

STUDY OF SOME HERBAL FORMULATIONS AVAILABLE FOR RHEUMATOID ARTHRITIS TREATMENT IN INDIAN MARKET

ABSTRACT

Rheumatoid arthritis is an immune mediated inflammatory disease (IMID) of the joints, characterized by destruction of bones and joints. Genetic, hormonal, environmental and nutritional, and socio-economic, age and sex, ethnicity, smoking, infections are some risk factors of rheumatoid arthritis. The treatments which are available including steroidal and non-steroidal allopathic therapies cannot cure or prevent the disease and having severe side effects. These treatments can only provide temporary relief by suppressing and reducing the pain in the joints. Traditional medicines are prevalent in the treatment of rheumatoid arthritis due to severe side effect of allopathic medicines in many countries. Many native medicinal plant of India have effective properties on rheumatoid arthritis. In this review, marketed herbal products available in Indian market are studied. In this study, a search was done to compile marketed herbal formulation and we compiled ten herbal products which are sold in Indian market by companies like Himalaya, Dabur, Patanjali, Charak etc for the treatment of rheumatoid arthritis.

Keyword: Marketed herbal product, Rheumatoid arthritis, Herbal formulations, Indian market

INTRODUCTION

Rheumatoid arthritis is an autoimmune inflammatory disease affecting around 1-3% of the world population. In India, more than 20% of population suffers from any type of arthritis [1]. The word Arthritis means inflammation of the joint ("artho" means the joint and "itis" meaning inflammation of the joint) [2-4]. RA occurs when our immune system attacks the tissues near joints, this is due to release of certain chemical and enzymes that begin to eat away the cartilage and bones. It is a multifunctional immune disorder with a known cause. Some factors which may influence RA are a genetic factor, age, hormones, environmental factors, smoking etc. The exact pathophysiology of RA is still unknown but release of certain free radicals such as nitrous oxide and superoxide radicals generated as by-products of cellular metabolism [5-6]. The release of such free radicals may induce the production of interleukins (IL) and tumor necrosis factor (TNF- α) from T-cells, which ultimately influence the production of growth factors, cytokines and adhesive molecules on immune cells as such factors may cause tissue destruction and inflammation. Pathological changes in RA are hyperplasia of synovial membrane, infiltration of inflammatory cells and neovascularization, which results into cartilage erosion and articular destruction [7].

Symptoms

Symptoms of RA include joint pain, swelling, stiffness in joints, sleeplessness, fatigue, loss of weight and having flu kind of symptoms. Abnormal antibodies IgG have been found in the blood of a person suffering from rheumatoid arthritis [8]. They react to antigens leading to the formation of antigen-antibody complex that leads to inflammation and pain of the synovial membrane. Inflammation in the joints causing pain, swelling, damage to the joints and also leads to deformity. It can occasionally affect other internal organs, such as the eyes, lungs or heart and nerves. The symptoms vary widely from person to person. In many cases RA starts infecting few joints and then spreads to other joints in the body over a few weeks or months. However, RA can also progress extremely and rapidly, the non-specific symptoms of RA, include tiredness, soreness in and around the joints, fever, weight loss/poor appetite. As time goes on, RA can spread to more and more joints on both sides of the body, often in a "symmetrical" manner.

Treatment

Treatment of rheumatoid arthritis patients is to eliminate symptoms, slow disease progression, and optimize quality of life. Certain goals must be considered before starting the treatment of rheumatoid arthritis such as relief of analgesia, reduction of inflammation, protection of articular structure, maintenance of function, and control of systemic involvement [10-11]. Currently, strategies have changed from traditionally used non-steroidal anti-inflammatory drugs (NSAIDs) [12] or disease modifying antirheumatic drugs (DMARDs) to novel biological agents, like TNF monoclonal antibody to treat rheumatoid arthritis. Clinically, the treatment of rheumatoid arthritis includes five strategies. The primary approach is the use of NSAIDs followed by mild doses of glucocorticoids to minimize the signs of inflammation as well as progression of disease. In chronic patients, the use of DMARDs such as methotrexate, sulfasalazine, gold salts or D-penicillamine can be included in the treatment. In certain cases, TNF- α neutralizing agents like infliximab, etanercept, IL-1 neutralizing agents like anakinra and the drugs, which interfere with T-cell activation such as abatacept can also be included in treatment of chronic cases. Finally, immunosuppressive and cytotoxic drugs such as cyclosporine, azathioprine, and

cyclophosphamide are used for the treatment of chronic patients. The above mentioned drugs reduce the inflammation and joint destruction but their long-term risks are still unknown. Shortness of breath, nausea, infections and allergic reactions **has** also been noticed as the short-term side effects. However, long-term risks of drugs **include** gastrointestinal ulcers, cardiovascular complications, hematologic toxicity, nephrotoxicity, pulmonary toxicity, myelosuppression, hepatic fibrosis, stomatitis, cirrhosis, diarrhea, immune reactions, and local injection-site reactions [13-15].

Herbal therapy for the treatment of arthritis

Ayurveda is one of the forms of alternative treatment of medicine. Herbal medicines are used for the treatment of various diseases from long times and it is not an exaggeration to say that the use of the herbal medicines is as old as mankind [16-18]. Herbal drugs are synthesized from the therapeutic experience of generation of practicing physicians of ancient system of medicine for more than hundreds of years [19]. Nowadays, researchers are much interested in medicinal agents that are derived from plants because allopathic drugs are having severe side effects [20-22]. Nature has blessed us with enormous wealth of herbal plants, which are widely distributed all over the world as a source of therapeutic agents for the prevention and cure of various diseases. According to WHO, around 80 % population of world uses herbal medicines for their primary health care. Herbal medicines will act as parcels of human society to combat disease from the dawn of civilization. The medicinally important parts of these herbal plants are chemical constituents that produce a desired physiological action on the body. India is having a long history of use of herbal medicines in the officially alternative systems of health such as Ayurveda, Unani, Sidha, Homeopathy, and Naturopathy. More than 2500 plants species are currently used as herbal medicaments in India [23-24]. These herbal medicines are used either directly as folk medication or indirectly in the preparation of recent pharmaceuticals from last 3000 years. Thus, from the knowledge of traditional plants, one might be able to discover new effective and cheaper drugs. In this review article we have tried to compile some potent **Ayurvedic** plants which have shown potency for the treatment of RA without any possible side effects [25]. The future treatment of RA should provide more effective relief. Medicinal herbs have been traditionally a resource for the treatment of many diseases. Treatment of inflammatory diseases, such as rheumatoid arthritis is practiced based on traditional medicine in many countries. Rheumatoid arthritis risk factors include genetic, hormonal, environmental, **nutritional**, **socio-economic** factors, age and sex, ethnicity, smoking **and infections** [26]. The present work is collection of some herbal formulations available in Indian market having potential in treatment of Rheumatoid Arthritis. These products are being used in the form of single herbs or combination of herbal drugs or poly herbal formulations.

METHODOLOGY

In this review study, a search was done for various marketed **herbal products, which** are used by Ayurvedic practitioners for the treatment of rheumatoid arthritis in patients. Compositions of these herbal products were studied. The data gathered from the information given by companies on their product's detail leaflet and websites. It was found that around 10 herbal products are commonly used by Ayurvedic practitioners for treatment of Rheumatoid Arthritis.

RESULTS

Baidyanath Rheumartho Gold Plus is a polyherbal herbal formulation available in Indian Market. Company

claims that product has been developed using a formula containing Gold. It is indicated towards curing Arthritis and Rheumatism Osteoarthritis. Baidyanath Rumartho Gold Plus capsule is formulated to relieve the chronic joint pains of hands, feet, hips and knees. Gold in rheumartho gold plus capsule often arrests the progression of the disease involving joints, temporarily preventing the involvement of unaffected joints, improves grip strength, and decreases the erythrocyte sedimentation rate and abnormal plasma glycoprotein and fibrinogen levels. This formulation contains banga bhasma, loha bhasma, rasna, swarna makshik bhasma, mandoor bhasma, aabhrak bhasma, swarna bhasma, yograj guggulu, ashwagandha maharasnadi kwath surinjan, shuddha kuchala and maharasnadi kadha. Its natural composition of ingredients acts as a powerful anti-oxidant and stimulates the white blood cells in the immune system. It works at the root cause of pain inside the body and relieves the pain effectively. As per company website information, No side effects of Baidyanath rheumartho gold plus have been reported in the medical literature [27].

Himalaya Rumalaya Forte tablet is marketed by Himalaya wellness company. This tablet is based on the Ayurvedic recipe of the blend of Boswellia and Indian Bdellium. Boswellia is an excellent anti-inflammatory ingredient that is helpful in symptoms like rheumatoid arthritis and osteoarthritis. Boswellia in it is helpful in reducing the degradation of the glycosaminoglycans due to NSAIDs effect and protects the joints. Indian Bdellium has antioxidant benefits to reduce degenerative bones and joints caused by oxidative damage. Indian Bdellium's anti-inflammatory and antioxidant properties help to block nitric oxide formation and inhibit oxidative damage to joints and bones. It is helpful in various joint and bone issues so it reduces degradation of arthritic problem. It is effective in indications like gout, arthralgia, osteoarthritis, cervical and lumbar spondylosis, and frozen shoulder & sprains [28].

Dabur's Rheumatil Tablet is marketed by Dabur India Limited. It is one of the top Ayurvedic medicines for joint pain with anti-inflammatory, anti-arthritic, immuno-modulatory and anti-oxidant properties formulated using various medicinal plants as recommended by Ayurvedic in India. Its key ingredients include Gandhapura oil, Guggulu, Pudina, Neelgiri oil, Lavang oil, Ashwagandha, *Abrus precatorius* and *Boswellia serrata*. It helps in providing relief from joint pain, cervical & lumbar spondylosis, and gout etc. It has analgesic, anti-rheumatic, antioxidant and anti-inflammatory properties. It Improves flexibility and has muscle and nerve nourishing properties. It relieves muscle spasms and nervous debility [29].

Divya orthogrit tablet is marketed by Patanjali Ayurved Ltd. Divya orthogrit tablet is useful in arthritis, old arthritis, sprain and other inflammatory status. It contains Motha, Punarnava, Ashwagandha, Shalaki,

Giloy, Laksha, Shuddha Shilajit [30].

GO365 Nutra Tablet is marketed by Charak Pharma Pvt Ltd. It is a powerful combination of nutritional supplements like glucosamine HCL and chondroitin sulfate as well as Ayurvedic herbs like turmeric & boswellia, along with vitamin D3, amino acid and calcium for complete joint care. It helps to reduce inflammation and prevent cartilage degradation. It is helpful in reducing chronic joint pain, stiffness, and swelling. It helps to reduce chronic joint pain. It is also used to treat stiffness and swelling of the joints. The Ayurvedic herbs such as turmeric and boswellia help in soothing pain in the body [31].

Sandhivati Capsules is marketed by Dr Vaidya Company. It is an Ayurvedic medicine to provide relief from joint pain, muscular and arthritic pain. Sandhivati Vati is a combination of potent anti-inflammatory, antiarthritic and pain-relieving Ayurvedic formulations- maharasnadi kwatha and mahayograj guggulu. Maharasnadi Quath Ghan is a special concoction created using as many as 26 herbal ingredients, to produce an anti-inflammatory action that helps reduce swelling of the affected areas. Maharasanadi Quath also ensures seamless functioning of joints and muscles while maintaining a healthy nervous system. It is also known to support various neurological functions. Mahoyograj guggul is an anti-anemic blend which helps in purification of blood, maintaining good cholesterol levels apart from supporting comfortable joint movements. Mahoyograj guggul is also known to have certain anti-inflammatory properties. This Ayurvedic formulation reduces inflammation and stiffness, anti-inflammatory ingredients like rasna, guggulu, sunth, erand help to reduce joint swelling, pain, and increases mobility. Anti-inflammatory and antioxidant herbs like giloy and ashwagandha included in Sandhivati protect joints from damaging free radicals. This not only helps in relieving symptoms but also slows down the degenerative process. Thus, it helps in maintaining joint functions in the long term [32].

Dr. Ortho Ayurvedic Capsule is marketed by Divisa Store in India. Dr. Ortho Ayurvedic capsules are made with the blend of miraculous herbs and are greatly beneficial in providing relief from joint discomforts naturally. Dr. Ortho Ayurvedic capsules are great in relieving the painful condition of joints and muscles like stiffness, inflammation, and pain with the healing and inflammatory properties of efficient herbs. It contains *Boswellia serrata*, *Commiphora mukul*, *Pluchea lanceolata*, *Trigonella foenum graecum*, *Zingiber officinale*, *Withania somnifera*, *Purified asphaltam*, *Strychnos nux-vomica* [33].

Vita Green Shallaki is marketed by Green Cross Health Innovation. It contains 500 mg extract of Shallaki. Shallaki is a holy plant that is widely used in traditional medicine and is considered to be an important part

of Ayurvedic medicine. The oleo gum resin extracted from this plant has various medicinal properties. Arthritic patients can take 1-2 Shallaki tablets along with water to get relief from swelling in the joint. It reduces swelling as well as stiffness in the inflamed joints due to its anti-inflammatory property. Consuming Shallaki supplements (before taking food) on a regular basis also helps improve brain function as it prevents cell damage caused by free radicals due to its antioxidant activity. As per Ayurveda, Shallaki also provides relief from joint pains due to its analgesic property. Shallaki's Anti-inflammatory property helps in relieving joint pain. It also helps in arthritis problem. It nourishes bone joints and is a supplier of calcium in bones to make it stronger. It also helps in strengthening muscle and improve bone density and helps it in recovery from wear and tear. It counters pain by triggering enzymes that prevent inflammation. It prevents the inflammation of cartilage to help joints pain in your hands, knees, hips and spine. It ensures free mobility of the joints leading to reduced bone decay [34].

Rheumizap Tablet is marketed by Zealous Health Pvt Ltd. RHEUMIZAP is designed with Immunomodulatory herbs which ease joint inflammation, pain and prevent joint damage. This formulation will take care of regeneration of cartilage damaged due to arthritis and restore joint health. RHEUMIZAP restores immune system by selective immune-modulation to reduce joint excessive cytokine and chemokines production. RHEUMIZAP increases CD4+CD25+Foxp3+ regulatory T Cells and also inhibits IL-17, TNF alpha production at joint. RHEUMIZAP arrests the progress of disease and prevents further deterioration of disease conditions and improves quality of life. It contains *Rosmarinus officinalis*, *Curcuma longa*, *Azadirachta indica*, *Andrographis paniculata*, *Ocimum sanctum*, *Piper longum*, *Withania somnifera*, *Tinospora cordifolia*, *Moringa*, *Ficus religiosa*, *Astragalus membranaceus*, *Tripterygium wilfordii*, *Harpagophytum procumbens*, *Matricaria recutita*, *Ginkgo biloba*, *Terminalia arjuna*. It is used in joint pain, swelling, stiffness of knee joint, painful and swollen joints, restriction of joint movements [35].

Artho Sure Capsules 60 CAPS is marketed by Kapiva Adret Retail Pvt. Ltd. Artho Sure capsules are used as arthritis capsules, made with natural, herbal ingredients. These joint pain relief capsules contain Guggulu, Sudh Kuchla, Singhanad, Erand Mool, Nirgundi, and Methi. The blend of these elements in the product can be used to safeguard you from arthritis. Guggul is an Ayurvedic resin that has been used in Ayurvedic medicines for centuries due to its anti-inflammatory properties. It is known for helping to treat arthritis and improving joint flexibility. These capsules can help in relief from two of the most commonly affected areas of pain in arthritis i.e. back and knee pain. This product can be used to fight the symptoms of arthritis and to safeguard. It reduces inflammation around the swollen joints due to arthritis. The

consumption of the product can probably help to regain mobility in the affected areas. Its key ingredients like Boswellia and Guggul are anti-inflammatory in nature pain killers. Due to the presence of linolenic and lenoleic, fenugreek seeds it relieve joint pain and reduce inflammation [36].

DISCUSSION

In this review, our attempt was to compile the list of some top herbal formulations available in Indian market which are used in Rheumatoid Arthritis. Rheumatoid arthritis is associated with inflammation and pain and the presented herbal formulation are having some natural herbs and ingredients which have anti-inflammatory activities. Natural herbal formulations are considered safer than synthetic drugs. Hence, they have attracted people to consume.

CONCLUSION

Arthritis is one of the major diseases, which affected a big population in the world. Due to hectic modern life style, where individual don't get time for proper exercise and balanced diet, it is prevalent even among younger generation. Allopathic treatment like NSAIDs, steroids etc. are available to relieve pain and inflammation associated with the disease but with severe side effects. Many plants have shown potent anti-arthritic activity and many researchers have worked on these plant. Our efforts were to compile some top herbal formulations used in treatment of Rheumatoid Arthritis which are available in Indian Market and to study their herbal ingredients.

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