

RESEARCH ARTICLE

An ethnomedicinal approach for the treatment of arthritis

■ Nikhil Agnihotri, Arun Kumar Pandey and Ajay K. Gupta

SUMMARY

Arthritis is generally considered as an old age problem but now-a-days it is converted as a gristly health problem, which is widely spread in youths as well as teens. This is a chronic, progressive, disabling autoimmune disease that is commonly responsible for damaging cartilage and bone around the joints. Unfortunately, there is still no effective known medicinal treatment that cures rheumatoid arthritis. Therefore, present research is designed to find some effective alternative treatment of arthritis by some ethno medicinal formulations. The effectiveness of these herbal formulations has been well studied for treatment of arthritis. 90 per cent of the patients of arthritis are cured by these formulations. It is observed that decoction of ashwagandha [*Withonia somnifera* (L.) Dunal] leaves with methi (*Trigonella foenumgracum* L.) seeds powder taken 2 to 3 times per day regularly is very effective for the control of arthritic pain. Juice of fresh leaves of moko (*Solanum nigrum* L.) is very effective to cure rheumatic problems. Dried powder or fresh paste of ginger (*Zingiber officinalis*) is also effective drug for the treatment of arthritis. Root paste of ashwagandha [*Withonia somnifera* (L.) Dunal] with milk is used in rheumatism, painful swelling and old age problems. Pyaz (*Alium cepa* L.), Lehsun (*Allium sativum* L.) Amaltas (*Cassia fistula* L.) are also effective to treat arthritis. This study encourages the utility of traditional formulations for treating arthritis.

Key Words : Arthritis, Autoimmune disease, Ethnomedicine, Traditional formulations

How to cite this article : Agnihotri, Nikhil, Pandey, Arun Kumar and Gupta, Ajay K. (2018). An ethnomedicinal approach for the treatment of arthritis. *Internat. J. Plant Sci.*, 13 (2): 240-244, DOI: 10.15740/HAS/IJPS/13.2/240-244, Copyright@ 2018: Hind Agri-Horticultural Society.

Article chronicle : Received : 25.12.2017; Revised : 12.06.2018; Accepted : 23.06.2018

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Arthritis is an autoimmune disease which means the body's immune system mistakenly attacks on healthy tissues, which is one of the most prevalent diseases of present times (Kaur *et al.*, 2012). It is a cosmopolitan health problem which affects bones and joints of human body. Human beings are suffering from arthritis since ancient times (Agnihotri *et al.*, 2010). The first description of this disease is found in ancient *Sanskrit* literature (Dash, 1983). Ancient Indians identified different types of arthritis in *Vedic* period

(Charak, 2000; Sushruta, 2000). It is general old age problem but now a days it is converted as a gristly health problem and even the youth, teens and children are suffering form arthritis. It is the only health problem that is equally distributed in developed as well as developing countries. There are more than 100 types of arthritis reported in different systems of medicines. In *Ayurveda* about 120 types and sub-types of arthritis are described in ancient literature such as *Charak samhita*, *Sushruta samhita*, *Sharangdhar samhita*, *Bela samhita*, *Bhav prakash* etc. According to *Ayurveda*, Arthritis is a type of *Vata dosha*, which is made of two *Maha bhutas* (elements), which are space (*akash*) and air (*vata*). *Vata dosha* governs all physiological movements of body from the subtle feelings, movement of a thought flitting across our mind to the course of blood through our arteries and veins. Out of these osteoarthritis (*Ashhtigata vata*), rheumatoid arthritis (*Aam vata*), lupus (*Granthil vata*), gout (*Vata rakta*), infectious arthritis (*Sankramak vata*), rheumatic fever (*Aam vata jwara*) are major kinds of arthritis (Charak, 2000; Sushruta, 2000 and Sharma, 2006).

Osteoarthritis, which is known as *Asthigata vata* in *Ayurveda*, *Siddha* and other local, regional and ethnic systems of medicines in India, also known as degenerative arthritis, is the most common type of arthritis. It affects both large and the small joints of body. Osteoarthritis begins in the cartilage and eventually leads to the two opposite bones. Articular cartilage and subchondral bone eroding into each other, osteoarthritis occurs mainly in hands, feet, back, hip or knee. Joint pain, tenderness, stiffness, locking and sometimes an effusion are major symptoms of osteoarthritis. A number of causes of the disease are reported such as obesity, metabolic and mechanical body disorder as well as hereditary. It is typically affected on weight bearing joints like pelvic, back, spine etc. According to *Ayurveda*, Osteoarthritis or *Asthigata vata* is caused due to imbalance of the air between bones. According to *Ayurveda*, *Asthi* means the bones and *Vata* means arthritis condition in which *Vata dosha* is involved.

Arthritis is a disorder for some unknown reasons and affects many other body parts. It is also reported in children with skin rash, fever, pain, disability in limitations in daily activities. Rheumatoid arthritis affected the joints, fingers, wrists, knees and elbows. The disease, if not treated within few years, can lead to severe deformity. Rheumatoid or rheumatic arthritis is known as *Aam vata* in *Ayurveda*. According to *Ayurveda*, *Aam vata* is caused

due to a low digestive fire (*Mandagni*), due to which, *Aama* is retained in the body. When *vata dosha* combines with *Aama* (indigestive material or toxins), it gets seated in the different body joints and produces a pain called *Aam vata*. So, we can say that *Aam vata* is nothing but rheumatoid arthritis.

Gout is a type of Arthritis caused by deposition of uric acid crystals in the joints and causing inflammation. Gout is also known as metabolic arthritis. It is characterized by painful swelling of joints and tenderness and redness in the effected body organs. The pain of gout is felt in periodic episodes known as 'attack'. Gout pain usually occurs in the joints of legs, toes, heels, joints of fingers, wrists, elbow etc. In *Ayurveda*, gout is described as *Vata rakta*. *Vata rakta* is the condition, in which the blood and the *Vata dosha* both get vitiated and create troubles. The early stage of gout occurs in the small joints of the body. Man over 30 years of age and mostly in the range of 40-50 years, are more susceptible to gout. There is another type of gout, which is known as pseudogout caused by formation of rhomboid crystals of calcium pyrophosphate. In *Ayurveda*, gout and pseudogout is categorized as *Vata rakta*.

In rheumatic fever, fever accompanies with swelling and pain in joints especially in small joints. According to *Ayurveda*, rheumatic fever is considered as *Aam vata*. It is a dreadful disease, which makes patients completely bed ridden if not properly treated. It moves quickly to the different seat of *Kapha* in the body and filling them and the *Dhamanis* (arteries) with waste materials. The bad end products of digestion associated with *Vata*, *Pitta* and *Kapha* assuming colors, blocks of tissue parts and the passage with thick waxy materials (Murthy, 1982).

Infectious arthritis or septic arthritis which is known as *Sankramak Sandhivata* in *Ayurveda*, caused by parasitic infection in any manner. It is caused by infection of bacteria, virus, fungi, mosquitoes etc. The infection spreads from infected parts of the body through blood stream. Lupus is also a common collagen vascular disorder, which creates node like structures. These nodes appear in body at the severe conditions of arthritis. Juvenile arthritis (*Kishor sandhi vata*) is also a type of arthritis in adolescence and children. Although this type of arthritis is rare, it damages tissues and joints (Charak, 2000).

Present study is based on treatment of arthritis by indigenous herbal ethnomedicinal formulations, which are popular in the society as household, ethnic or folk

remedies. Out of these, a number of formulations are also popular in *Ayurveda* and commonly used by *Ayurvedic* practitioners.

MATERIAL AND METHODS

A clinical experiment was conducted on 82 patients suffering from different types of arthritis. All patients were divided into 3 groups. Group 1 included early symptomatic stage, Group 2 included late symptomatic stage and Group 3 included chronic stage. Out of 82 patients 55 were male and 27 were female. Age of patients varied from 14 to 79. Out of these, 44 patients were suffering from rheumatoid arthritis, 19 were suffering from osteoarthritis, 13 from gout, 3 from pseudogout, 3 from rheumatoid fever and 1 suffered from juvenile arthritis. Out of 82 patients, 24 are overweight, 13 were diabetic and 9 were suffering from high blood pressure. The present study was conducted at Nirmal Clinic Kacchhari Road Fatehgarh Farrukhabad, Uttar Pradesh.

Present investigation deals with treatment of different kinds of arthritis by some ethnomedicinal herbal formulations. A number of formulations are popular in our country in different localities and communities to cure arthritis (Jain, 1981 and 1991; Singh *et al.*, 1997; Maheshwari, 2000 and Agnihotri and Sharma, 2009). In our Indian systems of traditional medicines, drugs are used as internal and external remedies for arthritis. Internal means remedy, which is orally prescribed while external remedies are used as *lep*, poultice or massage (*snehan*) (Sharma *et al.*, 2005; Kamboj, 2005; Sharma *et al.*, 2008 and Kateva *et al.*, 2004). Both types of ethnomedicinal formulations are arranged in Table 1 and 2. Table 1 deals with the components of formulations with their local (Hindi) names, botanical names (family) and methods of utilization. Table 2 deals with external utility of plant products to cure arthritis. All the groups were treated by the formulations described in Table 1 and 2. The doses of applied drugs determined on the basis of physical strength, digestive capacity, age, mental

Table 1: Ethnomedicinal formulation for treatment of arthritis (Internal uses)

Formulations	Ingredients	Methods of utilization	Types of arthritis
Formulation 1	Ashwagandha [<i>Withania somnifera</i> (L.)] Dunal. Sendha Namak Methi powder (<i>Trigonella foenumgracum</i> L.)	One cup warm decoction of leaves mixed with sendha namak taken twice a day after meal. Powder of Methi dana taken twice a day	Effective for the treatment of Rheumatoid Arthritis, Gout, Pseudogout and Sciatica
Formulation 2	Makoe (<i>Solanum nigrum</i> L.)	15 g, Leaf juice taken thrice a day	All types of Arthritis
Formulation 3	Adrak (<i>Zingibar officinalis</i> L.) Lahsun (<i>Allium sativum</i> L.)	Dried powder of Rhizome mixed with 3-4 cloves of garlic taken twice a day	Rheumatic Arthritis, Gout as well as Infectious Arthritis
Formulation 4	Ashwagandha [<i>Withania somnifera</i> (L.)] Dunal. Satavar (<i>Asparagus racemosus</i> Willd.)	Root paste of both plants mixed in equal amounts is taken twice or thrice a day with milk and honey	All types of Arthritis and painful swellings
Formulation 5	Alona (<i>Embllica officinalis</i> Garten.) Ashwagandha [<i>Withania somnifera</i> (L.)] Dunal. Satavar (<i>Asparagus racemosus</i> Willd.) Jai (<i>Avena sativa</i> L.)	Root powder of Alona, Ashwagandha, Satavar and Jai mixed in equal amounts and taken with milk twice a day	All types of Arthritis
Formulation 6	Nirgundi (<i>Vitex nergundo</i> L.)	Root paste or powder taken twice or thrice a day	All types of Chronic Rheumatism, Gout, Lupus, as well as Ortho-arthritis
Formulation 7	Gokhru (<i>Tribulus terrestris</i> L.)	Dried fruit powder is prescribed twice or thrice a day	All types of joint pains
Formulation 8	Harjor (<i>Cissus quadrangularis</i> L.)	Fresh stem juice is prescribed twice or thrice daily	Fracture, Osteoporosis, Ortho-arthritis
Formulation 9	Amaltas (<i>Cassia fistula</i> L.)	Decoction of leaves	Rheumatism, Rheumatoid fever

Table 2 : Ethnomedicinal formulations for treatment of arthritis (External uses)

Formulation	Ingredients	Methods of utilization	Types of arthritis
Formulation 1	Kuppi (<i>Acalypha indica</i> L.)	Leaf juice is mixed with oil and applied after boiling	Rheumatic Arthritis and painful swelling
Formulation 2	Pyaz (<i>Allium cepa</i> L.)	Roasted bulbs of pyaz mixed with brassica oil in equal amounts used as poultice.	Rheumatic pain.
Formulation 3	Rai (<i>Brassica Juncia</i> L.)	Poultice of seeds	Gout, Sciatica and Pseudogout
Formulation 4	Dhatura (<i>Dhatura metal</i> L.)	Poultice of leaves	Rheumatic swelling of joints, painful tumours, nodes, glandular inflammation such as lupus
Formulation 5	Lahsun (<i>Allium sativum</i> L.)	Poultice of bulbs	All types of Arthritis
Formulation 6	Lahsun (<i>Allium sativum</i> L.) Til (<i>Sesamum indicum</i> L.)	Cloves of garlic fried in sesamum oil	Applied in all types of Arthritis
Formulation 7	Arjuna (<i>Terminalia arjuna</i> Roxb.) Lahsun (<i>Allium sativum</i> L.)	Bark of Arjuna grinded with cloves of Lahsun in equal amounts	Fracture
Formulation 8	Harjor (<i>Cissus quadrangularis</i> L.)	Powdered root or stem paste	Fracture
Formulation 9	Arand (<i>Ricinus communis</i> L.)	Seed oil	Massage in painful joints
Formulation 10	Giloe (<i>Tinospora cardifolia</i> Willd.)	Leaves used for wrapping	Fracture and painful joints

status and stage of disease. Only those patients were considered who remained under treatment for at least two months.

RESULTS AND DISCUSSION

A number of formulations of traditional household, ethnic remedies are popular in different communities and localities, out of these, 8 herbal ethnomedicinal formulations of internal use (Table 1) and 10 formulations of external use (Table 2) were selected for clinical treatment of arthritis. All these formulations have been enumerated along with the ingredients, methods of preparation and mode of administration. All these formulations belong to 22 plant species. Ashwagandha [*Withania demnifera* (L.) Dunal] is dominant ingredient applied in 3 formulations while *Satavar* (*Asperagus racemous* Willd.) applied in two formulations (Table 1). Lahsun (*Allium sativum* L.) is dominant ingredient of externally used formulations (Table 2).

Formulation 1 of Table 1, which is a combination of decoction of Ashwagandha leaves and *Methi dana* powder, is the most effective for the treatment of rheumatoid arthritis, gout, pseudogout and juvenile arthritis. 21 patients used it and 15 were fully cured and 6 were partially cured while the formulation 8 is very effective for the treatment of osteoarthritis, osteoporosis and bone crack or fracture. The record of successful treatment is more than 70 per cent with the formulation

no. 1, 3, 4, 6 and 8 of Table 1, while formulation number 2, 4, 5, 9 showed more than 50 per cent successful treatment. It is also important to know that those patients who were utilized any eternal formulation (Table 2) are rapidly cured. Formulation number 5 of Table 2, which is preparation of fried *Lahsun* (*Allium sativum* L.) in sesamum oil is very effective in all types of arthritis, while the formulation number 7, which is the combination of Arjuna (*Terminalia arjuna* Roxb.) and *Lahsun* is very effective to cure bone crack and fracture. Some patients who changed their physical activities and lifestyle got better results than others.

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