri Ashwani Kumar, 2008: 481.
- Chakrapani Dutta: Chakradutta. Choukhambha Sanskrit Sansthana, Varanasi, Edited by Tripathi ID, 2009: 455.
- Chakrapani Dutta: Chakradutta. Choukhambha Sanskrit Sansthana, Varanasi, Edited by Tripathi ID, 2009:166-170.
- David C. Herting, Emma-Jane E. Drury: Vitamin E content of Vegetable Oils & Fats. *The Journal of Nutrition* 2013; 81(4): 335-342.
- Qing Jiang, Stephan Christan, Mark K Shigenagi & Bruce N Ames:  $\gamma$ -tocopherol, the major form of vitamin E in the US diet. *Am J Clin Nutr* 2013; 74 (6): 714-722.
- Y. Murakami, A. Kawata, T. Koh, Y. Seki, S. Tamura, T. Katayama & S. Fujisawa: Inhibitory Effects of Tocopherols on Expression of the Cyclooxygenase-2 Gene in RAW 264.7 Cells, Stimulated by Lipopolysaccharide, Tumor Necrosis Factor -  $\alpha$  or *Porphyromonas gingivalis* Fimbriae. *In Vivo* 2013; 27 (4): 451-458.
- B. Medhi, K. Kishore, U. Singh, S.D. Seth. Comparative clinical trial of castor oil & diclofenac sodium in patients with osteoarthritis. *Phytother Res* 2009 Oct; 23 (10): 1469-73.
- C. Viera, S. Evangelista, R. Cirillo, A. Lippi, C. Alberto Maggi, S. Manzini: Effect of rinoleic acid in acute & subchronic experimental models of inflammation. *Mediators of Inflammation* 2000; 9: 223-228.
- Denisor LN, Andrianova IV, Timofeeva SS: Garlic Effectiveness in Rheumatoid Arthritis. *Ter Arkh [Pubmed]* 1999; 71 (8):55-8.
- Yogaratanakara. Choukhambha Krishna Das Academy, Varanasi, Edited by Tripathi ID & Tripathi DS, 2011:453.
- Furst, Daniel E, Venkatraman, Manorama M, et al: Double Blind, Randomized, Controlled, Pilot Study Comparing Classic Ayurvedic medicine, Methotrexate & their Combination in Rheumatoid Arthritis. *Journal of Clinical Rheumatology* 2011 June; 17 (4): 185-192.
- Kumar PR Krishna: The Efficacy of Ayurvedic Treatment for Rheumatoid arthritis; Cross-sectional Experiential Profile of a Longitudinal Study. *International Journal of Ayurveda Research*, 2011 Jan-Mar; 2(1): 8-13.

### How to cite this article:

Mishra PK and Rai NP: Rheumatoid Arthritis: An Ayurvedic Perspective. *Int J Pharm Sci Res* 2014; 5(4): 1090-94. doi: 10.13040/IJPSR.0975-8232.5(4).1090-94